射频和微波器件产品系列

Renesas Electronics
www.renesas.com

2011.11

本文档涉及到“硅微波晶体管”，“硅微波单片集成电路”和“微波砷化镓(GaAs)器件”的内容。

注意 砷化镓(GaAs)产品	本产品使用砷化镓(GaAs)。 吸入或咽下 GaAs 蒸汽和粉末对人体健康有害，因此请遵守以下几点。 • 按照相关法律和条例处理本产品。如果没有适用的法律和/或条例，请根据以下建议处理本产品。 1. 委托一家能够收集、运输和处理含砷材料及其他此类工业废料的处理公司（持相关执照）。 2. 将本产品与一般工业废物和生活垃圾分开，确保其在得到最终处理之前受到监管（作为受特别管制的工业废弃物品）。 • 请勿焚烧、销毁、切割、粉碎本产品或对其进行化学溶解。 • 请勿舔食本产品或以任何方式使其进入口中。

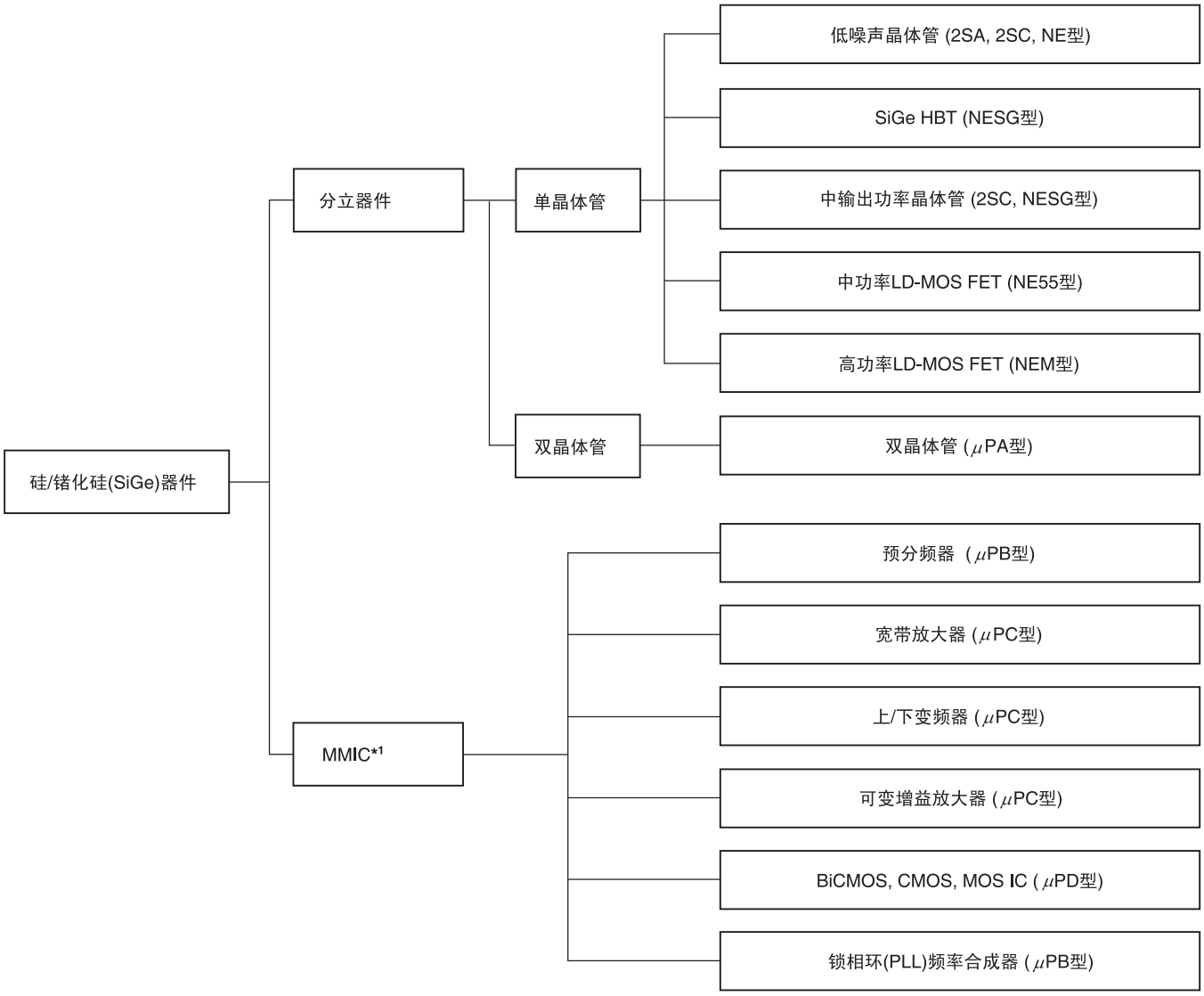
注意　尽管本器件的设计极为坚固，但仍可能受到 ESD（静电放电）的影响而损坏。必须始终对本器件实施 ESD 保护。静电很容易在人体或设备上产生数千伏的电位，并在未受到检测的情况下放电。必须采取行业标准相应的 ESD 防范措施。

目录

1. 产品树形图

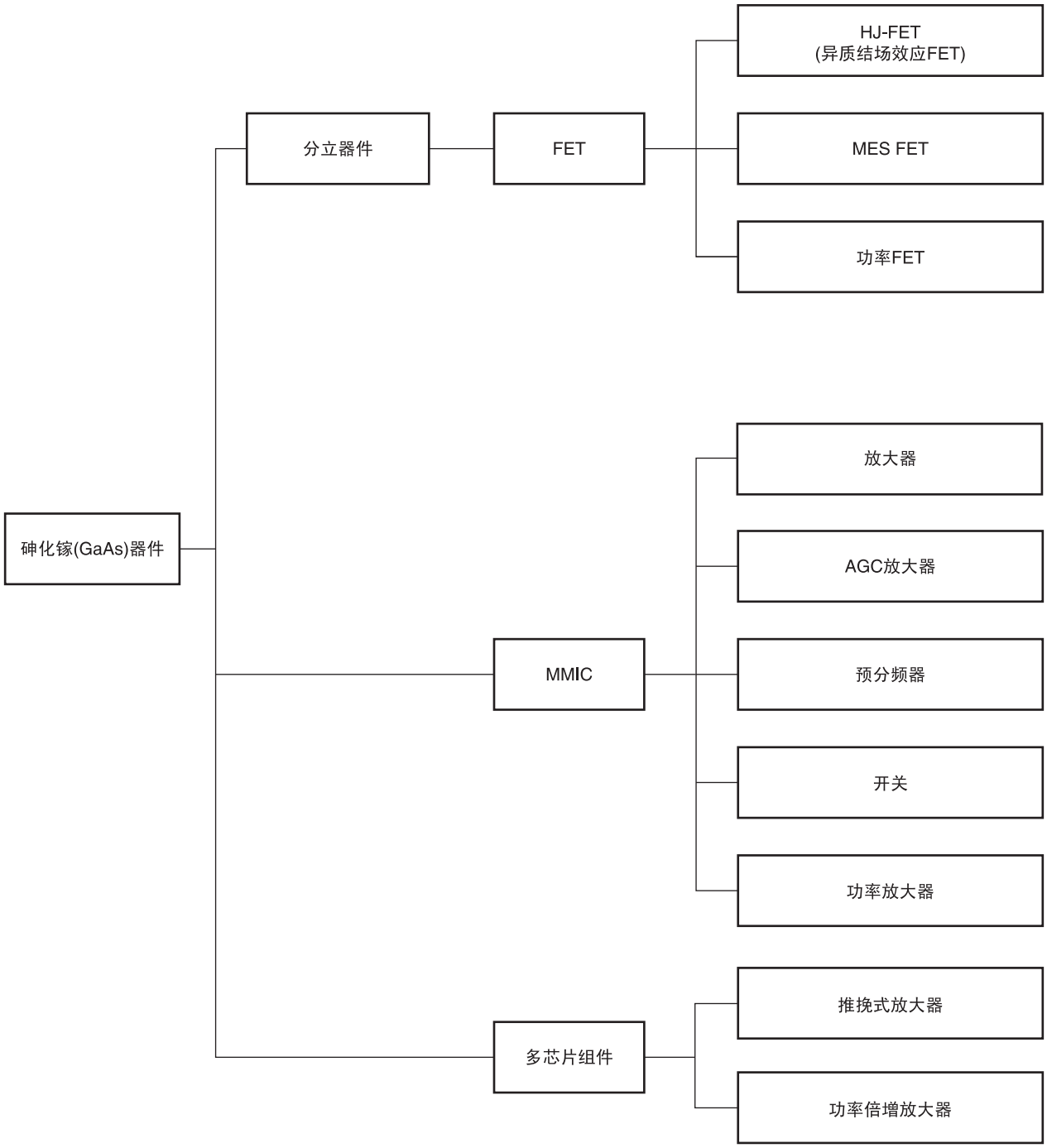
产品系列如下面的树形图表所示。

(1) 硅/锗化硅(SiGe)器件产品



***1** 微波单片集成电路

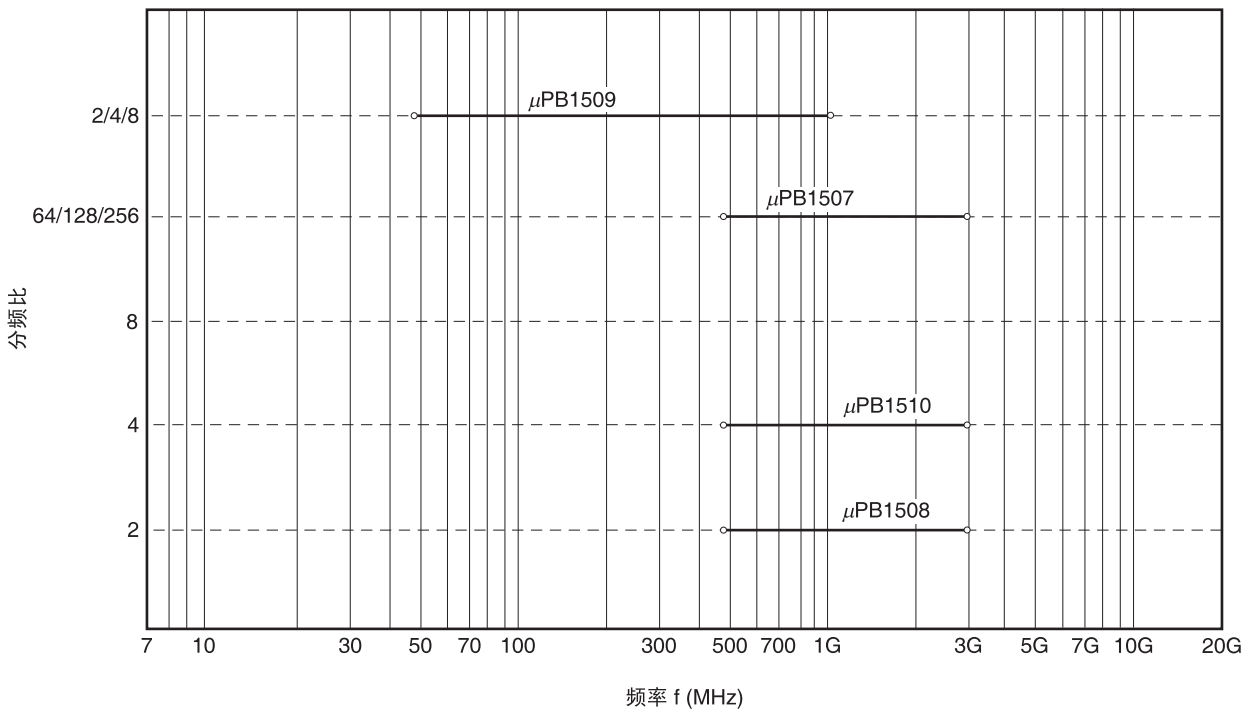
(2) 砷化镓(GaAs)器件产品



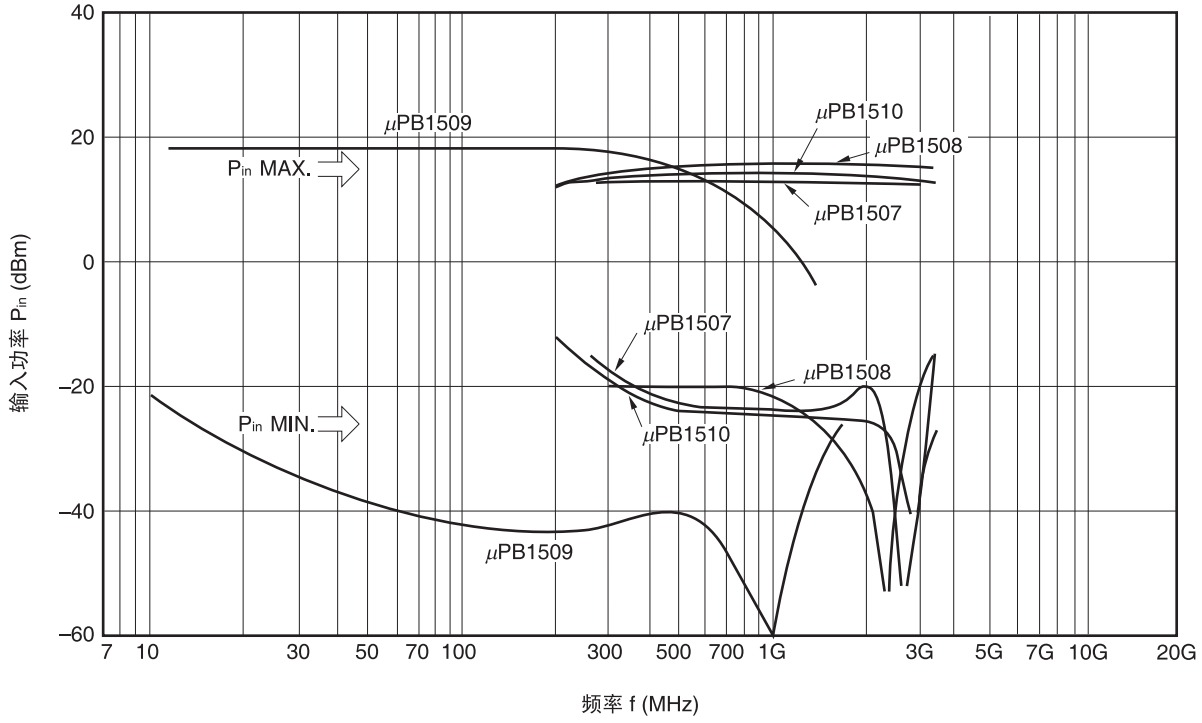
2. 射频和微波器件特性图

2.1 预分频器

分频比 vs. 频率

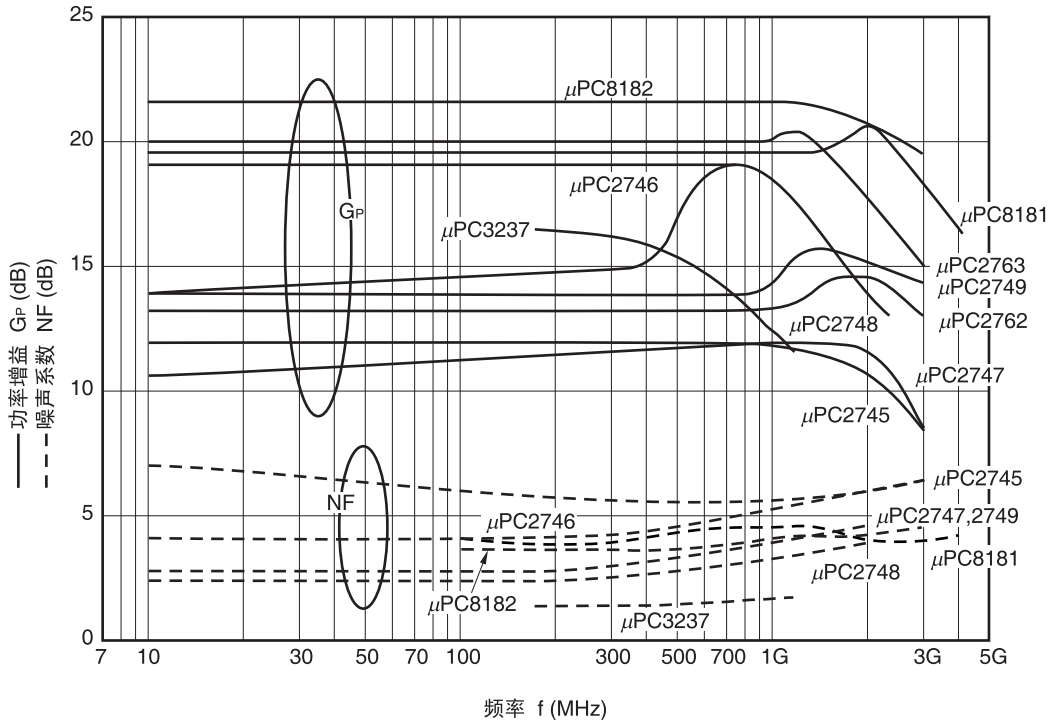


输入功率 vs. 频率

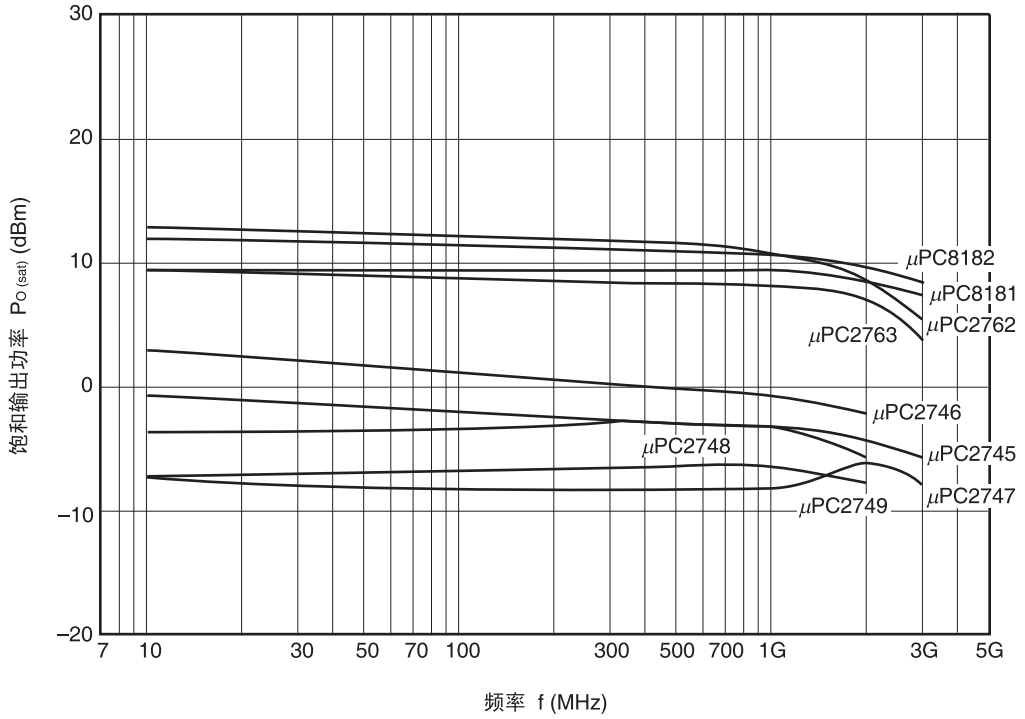


2.2 3 V宽带放大器

功率增益, 噪声系数 vs. 频率

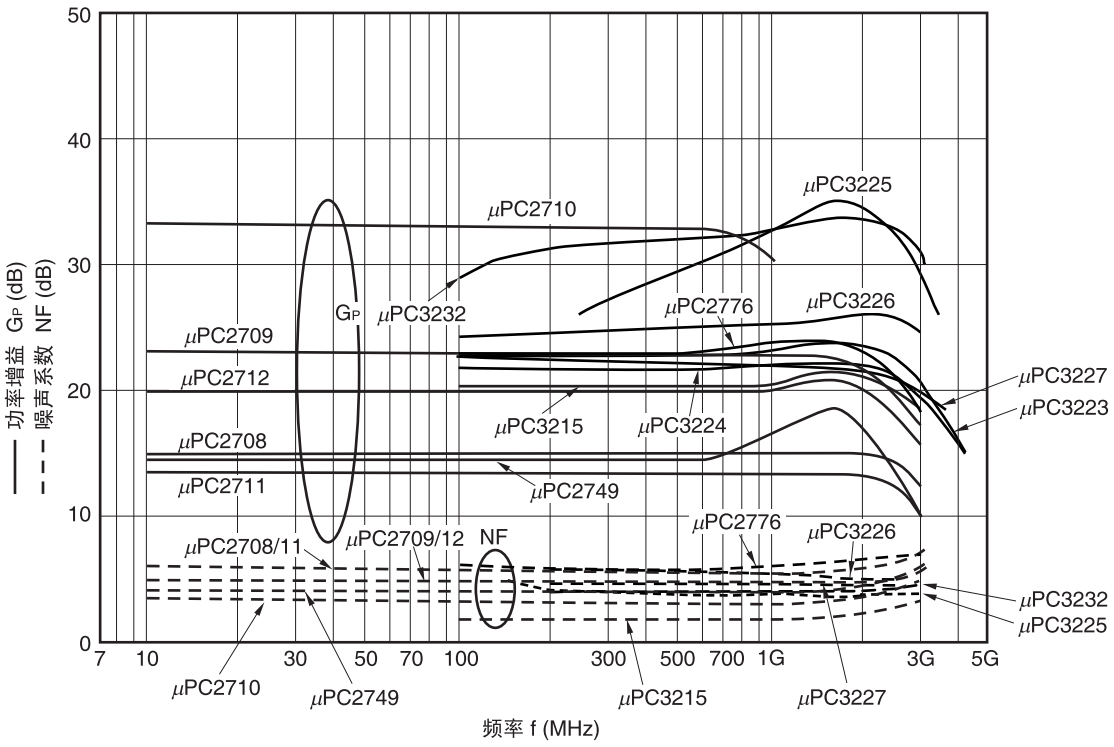


饱和输出功率 vs. 频率

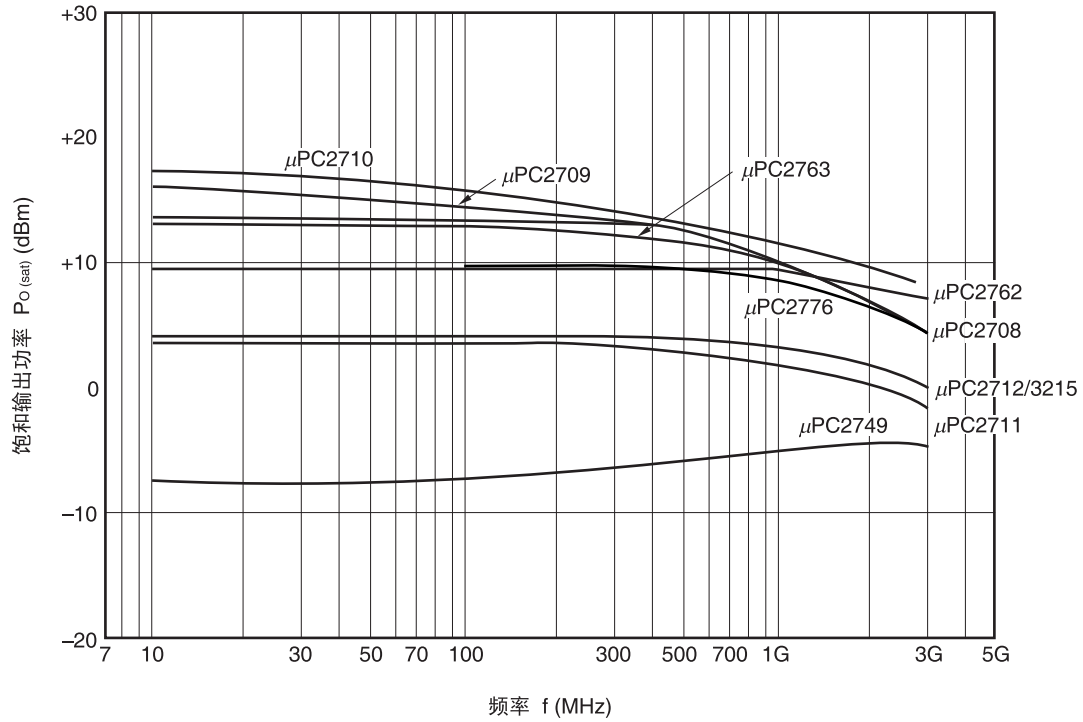


2.3 5 V宽带放大器

功率增益, 噪声系数 vs. 频率

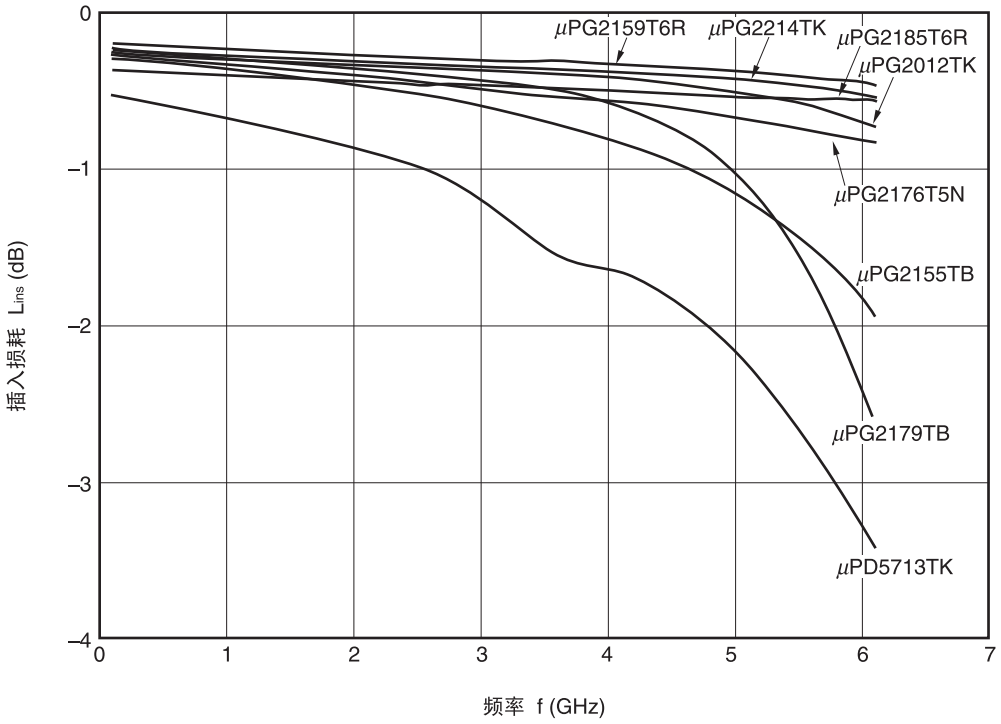


饱和输出功率 vs. 频率

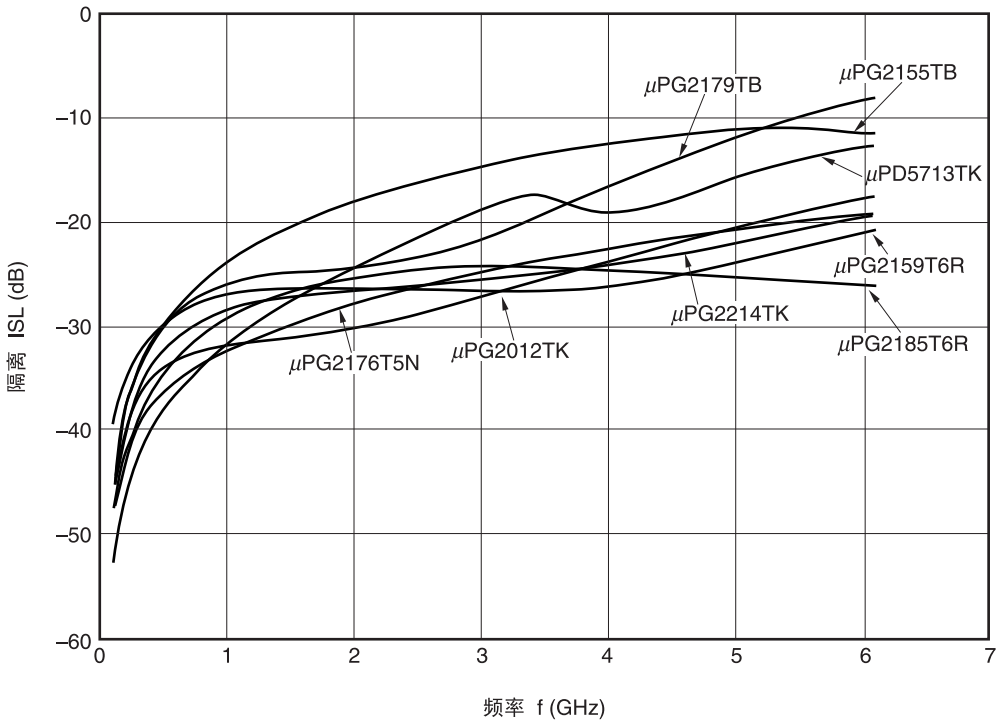


2.4 开关

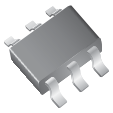
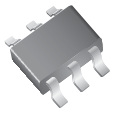
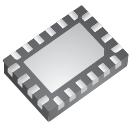
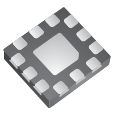
插入损耗 vs. 频率



隔离 vs. 频率



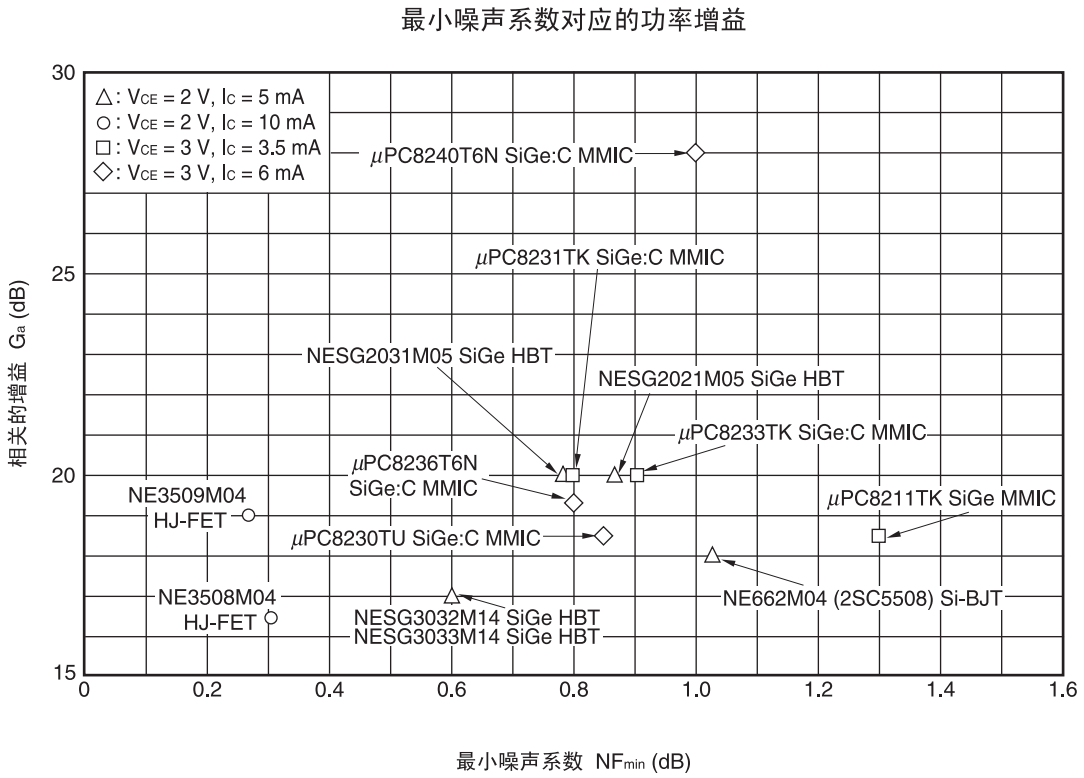
普通开关IC产品系列

功率	SPDT	DPDT, SP3T 和其他
4 W	**SPDT**  μPG2155TB (2.1×2.0×0.9) **单控制SPDT**  μPG2156TB (2.1×2.0×0.9)	**2位SP4T**  μPG2183T6C (3.0×3.0×0.8)
2 W	**SPDT**  μPG2176T5N μPG2409T6X (1.5×1.5×0.4) **SPDT**  μPG2009TB μPG2010TB μPG2409TB (2.1×2.0×0.9)	**DP4T**  μPG2181T5R Loss = 0.60 dB (3.5×2.5×0.6) **SP3T**  μPG2404T6Q Loss = 0.55 dB (2.0×1.35×0.4)
1 W	**SPDT**  μPG2163T5N μPG2415T6X (1.5×1.5×0.4) **SPDT**  μPG2185T6R μPG2406T6R μPG2411T6R (1.0×1.0×0.4) **SPDT**  μPG2411T7C (2.0×1.3×0.4) **SPDT**  μPG2030TK μPG2406TK μPG2408TK μPG2415TK (1.5×1.3×0.6) **SPDT**  μPG2406TB μPG2408TB μPG2418TB (2.1×2.0×0.9)	**DPDT**  μPG2162T5N μPG2164T5N (1.5×1.5×0.4) **SP3T**  μPG2413T6Z (1.5×1.5×0.4) **SP3T**  μPG2150T5L μPG2413T6M (2.0×2.0×0.4) **SP3T**  μPG2405T6Q Loss = 0.55 dB (2.0×1.35×0.4)
0.5 W	**SPDT**  μPG2159T6R ISL = 25 dB@2 GHz (1.0×1.0×0.4) **单控制SPDT**  μPD5713TK μPG2012TK μPG2214TK (1.5×1.3×0.6)	**2位SP4T**  μPD5731T6M (2.0×2.0×0.4) **单控制DPDT**  μPD5738T6N (1.5×1.5×0.4)

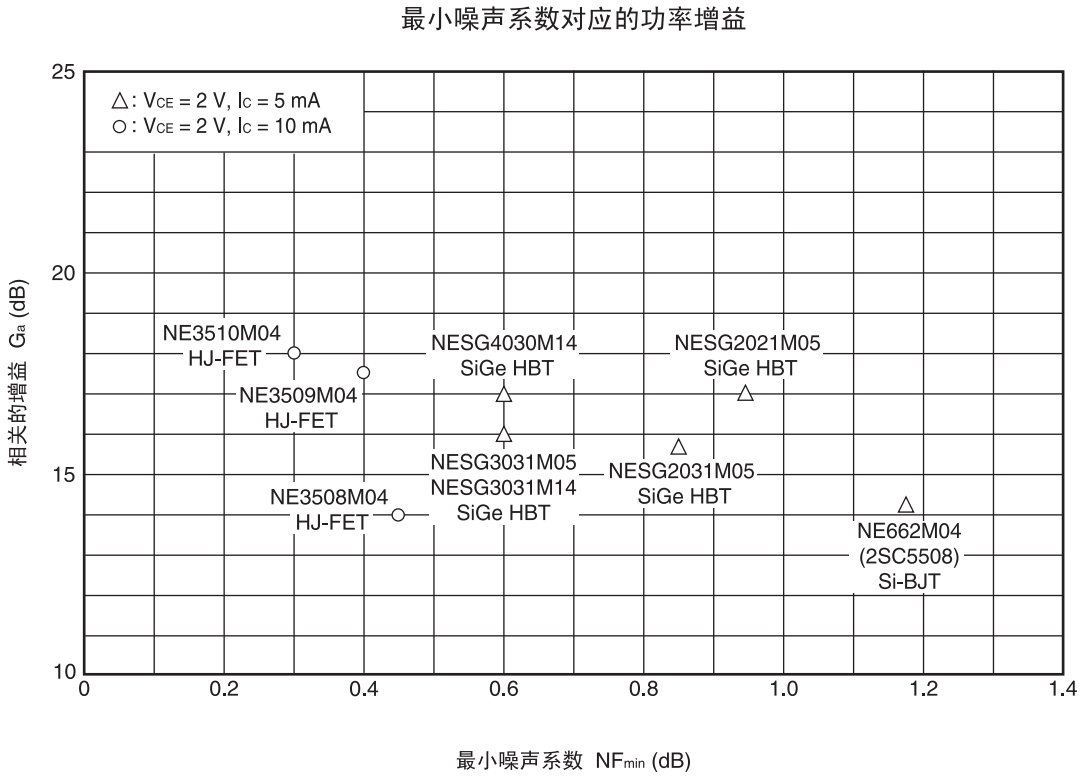
(单位：mm)

2.5 适用 1.5 GHz/2.4 GHz/5.8 GHz 用途的低噪声放大器(LNA)器件

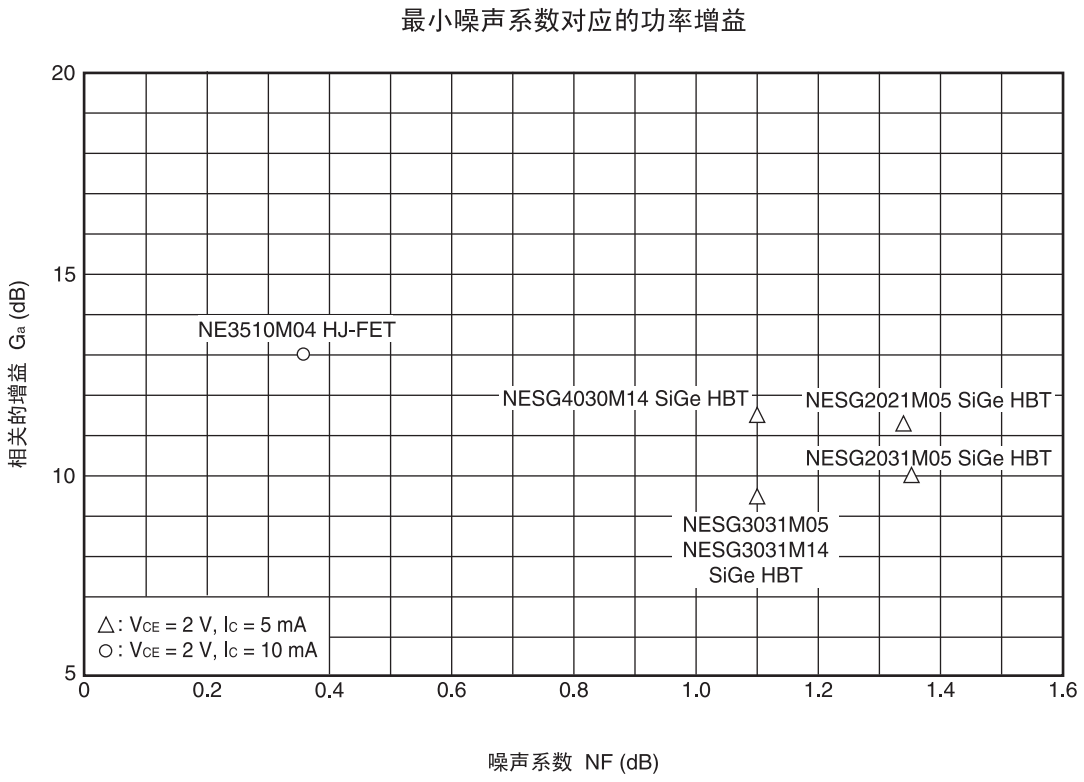
(1) 1.5 GHz 用途



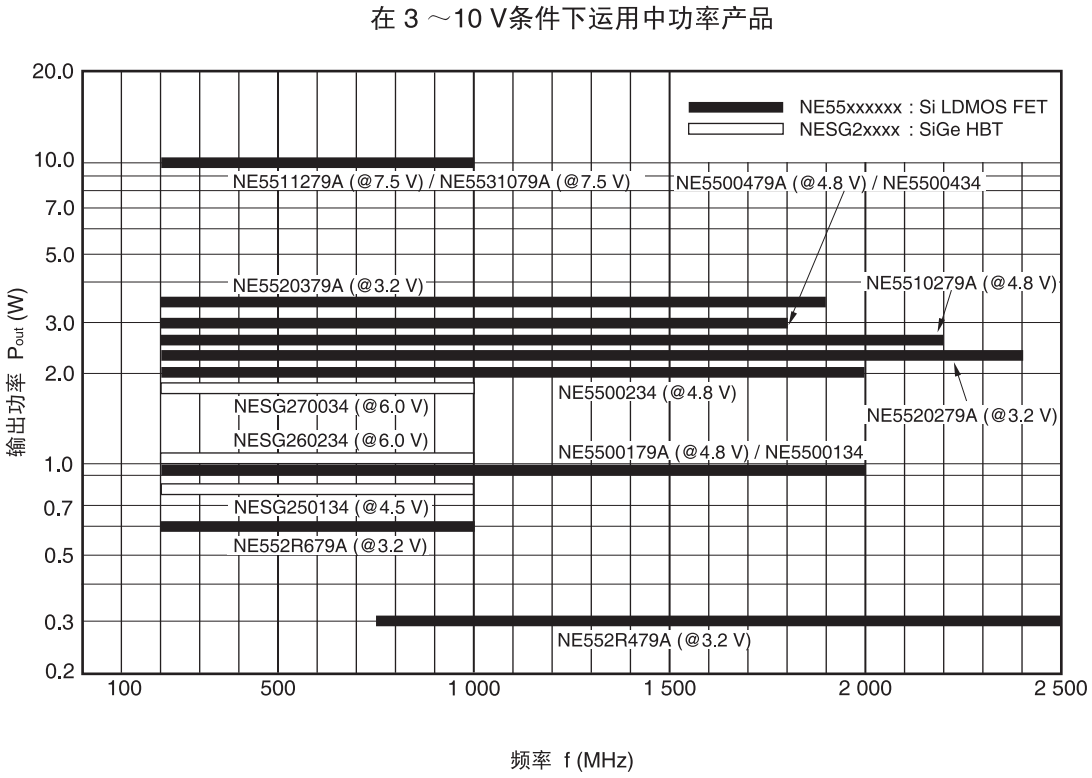
(2) 2.4 GHz 用途



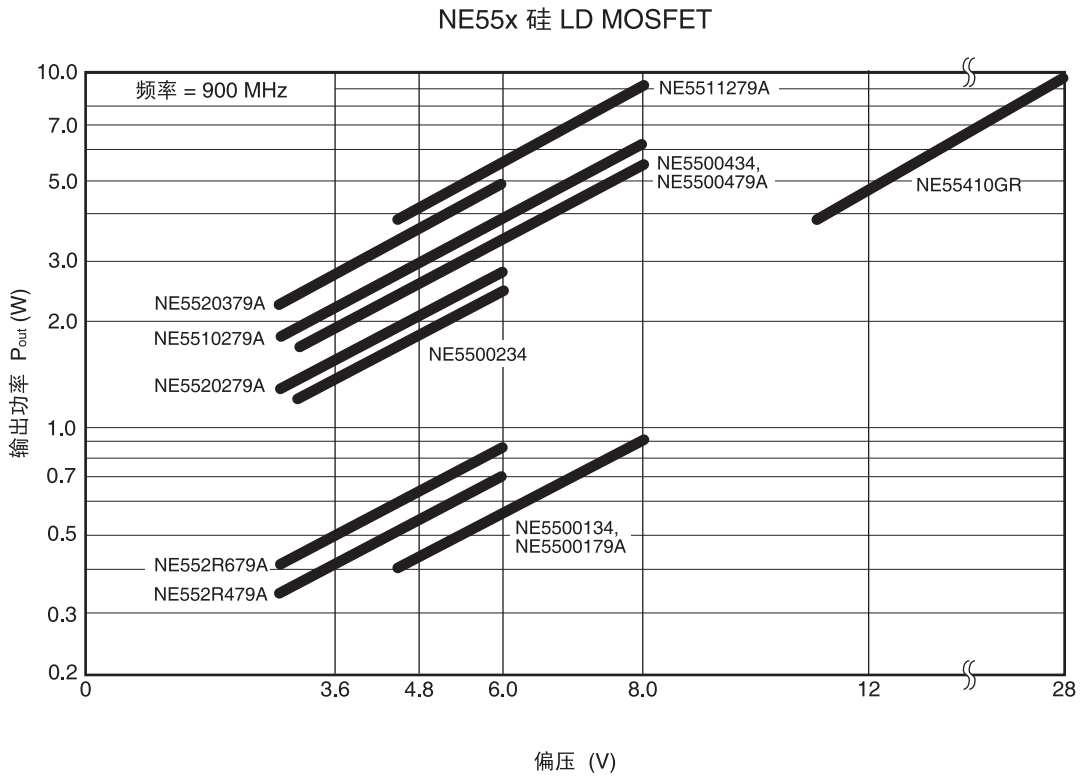
(3) 5.8 GHz 用途


最小噪声系数对应的功率增益
20
15
10
5
0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
相关的增益 Ga (dB)
噪声系数 NF (dB)
NE3510M04 HJ-FET
NESG4030M14 SiGe HBT
NESG2021M05 SiGe HBT
NESG2031M05 SiGe HBT
NESG3031M05
NESG3031M14
SiGe HBT
△: VCE = 2 V, IC = 5 mA
○: VCE = 2 V, IC = 10 mA

2.6 硅LD MOS FET/SiGe HBT



2.7 NE55x硅LD MOS FET



3. 产品列表

3.1 IC

3.1.1 AGC放大器

器件编号	应用	电气特性 (T_A = +25°C)											封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	G_{MAX} (dB)	G_{MAX} @f (MHz)	GCR (dB)	GCR @f (MHz)	NF (dB)	NF @f (MHz)	其他性能		
μPC3217GV	CATV 调谐器，视频放大器，AGC 放大器	5	23	10-100	53	45	53	45	6.5	45	IM_3 = 50 dBc		8SSOP
μPC3218GV	CATV 调谐器，视频放大器，AGC 放大器	5	23	10-100	63	45	53	45	3.5	45	IM_3 = 50 dBc		8SSOP
μPC3219GV	CATV 调谐器，视频放大器，AGC 放大器	5	36.5	10-100	42.5	45	42.5	45	9.0	45	IM_3 = 58 dBc		8SSOP
μPC3221GV	CATV 调谐器，视频放大器，AGC 放大器	5	33	10-100	60	45	50	45	4.2	45	IM_3 = 56 dBc		8SSOP
μPC3231GV	CATV 调谐器，视频放大器，AGC 放大器	5	36	10-100	65	45	61	45	5.0	45	IM_3 = 53.5 dBc		8SSOP
μPC3234GV	数字 CATV，数字地面电视，电缆调制解调器，AGC 放大器	5	28.5	30-100	63	45	58.5	45	4.0	45	IM_3 = 54.0 dBc		8SSOP
μPC3243T7A	AGC 放大器，视频放大器，下变频器	3.3	85（睡眠时 < 10 μA）	50-300	CG: 78（带 SAW 滤波器的损失）	80	60	80	7.6	80	IM_3 = 59 dBc		28QFN

3.1.2 下变频器

器件编号	应用	电气特性 (T_A = +25°C)						封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	CG (dB)	@f (MHz)	其他性能	
μPC2756TB	GPS，下变频器	3	6	100-2 000	14	900	NF = 10 dB, P_O = –8 dBm@f = 900 MHz	6SMM
μPC2757TB	移动通讯，下变频器	3	5.6	100-2 000	15	800	OIP_3 = +5 dBm @f = 800 MHz	6SMM
μPC2758TB	移动通讯，下变频器	3	11	100-2 000	19	800	OIP_3 = +11 dBm@f = 800 MHz	6SMM
μPC3220GR	CATV 调谐器，视频放大器，下变频器	5	42	30-250	33.0	84	GCR = 45.5 dB, IIP_3 = +1 dBm, V_O = 3.7 V_{p-p} (Z_L = 1 kΩ)	16SSOP
μPC3228T5S	CATV 调谐器，视频放大器，下变频器	5	85	20-800	28	80	GCR = 70 dB, IM_3 = 57 dBc, NF = 8.3 dB	32QFN
μPC3243T7A	AGC 放大器，视频放大器，下变频器	3.3	85（睡眠时 < 10 μA）	50-300	78（带 SAW 滤波器的损失）	80	GCR = 60 dB, IM_3 = 59 dBc, NF = 7.6 dB	28QFN
μPC8112TB	移动通讯，下变频器	3	8.5	800-2 000	13	1 900	IIP_3 = –7 dBm@f_{RFin} = 1 900 MHz	6SMM

3.1.3 预分频器

器件编号	应用	电气特性 (T_A = +25°C)				封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	性能	
μPB1507GV	DBS 调谐器，3 GHz，64，128，256，预分频器	5	19	500-3 000	1/256, 1/128, 1/64, V_O = 1.6 V_{p-p}	8SSOP
μPB1508GV	DBS 调谐器，3 GHz，2，预分频器	5	12	500-3 000	1/2, P_O = –7 dBm	8SSOP
μPB1509GV	移动通讯，1 GHz，2，4，8，预分频器	3	5	50-1 000@1/8	1/2, 1/4, 1/8, V_O = 0.3 V_{p-p}	8SSOP
μPB1510GV	DBS 调谐器，3 GHz，4，预分频器	5	14	500-3 000	1/4, P_O = –7 dBm	8SSOP

3.1.4 开关

(1/3)

器件编号	应用	电气特性 (T_A = +25°C)									封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	L_{ins} (dB)	L_{ins} @f (GHz)	ISL (dB)	ISL @f (GHz)	$P_{in\ (0.1\ dB)}$ (dBm)	$P_{in\ (0.1\ dB)}$ @f (GHz)	
μPD5713TK	移动通讯，一般，单线控制，SPDT 开关	2.8	0.0001	50-2 500	0.6	1	32.5	1	17	1	6L2MM (1511)
μPD5731T6M	移动通讯，宽带 SP4T 开关	2.8/0	0.00001	10-2 500	1.0	1	35	1	17	1	12TSQFN
μPD5738T6N	移动通讯，宽带 DPDT 开关	2.8/0	0.00001	10-2 500	0.8	1.0	22	1.0	+15	1.0	6TSON
μPG2009TB	移动通讯，N-CDMA，W-CDMA，双线控制，SPDT 开关	2.8	0.001	500-2 500	0.25	1	28	1	34	1	6SMM
μPG2010TB	移动通讯，N-CDMA，W-CDMA，单线控制，SPDT 开关	2.8	0.05	500-2 500	0.25	1	28	1	33	1	6SMM
μPG2012TB	移动通讯，单线控制，SPDT 开关	2.8	0.05	500-2 500	0.3	2.0	28	2.0	20.5	2.0	6SMM
μPG2012TK	移动通讯，单线控制，SPDT 开关	2.8	0.05	500-2 500	0.3	2.0	30	2.0	20.5	2.0	6L2MM (1511)
μPG2015TB	移动通讯，单线控制，SPDT 开关	2.8	0.004	500-2 500	0.3	2.0	27	2.0	27	2.0	6SMM
μPG2030TK	移动通讯，双线控制，SPDT 开关	2.8	0.004	500-2 500	0.3	2.0	27	2.0	27	2.0	6L2MM (1511)
μPG2150T5L	2.4 GHz 无线 LAN，Bluetooth®，SP3T 开关	2.85	0.05	500-2 500	0.5	2.5	35	2.5	$P_{in\ (1\ dB)}$ = 31	2.5	12TSQFN
					0.6	2.5	18	2.5	$P_{in\ (1\ dB)}$ = 25	2.5	
μPG2155TB	双线控制，GaAs SPDT 开关	2.6/0	0.0005	900	0.35	1	24	1	37.5	1.8	6SMM
μPG2156TB	单线控制，SPDT 开关	2.6/0	0.04	1 000	0.45	1	23	1	37	1	6SMM
μPG2159T6R	移动通讯，双线控制，GaAs SPDT 开关	1.8-3.3	0.0002	50-3 000	0.23	2.0	27	2.0	+22	2.0	6TSSON
μPG2162T5N	2.4 GHz 无线 LAN，5 GHz 无线 LAN，DPDT 开关	2.8-5.0	0.0001	2 400-2 500, 4 900-6 000	0.60	2.5	30	2.5	+31	2.5	6TSON
					0.85	6.0	27	6.0	+29	6.0	
μPG2163T5N	2.4 GHz 无线 LAN，5 GHz 无线 LAN，双线控制，SPDT 开关	2.8-5.0	0.0001	2 400-2 500, 4 900-6 000	0.40	2.5	38	2.5	+31	2.5	6TSON
					0.50	6.0	30	6.0	+29	6.0	
μPG2164T5N	2.4 GHz 无线 LAN，5 GHz 无线 LAN，DPDT 开关	2.8-5.0	0.0001	2 400-2 500, 4 900-6 000	0.50	2.5	25	2.5	+31	2.5	6TSON
					0.70	6.0	17	6.0	+29	6.0	
μPG2176T5N	WiMAX，2.4 GHz 无线 LAN，5 GHz 无线 LAN，双线控制，High Power SPDT 开关	2.5-5.0	0.016	2 300-2 700, 3 300-3 800, 4 900-5 850	0.45	2.5	27	2.5	+37	2.5	6TSON
					0.70	5.85	21	5.85	+37	5.85	
μPG2179TB	移动通讯，双线控制，SPDT 开关	2.8	0.004	50-2 500	0.30	2.0	27	2.0	+29	2.0	6SMM
μPG2181T5R	WiMAX，三线控制，High Power DP4T 开关	2.8-3.2	0.6	2 300-2 700, 3 300-3 800	0.8	2.5	25	2.5	$P_{in\ (1\ dB)}$ = +40 (Tx)	2.5	20RQFN

器件编号	应用	电气特性 (T_A = +25°C)									封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	L_{ins} (dB)	L_{ins} @f (GHz)	ISL (dB)	ISL @f (GHz)	$P_{in\ (0.1\ dB)}$ (dBm)	$P_{in\ (0.1\ dB)}$ @f (GHz)	
μPG2183T6C	移动通讯，SP4T 开关	3	0.55	500-2 500	0.4	1.0	24	1.0	+37.5	0.9	16QFN (T6C)
μPG2185T6R	2.4 GHz 无线 LAN，5 GHz 无线 LAN，双线控制，SPDT 开关	2.8-3.3	0.0001	2 400-2 500, 4 900-6 000	0.40	2.5	26	2.5	+29	2.5	6TSSON
					0.50	6.0	25	6.0	+29	6.0	
μPG2193T6E	移动通讯，GSM+W-CDMA SP8T 开关	2.5-3.0	-	824-915	0.4	(GSM_LB_TX)	-	-	-	-	20TQFN
				1 710-1 910	0.6	(GSM_HB_TX)					
μPG2214TB	移动通讯，双线控制，SPDT 开关	1.8-5.3	0.004	50-3 000	0.30	2.0	27	2.0	$P_{in\ (1\ dB)}$ = +27	2.0	6SMM
μPG2214TK	移动通讯，双线控制，SPDT 开关	1.8-5.3	0.004	50-3 000	0.30	2.0	27	2.0	$P_{in\ (1\ dB)}$ = +27	2.0	6L2MM (1511)
μPG2404T6Q	移动通讯，NFC，SP3T 开关	2.8	0.001	10-2 000	0.45	1.0	26	1.0	+33	1.0	10TSSON
μPG2405T6Q	移动通讯，NFC，SP3T 开关	2.8	0.0002	500-2 500	0.45	1.0	28	1.0	+31	1.0	10TSSON
μPG2406T6R	双线控制，GaAs SPDT 开关	1.8-3.3/0	0.0002	10-3 000	0.4	1.0	27	1.0	+29	1.0	6TSSON
μPG2406TB	双线控制，GaAs SPDT 开关	1.8-5.3/0	0.0002	10-3 000	0.4	1.0	27	1.0	+29	1.0	6SMM
μPG2406TK	双线控制，GaAs SPDT 开关	1.8-5.3/0	0.0002	10-3 000	0.4	1.0	27	1.0	+29	1.0	6L2MM (1511)
μPG2408TB	移动通讯，双线控制，SPDT 开关	2.5-5.3	0.0003	50-3 000	0.5	2.5	18	2.5	$P_{in\ (1\ dB)}$ = +30	2.5	6SMM
μPG2408TK	移动通讯，双线控制，SPDT 开关	2.5-5.3	0.0003	50-3 000	0.5	2.5	18	2.5	$P_{in\ (1\ dB)}$ = +30	2.5	6L2MM (1511)
μPG2409T6X	WiMAX，双线控制，High Power SPDT 开关	2.7-3.3	0.0001	500-6 000	0.45	2.5	30	2.5	+36	2.5	6TSON
μPG2409TB	WiMAX，双线控制，High Power SPDT 开关	2.7-5.3	0.0001	500-3 800	0.45	2.5	26	2.5	+35	2.5	6SMM
μPG2411T6R	2.4 GHz 无线 LAN，5 GHz 无线 LAN，双线控制，SPDT 开关	1.8-3.6	0.0001	1 000-8 000	0.50	2.5	25	2.5	+28	2.5	6TSSON
					0.60	6.0	25	6.0	+28	6.0	
μPG2411T7C	2.4 GHz 无线 LAN，5 GHz 无线 LAN，双线控制，SPDT 开关	2.8-3.3	0.0001	2 000-6 000	0.6	2.5	25	2.5	$P_{in\ (1\ dB)}$ = +30.5	2.5	6RTSON
					0.7	6.0	25	6.0			
μPG2413T6M	2.4 GHz 无线 LAN，Bluetooth，SP3T 开关	1.8-3.6	0.0001	500-3 000	0.5	2.5	18	2.5	+28	2.5	12TSQFN
μPG2413T6Z	2.4 GHz 无线 LAN，Bluetooth，SP3T 开关	1.8-3.6	0.0001	500-3 000	0.5	2.5	18	2.5	+28	2.5	8TSON
μPG2415T6X	2.4 GHz 无线 LAN，5 GHz 无线 LAN，双线控制，SPDT 开关	2.7-3.3	0.0001	50-6 000	0.45	2.5	28	2.5	+31	2.0-6.0	6TSON
					0.55	6.0	26	6.0			
μPG2415TK	2.4 GHz 无线 LAN，5 GHz 无线 LAN，双线控制，SPDT 开关	2.7-5.3	0.0001	500-6 000	0.45	2.5	28	2.5	+31	2.0-6.0	6L2MM (1511)
					0.65	6.0	26	6.0			

备注 NFC: 近距离无线通信

器件编号	应用	电气特性 (T_A = +25°C)									封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	L_{ins} (dB)	L_{ins} @f (GHz)	ISL (dB)	ISL @f (GHz)	$P_{in\ (0.1\ dB)}$ (dBm)	$P_{in\ (0.1\ dB)}$ @f (GHz)	
μPG2417T6M	NFC (近距离无线通信) 封装内置 1, 2, 4, 8 pF 电容器, SP6T 开关	2.85	0.002	13.56	0.5	0.01356	50	0.01356	+32	0.01356	12TSQFN (T6M)
μPG2418TB	移动通讯， 2.4 GHz 无线 LAN, 双线控制，SPDT 开关	2.5-5.3	0.0003	500-3 000	0.45	2.5	21	2.5	+29	0.5-3.0	6SMM
μPG2419T6R	TransferJet ™, 双线控制, GaAs SPDT 开关	2.65-3.6	0.0001	2 400-6 000	0.45	4.5-5.0	26	4.0-5.0	+24	4.5-5.0	6TSSON
μPG2422TK	2.4 GHz 无线 LAN， 5 GHz 无线 LAN， 双线控制，SPDT 开关	1.8-5.3	0.0001	50-6 000	0.35 0.55	2.5 6.0	28 24	2.5 6.0	+28	2.0-6.0	6L2MM (1511)

3.1.5 矩阵开关

器件编号	应用	电气特性 (T_A = +25°C)									封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	ISL D/U (dB)	ISL D/U @f (GHz)	L_{ins} (dB)	L_{ins} @f (GHz)	G_P (dB)	G_P @f (GHz)	
μPD5720K	LNB，开关控制箱，4x2 矩阵开关	5	0.05	250-2 150	35	0.25-2.15	7.0	0.25-2.15	-	-	20QFN
μPD5739T7A	LNB，开关控制箱，增益和音调/电压控制器的 4x2 矩阵开关(G_P = 18 dB)	3.3	40	950-2 150	30	2.15	-	-	18	0.95	28QFN
μPD5753T7G	LNB，开关控制箱，和音调/电压控制器的 4x2 矩阵开关	3.3	1.9	250-2 150	33	2.15	7.5	2.15	-	-	20QFN (T7G)
μPD5754T7A	LNB，开关控制箱，增益和音调/电压控制器的 4x2 矩阵开关	3.3	40	950-2 150	30	2.15	-	-	18	0.95	28QFN

3.1.6 上变频器

器件编号	应用	电气特性 (T_A = +25°C)									封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	CG (dB)	CG @f_{RFout} (MHz)	$P_{O\ (sat)}$ (dB)	$P_{O\ (sat)}$ @f_{RFout} (MHz)	OIP_3 (dBm)	OIP_3 @f_{RFout} (MHz)	
μPC8106TB	移动通讯，N-CDMA，上变频器	3	9	400-2 000	7	1 900	–4	1 900	+2.0	1 900	6SMM
μPC8172TB	移动通讯，N-CDMA，W-CDMA，上变频器	3	9	800-2 500	8.5	1 900	0	1 900	+6.0	1 900	6SMM
μPC8187TB	移动通讯，N-CDMA，W-CDMA，上变频器	2.8	15	800-2 500	11	1 900	+2.5	1 900	+10	1 900	6SMM

3.1.7 宽带放大器

(1/2)

器件编号	应用	电气特性 (T_A = +25°C)									封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	G_P (dB)	G_P @f (GHz)	NF (dB)	NF @f (GHz)	$P_{O(sat)}$ (dBm)	$P_{O(sat)}$ @f (GHz)	
μPC2708TB	一般，中输出，宽带放大器	5	26	2 900	15	1.0	6.5	1.0	+10	1.0	6SMM
μPC2709TB	卫星放送(BS)转换器，中输出，宽带放大器	5	25	2 300	23	1.0	5	1.0	+11.5	1.0	6SMM
μPC2710TB	一般，中输出，宽带放大器	5	22	1 000	33	0.5	3.5	0.5	+13.5	0.5	6SMM
μPC2711TB	卫星放送(BS)转换器，宽带放大器	5	12	2 900	13	1.0	5	1.0	+1	1.0	6SMM
μPC2712TB	卫星放送(BS)转换器，宽带放大器	5	12	2 600	20	1.0	4.5	1.0	+3	1.0	6SMM
μPC2745TB	移动通讯，宽带放大器	3	7.5	2 700	12	0.5	6	0.5	−1	0.5	6SMM
μPC2746TB	移动通讯，宽带放大器	3	7.5	1 500	19	0.5	4	0.5	0	0.5	6SMM
μPC2747TB	移动通讯，宽带放大器	3	5	1 800	12	0.9	3.3	0.9	−7	0.9	6SMM
μPC2748TB	移动通讯，宽带放大器	3	6	200-1 500	19	0.9	2.8	0.9	−3.5	0.9	6SMM
μPC2749TB	移动通讯，GPS，宽带放大器.	3	6	2 900	16	1.9	4	1.9	−6	1.9	6SMM
μPC2762TB	移动通讯，中输出，宽带放大器	3	26.5	2 900	13	0.9	6.5	0.9	+8	0.9	6SMM
μPC2763TB	移动通讯，中输出，宽带放大器	3	27	2 700	20	0.9	5.5	0.9	+9.5	0.9	6SMM
μPC2776TB	卫星放送(BS)转换器，中输出，宽带放大器	5	25	2 700	23	1.0	6	1.0	+6.5	1.0	6SMM
μPC3215TB	卫星放送(BS)转换器，宽带放大器	5	14	2 900	20.5	1.5	2.3	1.5	+3.5	1.5	6SMM
μPC3223TB	卫星放送(BS)转换器，中输出，宽带放大器	5	19	3 200	23	1.0	4.5	1.0	+12	1.0	6SMM
μPC3224TB	卫星放送(BS)转换器，宽带放大器	5	9	3 200	21.5	1.0	4.3	1.0	+4	1.0	6SMM
μPC3225TB	卫星放送(BS)转换器，中输出，宽带放大器	5	24.5	2 150	32.5	0.95	3.7	0.95	+15.5	0.95	6SMM
μPC3226TB	卫星放送(BS)转换器，中输出，宽带放大器.	5	15.9	2 200	23	1.0	5.3	1.0	+11.5	1.0	6SMM
μPC3227TB	卫星放送(BS)转换器，宽带放大器	5	4.7	2 000	25	1.0	4.7	1.0	−4	1.0	6SMM
μPC3232TB	卫星放送(BS)转换器，中输出，宽带放大器.	5	26	950-2 150	33.5	2.2	4.1	2.2	+8.5	2.2	6SMM
μPC3236TK	卫星放送(BS)转换器，中输出，宽带放大器	5	24	1 000-2 200	38	2.2	2.6	2.2	$P_{O(1\ dB)}$ = +7.5	2.2	6L2MM (1511)
μPC3237TK	移动通讯，低噪声，宽带放大器.	2.8	5	470-770	13.5	0.77	1.5	0.77	+1.3	0.77	6L2MM (1511)
μPC3239TB	卫星放送(BS)转换器，中输出，宽带放大器	3.3	29	1 000-2 200	25.5	2.2	4.3	2.2	$P_{O(1\ dB)}$ = +8	2.2	6SMM
μPC3240TB	卫星放送(BS)转换器，宽带放大器	3.3	13	1 000-2 200	24.5	2.2	4.5	2.2	$P_{O(1\ dB)}$ = −4	2.2	6SMM
μPC3241TB	卫星放送(BS)转换器，中输出，宽带放大器	3.3	19.8	1 000-2 200	24	2.2	4.3	2.2	$P_{O(1\ dB)}$ = +6	2.2	6SMM
μPC3242TB	LNB, 宽带放大器	3.3	4.3	1 000-2 200	22	0.25-2.2	4.0	1.0-2.2	$P_{O(1\ dB)}$ = −9.5	2.2	6SMM
μPC3244TB	LNB，中输出，宽带放大器	3.3	18	1 000-2 200	31	2.2	3.1	1.0-2.2	$P_{O(1\ dB)}$ = +6	2.2	6SMM

器件编号	应用	电气特性 (T_A = +25°C)									封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	G_P (dB)	G_P @f (GHz)	NF (dB)	NF @f (GHz)	$P_{O\ (sat)}$ (dBm)	$P_{O\ (sat)}$ @f (GHz)	
μPC8128TB	移动通讯，本振缓冲器，宽带放大器.	2.4-3.3	2.8	100-1 900	12.5	1.0	6	1.0	$P_{O\ (1\ dB)}$ = –4	1.0	6SMM
μPC8151TB	移动通讯，N-CDMA，W-CDMA，本振缓冲器，宽带放大器	2.4-3.3	4.2	100-1 900	12.5	1.0	6.0	1.0	$P_{O\ (1\ dB)}$ = +2.5	1.0	6SMM
μPC8178TK	移动通讯，本振缓冲器，宽带放大器	2.4-3.3	1.9	100-2 400	11	1.0	5.5	1.0	$P_{O\ (1\ dB)}$ = –5.5	1.0	6L2MM (1511)
μPC8179TK	移动通讯，N-CDMA，W-CDMA，本振缓冲器，宽带放大器	2.4-3.3	4	100-2 400	13.5	1.0	5	1.0	$P_{O\ (1\ dB)}$ = +3	1.0	6L2MM (1511)
μPC8181TB	移动通讯，中输出，宽带放大器	3	23	4 000	22	2.4	4.5	2.4	+7.0	2.4	6SMM
μPC8182TB	移动通讯，中输出，宽带放大器	3	30	2 900	20.5	2.4	5.0	2.4	+8.0	2.4	6SMM
μPD5740T6N	数字地面电视，带击穿功能的 LNA-IC，宽带放大器	2.8	5	50-1 800	13.5	0.77	1.5	0.77	-	-	6TSON
μPD5750T7D	带击穿功能的 LNA-IC，宽带放大器	1.8	3.1	50-1 800	12.5	770	1.4	770	-	-	6WLBGA

3.1.8 功率放大器

器件编号	应用	电气特性 (T_A = +25°C)						封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	P_O (dBm)	P_O @f (MHz)	其他性能	
μPA901TU	5.8 GHz 数字无绳电话，ETC，SiGe RF IC，5.8 GHz 中功率放大器	3.6	$I_{C\ (total)}$ = 90	5 800	$P_{O\ (1\ dB)}$ = +19	5 800	V_{CE} = 3.6V, G_P = 22 dB @f = 5.8 GHz	8L2MM

3.1.9 低噪声放大器 (LNA)

器件编号	应用	电气特性 (T_A = +25°C)											封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	G_P (dB)	G_P @f (MHz)	NF (dB)	NF @f (MHz)	$P_{in\ (1\ dB)}$ (dBm)	$P_{in\ (1\ dB)}$ @f (MHz)	L_{ins} (dB)	L_{ins} @f (MHz)	
μPC3237TK	移动通讯，数字地面电视，SiGe LNA-IC，宽带放大器	2.8	5	470-770	13.5	770	1.5	770	–19	770	-	-	6L2MM (1511)
μPC8211TK	GPS，移动通讯，SiGe LNA-IC	3	3.5	1 575	18.5	1 575	1.3	1 575	–24.5	1 575	-	-	6L2MM (1511)
μPC8230TU	GPS，SiGe:C LNA-IC	3	6	1 575	18.5	1 575	0.85	1 575	–17	1 575	-	-	8L2MM
μPC8231TK	GPS，移动通讯，SiGe:C LNA-IC	3	3.8	1 575	20	1 575	0.8	1 575	–22	1 575	-	-	6L2MM (1511)
μPC8233TK	GPS，移动通讯，SiGe:C LNA-IC	2.7	3.5	1 575	20	1 575	0.9	1 575	–23	1 575	-	-	6L2MM (1511)
μPC8236T6N	GPS，SiGe:C LNA-IC	2.7	6.5	1 575	19.5	1 575	0.8	1 575	–19	1 575	-	-	6TSON
μPC8240T6N	GPS，SiGe:C LNA-IC	2.7	6.5	1 575	28	1 575	1.0	1 575	–26.5	1 575	-	-	6TSON
μPD5740T6N	数字地面电视，带击穿功能的 LNA-IC，宽带放大器	2.8	5	50-1 800	13.5	770	1.5	770	-	-	1.3	770	6TSON
μPD5750T7D	带击穿功能的 LNA-IC，宽带放大器	1.8	3.1	50-1 800	12.5	770	1.4	770	-	-	1.4	770	6WLBGA

3.1.10 低噪声放大器 (低频使用)

器件编号	应用	电气特性 (T_A = +25°C)				封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	性能	
μPD5729T6J	传声器，高增益放大器，低噪声放大器 (低频使用)	3	0.2	0.001	N_V = –99 dBV, G_V = 6 dB	3TL2MM
μPD5741T6J	传声器，高增益放大器，低噪声放大器 (低频使用)	2	0.25	0.001	N_V = –101 dBV, G_V = 6.5 dB	3TL2MM
μPD5742T6J	传声器，高增益放大器，低噪声放大器 (低频使用)	2	0.37	0.001	N_V = –98 dBV, G_V = 9 dB	3TL2MM
μPD5747T6J	传声器，高增益放大器，低噪声放大器 (低频使用)	1.5	0.19	0.001	N_V = –101 dBV, G_V = 5.7 dB	3TL2MM
μPD5758T6J	传声器，高增益放大器，低噪声放大器 (低频使用)	1.5	0.19	0.001	N_V = –101 dBV, G_V = 5.7 dB	3TL2MM
μPD5759T6J	传声器，高增益放大器，低噪声放大器 (低频使用)	2	0.31	0.001	N_V = –98 dBV, G_V = 9 dB	3TL2MM

3.2 分立器件

3.2.1 低噪声双结晶体管

(1/2)

器件编号	应用	电气特性 (T_A = +25°C)				封装
		电压 (V)	电流 (mA)	频率 (MHz)	NF (dB) 或其他性能	符号
2SA1977 (NE97733)	一般，Bip. Tr.，(PNP)	−8	−20	1 000	NF = 1.5 dB	3MM
2SA1978 (NE97833)	一般，Bip. Tr.，(PNP)	−10	−3	1 000	NF = 2.0 dB	3MM
2SC3356 (NE85633)	一般，Bip. Tr.	10	7	1 000	NF = 1.1 dB	3MM
2SC3357 (NE85634)	一般，Bip. Tr.	10	7	1 000	NF = 1.1 dB	3PMM
2SC3583 (NE68133)	一般，Bip. Tr.	8	7	1 000	NF = 1.2 dB	3MM
2SC3585 (NE68033)	一般，Bip. Tr.	6	5	2 000	NF = 1.8 dB	3MM
2SC4093 (NE85639E)	一般，Bip. Tr.	10	7	1 000	NF = 1.1 dB	4MM
2SC4094 (NE68139E)	一般，Bip. Tr.	8	7	1 000	NF = 1.2 dB	4MM
2SC4095 (NE68039E)	一般，Bip. Tr.	6	5	2 000	NF = 1.8 dB	4MM
2SC4226 (NE85630)	一般，Bip. Tr.	3	7	1 000	NF = 1.2 dB	3SMM
2SC4227 (NE68130)	一般，Bip. Tr.	3	7	1 000	NF = 1.4 dB	3SMM
2SC4228 (NE68030)	一般，Bip. Tr.	3	5	2 000	NF = 1.9 dB	3SMM
2SC4536 (NE46134)	一般，Bip. Tr.	10	50	1 000	NF = 2.0 dB	3PMM
2SC4570 (NE58130)	一般，Bip. Tr.	5	5	1 000	$\|S_{21e}\|^2$ = 5.0 dB (最小值)	3SMM
2SC4571 (NE58230)	一般，Bip. Tr.	5	5	1 000	$\|S_{21e}\|^2$ = 5.0 dB (最小值)	3SMM
2SC4703 (NE46234)	一般，CATV 调谐器，Bip. Tr.， 功率放大器，.	5	50	1 000	NF = 2.3 dB	3PMM
2SC4957 (NE68539E)	一般，Bip. Tr.	3	3	2 000	NF = 1.5 dB	4MM
2SC5004 (NE58219)	一般，Bip. Tr.	5	5	1 000	$\|S_{21e}\|^2$ = 5.0 dB (最小值)	3USMM
2SC5006 (NE85619)	一般，寻呼机，LNA，Bip. Tr.	3	7	1 000	NF = 1.2 dB	3USMM
2SC5007 (NE68119)	一般，寻呼机，LNA，Bip. Tr.	3	7	1 000	NF = 1.4 dB	3USMM
2SC5008 (NE68019)	一般，寻呼机，LNA，Bip. Tr.	3	5	2 000	NF = 1.9 dB	3USMM
2SC5010 (NE68519)	一般，Bip. Tr.	3	3	2 000	NF = 1.5 dB	3USMM
2SC5011 (NE85618)	一般，Bip. Tr.	10	7	1 000	NF = 1.1 dB	4SMM
2SC5012 (NE68118)	一般，Bip. Tr.	8	7	1 000	NF = 1.2 dB	4SMM
2SC5013 (NE68018)	一般，Bip. Tr.	6	5	2 000	NF = 1.8 dB	4SMM
2SC5015 (NE68518)	一般，移动通讯，DBS 调谐器，PDC，LNA，Bip. Tr.	3	3	2 000	NF = 1.5 dB	4SMM
2SC5180 (NE68618)	一般，Bip. Tr.	1	3	2 000	NF = 1.5 dB	4SMM
2SC5181 (NE68619)	一般，Bip. Tr.	1	3	2 000	NF = 1.5 dB	3USMM
2SC5185 (NE68718)	一般，移动通讯，寻呼机，PDC，LNA，Bip. Tr.	1	3	2 000	NF = 1.3 dB	4SMM
2SC5186 (NE68719)	一般，Bip. Tr.	1	3	2 000	NF = 1.3 dB	3USMM
2SC5336 (NE856M02)	一般，Bip. Tr.	10	20	1 000	$\|S_{21e}\|^2$ = 12 dB (典型值)	4PMM
2SC5337 (NE461M02)	一般，Bip. Tr.	10	50	1 000	$\|S_{21e}\|^2$ = 7.0 dB (最小值)	4PMM
2SC5338 (NE462M02)	一般，CATV 调谐器，Bip. Tr.，功率放大器	5	50	1 000	$\|S_{21e}\|^2$ = 8.5 dB (最小值)	4PMM
2SC5369 (NE696M01)	一般，移动通讯，PDC，LNA，Bip. Tr.	3	3	2 000	NF = 1.3 dB	6SMM

器件编号	应用	电气特性 (T_A = +25°C)				封装
		电压 (V)	电流 (mA)	频率 (MHz)	NF (dB)或其他性能	符号
2SC5454 (NE67739)	DBS 调谐器，缓冲放大器，Bip. Tr.	3	5	2 000	NF = 1.5 dB	4MM
2SC5455 (NE67839)	DBS 调谐器，缓冲放大器， Bip. Tr.	3	7	2 000	NF = 1.5 dB	4MM
2SC5507 (NE661M04)	VCO，缓冲放大器，Bip. Tr.	2	2	2 000	NF = 1.2 dB	F4TSMM
2SC5508 (NE662M04)	N-CDMA，W-CDMA，VCO，DRO，缓冲放大器，Bip. Tr.	2	5	2 000	NF = 1.1 dB	F4TSMM
2SC5509 (NE663M04)	VCO, 缓冲放大器，Bip. Tr.	2	10	2 000	NF = 1.2 dB	F4TSMM
2SC5606 (NE66219)	VCO, 缓冲放大器，Bip. Tr.	2	5	2 000	NF = 1.2 dB	3USMM
2SC5704 (NE662M16)	VCO, 缓冲放大器，Bip. Tr.	2	5	2 000	NF = 1.1 dB	6L2MM (1208)
2SC5787 (NE894M13)	VCO, 缓冲放大器，Bip. Tr.	1	5	2 000	NF = 1.4 dB	3L2MM
2SC5801 (NE851M13)	VCO, OSC, 缓冲放大器，Bip. Tr.	1	10	2 000	NF = 1.9 dB	3L2MM
NE202930	一般，UHF 带域低噪声，低失真放大器，Bip. Tr.	5	30	1 000	NF = 1.5 dB (典型值)	3SMM
NE661M05	一般，Bip. Tr.	2	5	2 000	NF = 1.2 dB	F4TSMM

3.2.2 SiGe HBT

器件编号	应用	电气特性 (T_A = +25°C)				封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	性能	
NESG2021M05	2.4 GHz 无线 LAN，5.8 GHz 数字无绳电话，ITS，LNA，SiGe HBT	2	3	5 200	NF = 1.3 dB	F4TSMM
NESG2021M16	2.4 GHz 无线 LAN，ITS，LNA，SiGe HBT	2	3	5 200	NF = 1.3 dB	6L2MM (1208)
NESG2031M05	2.4 GHz 无线 LAN，ITS，LNA，SiGe HBT	2	5	5 200	NF = 1.3 dB	F4TSMM
NESG2031M16	2.4 GHz 无线 LAN，ITS，LNA，SiGe HBT	2	5	5 200	NF = 1.3 dB	6L2MM (1208)
NESG204619	移动通讯，VCO，SiGe HBT	1	3	2 000	NF = 0.8 dB	3USMM
NESG2101M05	W-CDMA，2.4 GHz 无线 LAN，SiGe HBT	3.6	$I_{C\ (set)}$ = 10	2 000	$P_{O\ (1\ dB)}$ = 21 dBm	F4TSMM
NESG2101M16	W-CDMA，2.4 GHz 无线 LAN，SiGe HBT	3.6	$I_{C\ (set)}$ = 10	2 000	$P_{O\ (1\ dB)}$ = 21 dBm	6L2MM (1208)
NESG210719	移动通讯，VCO，SiGe HBT	1	5	2 000	NF = 0.9 dB	3USMM
NESG210833	UHF 带域低噪声，低失真放大器，SiGe HBT	5	5	1 000	NF = 0.7 dB (典型值)@V_{CE} = 5 V, I_C = 5 mA, f = 1 GHz	3MM
NESG220033	UHF 带域低噪声，低失真放大器，SiGe HBT	5	10	1 000	NF = 0.75 dB (典型值)@V_{CE} = 5 V, I_C = 10 mA, f = 1GHz	3MM
NESG220034	UHF 带域低噪声，低失真放大器，SiGe HBT	5	10	1 000	NF = 0.7 dB (典型值)@V_{CE} = 5 V, I_C = 10 mA, f = 1 GHz	3PMM
NESG240033	UHF 带域低噪声，低失真放大器，SiGe HBT	5	15	1 000	NF = 0.75 dB (典型值)@V_{CE} = 5 V, I_C = 15mA, f = 1 GHz	3MM
NESG240034	UHF 带域低噪声，低失真放大器，SiGe HBT	5	15	1 000	NF = 0.7 dB (典型值)@V_{CE} = 5 V, I_C = 15 mA, f = 1 GHz	3PMM
NESG250134	VHF 带域功率放大器，FRS，移动通讯，SiGe HBT	3.6	$I_{C\ (set)}$ = 30	460	$P_{O\ (1\ dB)}$ = +29 dBm@f = 460 MHz, V_{CE} = 3.6 V, G_L = 19 dB@f = 460 MHz	3PMM
NESG260234	UHF 带域中功率 Bip. Tr.，FRS，GMRS，移动通讯，SiGe HBT	6	$I_{C\ (set)}$ = 30	460	$P_{O\ (1\ dB)}$ = +30 dBm@f = 460 MHz, V_{CE} = 6 V, G_L = 22 dB@f = 460 MHz	3PMM
NESG270034	UHF 带域中功率 Bip. Tr.，FRS，GMRS，移动通讯，SiGe HBT	6	$I_{C\ (set)}$ = 30	460	P_O = 33.5 dBm, V_{CE} = 6 V, G_L = 19.5 dB@f = 460 MHz	3PMM
NESG3031M05	2.4 GHz 无线 LAN，5 GHz 无线 LAN，LNA，SiGe HBT	2	6	5 800	NF = 1.1 dB@f = 5.8 GHz, G_a = 9.5 dB@f = 5.8 GHz	F4TSMM
NESG3031M14	2.4 GHz 无线 LAN，5 GHz 无线 LAN，LNA，SiGe HBT	2	6	5 800	NF = 1.1 dB@f = 5.8 GHz, G_a = 9.5 dB@f = 5.8 GHz	4L2MM
NESG3032M14	L 带 LNA，GPS 等，SiGe HBT	2	6	2 000	NF = 0.6 dB@f = 2.0 GHz	4L2MM
NESG3033M14	L 带 LNA，GPS 等，内置保护元件 SiGe HBT	2	6	2 000	NF = 0.6 dB@f = 2.0 GHz	4L2MM
NESG340033	UHF 带域低噪声，低失真放大器，SiGe HBT	3.3	15	1 000	NF = 0.65 dB (典型值)@V_{CE} = 3.3 V, I_C = 15 mA, f = 1 GHz	3MM
NESG340034	UHF 带域低噪声，低失真放大器，SiGe HBT	5	15	1 000	NF = 0.65 dB (典型值)@V_{CE} = 5 V, I_C = 15 mA, f = 1 GHz	3PMM
NESG3400M01	UHF 带域低噪声，低失真放大器，SiGe HBT	3.3	15	1 000	NF = 0.65 dB (典型值)@V_{CE} = 3.3 V, I_C = 15 mA, f = 1 GHz	6SMM
NESG4030M14	2.4 GHz 无线 LAN，5 GHz 无线 LAN，LNA，SiGe HBT	2	6	2 000/5 800	NF = 0.6 dB@f = 2.0 GHz, NF = 1.1 dB@f = 5.8 GHz, G_a = 11.5 dB@f = 5.8 GHz	4L2MM

3.2.3 双晶体管

器件编号	应用	电气特性 (T_A = +25°C)				封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	NF (dB)或其他性能	
μPA800T	多用途，双晶体管	1	3	2 000	NF = 1.9 dB	6SMM
μPA801T	多用途，双晶体管	3	7	1 000	NF = 1.2 dB	6SMM
μPA802T	多用途，双晶体管	3	7	1 000	NF = 1.4 dB	6SMM
μPA804T	多用途，双晶体管	5	5	1 000	$\|S_{21e}\|^2$ = 5.0 dB (最小值)	6SMM
μPA806T	多用途，双晶体管	3	3	2 000	NF = 1.5 dB	6SMM
μPA807T	多用途，双晶体管	2	3	2 000	NF = 1.5 dB	6SMM
μPA808T	多用途，双晶体管	2	3	2 000	NF = 1.3 dB	6SMM
μPA810T	多用途，双晶体管	3	7	1 000	NF = 1.2 dB	6SMM
μPA811T	多用途，双晶体管	3	5	2 000	NF = 1.9 dB	6SMM
μPA812T	多用途，双晶体管	3	7	1 000	NF = 1.4 dB	6SMM
μPA813T	多用途，双晶体管	5	5	1 000	$\|S_{21e}\|^2$ = 5.0 dB (最小值)	6SMM
μPA828TD	移动通讯，VCO，双晶体管	1	3	2 000	NF = 1.3 dB	6L2MM (1208)
μPA831TD	移动通讯，VCO，双晶体管	Q1:3, Q2:3	Q1:7, Q2:7	Q1:1 000, Q2:1 000	Q1:NF = 1.2 dB, Q2:NF = 1.4 dB	6L2MM (1208)
μPA860TD	移动通讯，VCO，双晶体管	Q1:3, Q2:1	Q1:3, Q2:5	Q1:2 000, Q2:2 000	Q1:NF = 1.5 dB, Q2:NF = 1.4 dB	6L2MM (1208)
μPA861TD	移动通讯，VCO，双晶体管	Q1:1, Q2:1	Q1:3, Q2:5	Q1:2 000, Q2:2 000	Q1:NF = 1.5 dB, Q2:NF = 1.4 dB	6L2MM (1208)
μPA862TD	移动通讯，VCO，双晶体管	Q1:3, Q2:1	Q1:3, Q2:10	Q1:2 000, Q2:2 000	Q1:NF = 1.5 dB, Q2:NF = 1.9 dB	6L2MM (1208)
μPA863TD	移动通讯，VCO，双晶体管	Q1:1, Q2:1	Q1:3, Q2:10	Q1:2 000, Q2:2 000	Q1:NF = 1.3 dB, Q2:NF = 1.9 dB	6L2MM (1208)
μPA869TD	移动通讯，VCO，双晶体管	Q1:1, Q2:1	Q1:3, Q2:10	2 000	Q1:NF = 0.8 dB, Q2:NF = 1.9 dB	6L2MM (1208)
μPA873TD	移动通讯，VCO，双晶体管	1	10	2 000	NF = 1.9 dB	6L2MM (1208)
μPA895TD	移动通讯，VCO，双晶体管	1	5	2 000	NF = 1.9 dB	6L2MM (1208)

备注　　除特别注明以外，Q1 与 Q2 是相等的。

3.2.4 低噪声GaAs FET，HBT，HJ-FET

器件编号	应用	电气特性 (T_A = +25°C)							封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	NF (dB)	NF @f (GHz)	G_a (dB)	G_a @f (GHz)	
NE3210S01	DBS 变频器，LNA，HJ-FET	2	10	4 000-18 000	0.35	12	13.5	12	S01
NE3503M04	DBS 变频器，LNA，HJ-FET	2	10	12 000	0.55	12	11.5	12	F4TSMM
NE3508M04	GPS，GaAs，LNA 等，HJ-FET	2	10	2 000	0.45	2	14	2	F4TSMM
NE3509M04	GPS，GaAs，LNA 等，HJ-FET	2	10	2 000	0.4	2	17.5	2	F4TSMM
NE3510M04	GaAs，卫星无线电(SDARS, DMB 等)，LNA，HJ-FET	2	15	4 000	0.45	4	16	4	F4TSMM
NE3511S02	GaAs，HJ-FET	2	10	12 000	0.3	12	13.5	12	S02
NE3512S02	GaAs，HJ-FET	2	10	12 000	0.35	12	13.5	12	S02
NE3513M04	LNB，X，Ku-Band 低噪声信号放大，GaAs，HJ-FET	2	10	12 000	0.45	12	13	12	F4TSMM
NE3514S02	GaAs，HJ-FET	2	10	20 000	0.75	20	10	20	S02
NE3515S02	LNB，X，Ku-Band 低噪声信号放大，GaAs，HJ-FET	2	10	12 000	0.3	12	12.5	12	S02
NE3517S03	LNB，K-Band 低噪声信号放大，GaAs，HJ-FET	2	10	20 000	0.7	20	13.5	20	S03
NE3519M04	GaAs，卫星无线电(SDARS 等)，L，C Band 低噪声信号放大，HJ-FET	2	10	2 000	0.4	2	18.5	2	4SMM
NE4210S01	DBS 变频器，LNA，HJ-FET，下变频器	2	10	4 000-18 000	0.5	12	13	12	S01
NE3520S03	LNB，K-Band 低噪声信号放大，GaAs，HJ-FET	2	10	20 000	0.65	20	14	20	S03

3.2.5 功率晶体管/FET

(1/2)

器件编号	应用	电气特性 (T_A = +25°C)				封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	性能	
2SC5288 (NE68939)	多用途，中功率 Bip. Tr.	3.6	I_{Cq} = 1	1 900	$P_{in\ (1\ dB)}$ = 24 dBm (class AB)	4MM
2SC5289 (NE69039)	多用途，中功率 Bip. Tr.	3.6	I_{Cq} = 1	1 900	$P_{in\ (1\ dB)}$ = 27 dBm (class AB)	4MM
2SC5750 (NE67718)	无线通信 PA，(0.9-2.4 GHz), 功率放大器，中功率 Bip. Tr.	2.8	I_{Cq} = 8	1 800	$P_{O\ (1\ dB)}$ = 15 dBm	4SMM
2SC5751 (NE677M04)	无线通信 PA，(0.9-2.4 GHz), 功率放大器，中功率 Bip. Tr.	2.8	I_{Cq} = 8	1 800	$P_{O\ (1\ dB)}$ = 15 dBm	F4TSMM
2SC5752 (NE67818)	无线通信 PA，(0.9-2.4 GHz), 功率放大器，中功率 Bip. Tr.	2.8	I_{Cq} = 10	1 800	$P_{O\ (1\ dB)}$ = 18 dBm	4SMM
2SC5753 (NE678M04)	无线通信 PA，(0.9-2.4 GHz), 功率放大器，中功率 Bip. Tr.	2.8	I_{Cq} = 10	1 800	$P_{O\ (1\ dB)}$ = 18 dBm	F4TSMM
2SC5754 (NE664M04)	Bluetooth，无线通信 PA，(0.9-2.4 GHz)，功率放大器，中功率 Bip. Tr.	3.6	I_{Cq} = 4	1 800	$P_{O\ (1\ dB)}$ = 26 dBm	F4TSMM
NE5500134	移动通讯，PDC，GSM，功率放大器，功率 MOS FET	4.8	I_{Dset} = 200	450-2 500	P_{out} = 29.5 dBm, G_L = 13.0 dB, Efficiency = 55%@f = 1.9 GHz	3PMM
NE5500179A	移动通讯，PDC，GSM，功率放大器，功率 MOS FET	4.8	340	450-2 500	P_{out} = 30.0 dBm, G_L = 14.0 dB, Efficiency = 55%@f = 1.9 GHz	79A
NE5500234	移动通讯，PDC，GSM，功率放大器，功率 MOS FET	6	610	450-2 500	P_{out} = 32.5 dBm, G_L = 11.0 dB, Efficiency = 50%@f = 1.9 GHz	3PMM
NE5500434	移动通讯，PDC，GSM，功率放大器，功率 MOS FET	4.8	I_{Dset} = 600	450-2 500	P_{out} = 35.0 dBm, G_L = 14.0 dB, Efficiency = 60%@f = 900 MHz	3PMM
NE5500479A	移动通讯，PDC，GSM，功率放大器，功率 MOS FET	3.5	600	450-2 500	P_{out} = 31.5 dBm, G_L = 15.0 dB, Efficiency = 62%@f = 900 MHz	79A
NE5510279A	移动通讯，PDC，GSM，功率放大器，功率 MOS FET	4.8	1 000	450-2 500	P_{out} = 35.5 dBm, G_L = 16.0 dB, Efficiency = 65%@f = 900 MHz	79A
NE5511279A	多用途，中功率 Bip. Tr.	7.5	I_{Dset} = 400	460-900	P_{out} = 40.5 dBm, G_L = 18.5 dB, Efficiency = 50%@f = 460 MHz	79A
NE5520279A	移动通讯，PDC，GSM，功率放大器，功率 MOS FET	3.2	800	450-2 500	P_{out} = 32.0 dBm, G_L = 10 dB, Efficiency = 45%@f = 1.8 GHz	79A
NE5520379A	移动通讯，PDC，GSM，功率放大器，功率 MOS FET	3.2	1 000	450-2 500	P_{out} = 35.5 dBm, G_L = 16 dB, Efficiency = 68%@f = 915 MHz	79A
NE552R479A	L, S-带功率放大器，功率 MOS FET	3	230	2 450	P_{out} = 26.0 dBm, G_L = 11 dB, Efficiency = 45%@f = 2.45 GHz	79A
NE552R679A	UHF 带域功率放大器，功率 MOS FET	3	320	460	P_{out} = 28.0 dBm, G_L = 20 dB, Efficiency = 60%@f = 460 MHz	79A
NE5531079A	UHF 带域功率放大器，功率 LDMOS FET	7.5	I_{Dset} = 200	460	P_{out} = 40.0 dBm (典型值)@V_{DS} = 7.5 V, f = 460 MHz, P_{in} = 25 dBm	79A
NE55410GR	UHF 带域功率放大器，功率 LDMOS FET	28	I_{Dset} = 120	960	$P_{O\ (1\ dB)}$ = 41.5 dBm@f = 960 MHz, V_{DS} = 28 V, G_L = 30 dB@f = 900 MHz	16HTSSOP
NEM090303M-28	UHF 带域功率放大器，功率 LDMOS FET	28	I_{Dset} = 250	960	P_{out} = 46.5 dBm, G_L = 20 dB, Efficiency = 62%@f = 960 MHz	3M (T-91M)
NEM090603M-28	UHF 带域功率放大器，功率 LDMOS FET	28	I_{Dset} = 550	960	$P_{O\ (1\ dB)}$ = 48.5 dBm, G_L = 17.5 dB, Efficiency = 54%@f = 960 MHz	3M (T-91M)
NEM090853P-28	UHF 带域功率放大器，功率 LDMOS FET	28	I_{Dset} = 800	960	P_{out} = 50 dBm, G_L = 19 dB, Efficiency = 54%@f = 960 MHz	3P (T-97M)
NEM091203P-28	UHF 带域功率放大器，功率 LDMOS FET	28	I_{Dset} = 1 200	960	P_{out} = 51.3 dBm, GL = 18 dB, Efficiency = 58%@f = 960 MHz	3P (T-97M)

器件编号	应用	电气特性 (T_A = +25°C)				封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	性能	
NEM091603P-28	UHF 带域功率放大器，功率 LDMOS FET	28	I_{Dset} = 1 200	880	P_{out} = 52.3 dBm, G_L = 19.5 dB, Efficiency = 60%@f = 880 MHz	3P (T-97M)
NEM091803S-28	UHF 带域功率放大器，功率 LDMOS FET	28	I_{Dset} = 1 600	880	P_{out} = 52.5 dBm, G_L = 18.5 dB, Efficiency = 53%@f = 880 MHz	T-101M (3S)
NESG250134	VHF 带域功率 Bip. Tr，FRS，移动通讯，SiGe HBT	3.6	$I_{C (set)}$ = 30	460	$P_{O (1 dB)}$ = +29 dBm@f = 460 MHz, V_{CE} = 3.6 V, G_L = 19 dB@f = 460 MHz	3PMM
NESG260234	UHF 带域中功率 Bip. Tr.，FRS，GMRS，移动通讯，SiGe HBT	6	$I_{C (set)}$ = 30	460	$P_{O (1 dB)}$ = +30 dBm@f = 460 MHz, V_{CE} = 6 V, G_L = 22 dB@f = 460 MHz	3PMM
NESG270034	UHF 带域中功率 Bip. Tr.，FRS，GMRS，移动通讯，SiGe HBT	6	$I_{C (set)}$ = 30	460	P_{out} = 33.5 dBm, V_{CE} = 6 V, G_L = 19.5 dB@f = 460 MHz	3PMM

3.2.6 低噪声MOS FET (低频使用)

器件编号	应用	电气特性 (T_A = +25°C)				封装符号
		电压 (V)	电流 (mA)	频率 (MHz)	性能	
NE5814M14	传声器，P-ch MOS FET	2	0.08	0.001	N_V = –114 dB, G_V = –3 dB	4L2MM
NE5820M53	传声器，P-ch MOS FET	2	0.085	0.001	N_V = –114 dB, G_V = –3 dB	3TL2MM

3.3 MCM

3.3.1 推挽式放大器

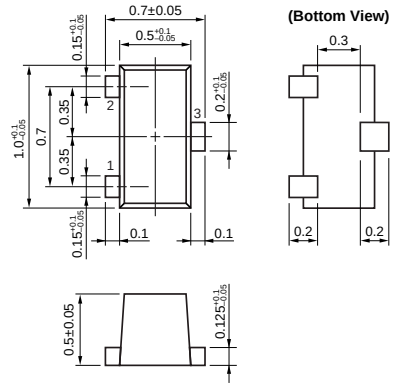
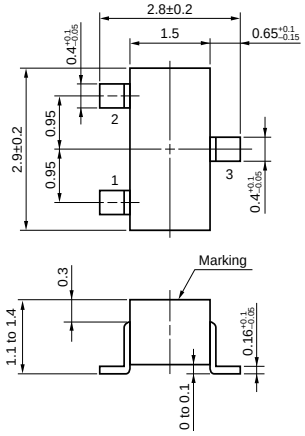
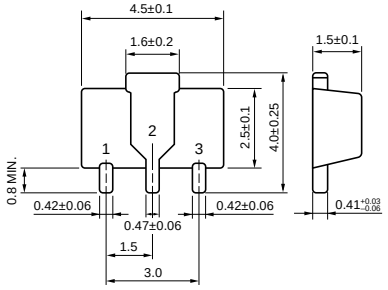
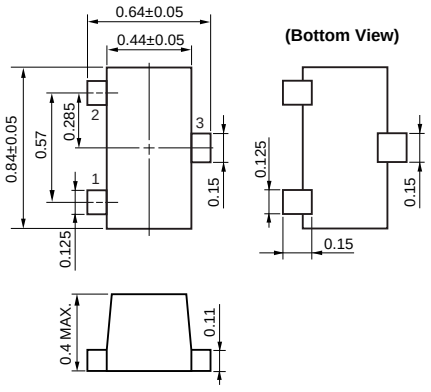
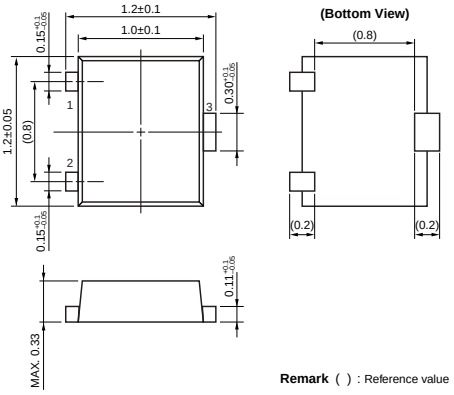
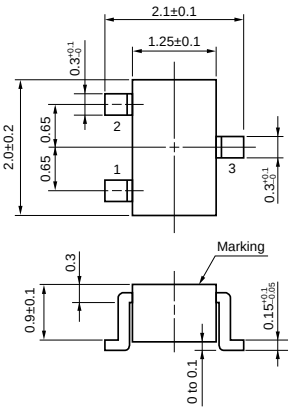
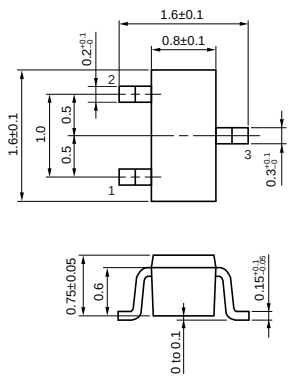
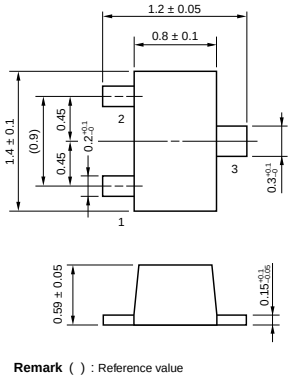
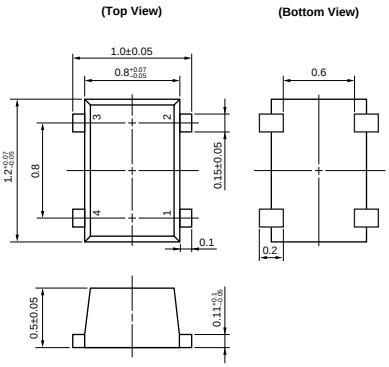
器件编号	应用	电气特性 (T_A = +25°C)					封装
		电压	电流	频率	G_L (最小值)		符号
		(V)	(mA)	(MHz)	(dB)	@f (MHz)	
MC-7831	CATV 传输系统，推挽式放大器	24	240 (最大值)	40-870	18	870	具有散热的 7 管脚特殊封装
MC-7831-HA	CATV 传输系统，推挽式放大器	24	240 (最大值)	40-1 000	18	870	具有散热的 7 管脚特殊封装
MC-7832	CATV 传输系统，推挽式放大器	24	240 (最大值)	40-870	22	870	具有散热的 7 管脚特殊封装
MC-7832-HA	CATV 传输系统，推挽式放大器	24	240 (最大值)	40-1 000	22	870	具有散热的 7 管脚特殊封装
MC-7833	CATV 传输系统，推挽式放大器	24	240 (最大值)	40-870	25	870	具有散热的 7 管脚特殊封装
MC-7836	CATV 传输系统，推挽式放大器	24	260 (最大值)	40-870	27	870	具有散热的 7 管脚特殊封装

3.3.2 功率倍增放大器

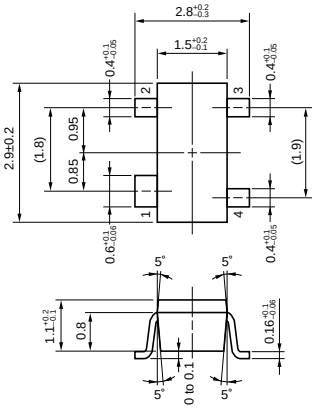
器件编号	应用	电气特性 (T_A = +25°C)					封装
		电压	电流	频率	G_L (最小值)		符号
		(V)	(mA)	(MHz)	(dB)	@f (MHz)	
MC-7881	CATV 传输系统，双功率放大器	24	360 (最大值)	40-870	18	870	具有散热的 7 管脚特殊封装
MC-7882	CATV 传输系统，双功率放大器	24	360 (最大值)	40-870	20	870	具有散热的 7 管脚特殊封装
MC-7883	CATV 传输系统，双功率放大器	24	360 (最大值)	40-870	22	870	具有散热的 7 管脚特殊封装
MC-7884	CATV 传输系统，双功率放大器	24	360 (最大值)	40-870	25	870	具有散热的 7 管脚特殊封装
MC-7891	CATV 传输系统，双功率放大器	24	385 (最大值)	40-1 000	18.5	1 000	具有散热的 7 管脚特殊封装
MC-7893	CATV 传输系统，双功率放大器	24	385 (最大值)	40-1 000	22.5	1 000	具有散热的 7 管脚特殊封装
MC-7894	CATV 传输系统，双功率放大器	24	385 (最大值)	40-1 000	24.5	1 000	具有散热的 7 管脚特殊封装
MC-7896	CATV 传输系统，双功率放大器	24	385 (最大值)	40-1 000	27	1 000	具有散热的 7 管脚特殊封装

4. 封装尺寸图

(单位 : mm) (1/10)

3L2MM 3 管脚无引脚小型模	3MM (33 PKG) 3 管脚小型模 (33 PKG)	3PMM (34 PKG) 3 管脚电源小型模 (34 PKG)
		
NE 封装代码 : M13 SOT 编号 :	NE 封装代码 : 33 SOT 编号 : SOT-23	NE 封装代码 : 34 SOT 编号 : SOT-89
3SLM2 (M33, 0804 PKG) 3 管脚超级无引脚小型模 (M33, 0804 PKG)	3TL2MM 3 管脚薄型无引脚小型模	3SMM 3 管脚超级小型模
		
NE 封装代码 : M33 SOT 编号 :	NE 封装代码 : M53 μP 封装代码 : T6J SOT 编号 :	NE 封装代码 : 30 SOT 编号 : SOT-323
3USMM (19, 1608 PKG) 3 管脚顶级小型模 (19, 1608 PKG)	F3TUSMM 扁平引线 3 管脚薄型顶级小型模	4L2MM (M14, 1208 PKG) 4 管脚无引脚小型模 (M14, 1208 PKG)
		
NE 封装代码 : 19 SC 编号 : SC-75	NE 封装代码 : M03 SOT 编号 :	NE 封装代码 : M14 SOT 编号 :

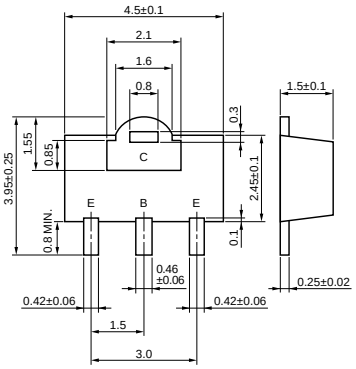
4MM (39)
4 管脚小型模 (39)



Remark ( ) : Reference value

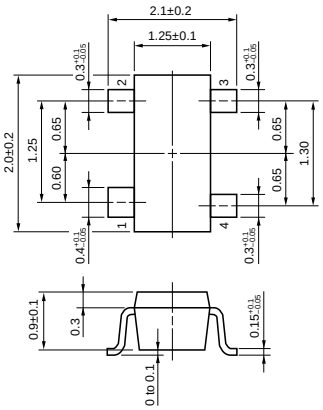
NE 封装代码 : 39
SOT 编号 : SOT-143

4PMM
4 管脚电源小型模



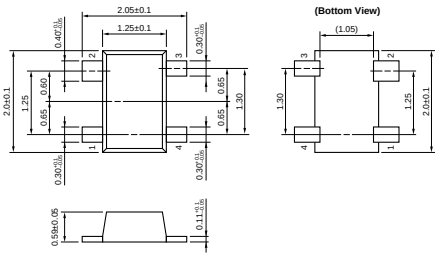
NE 封装代码 : M02
SOT 编号 : SOT-89

4SMM (18)
4 管脚超级小型模 (18)



NE 封装代码 : 18
SOT 编号 : SOT-343

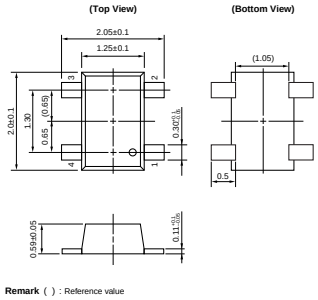
F4TSMM (M04)
扁平引线 4 管脚薄型超级小型模 (M04)



Remark ( ) : Reference value

NE 封装代码 : M04
SOT 编号 :

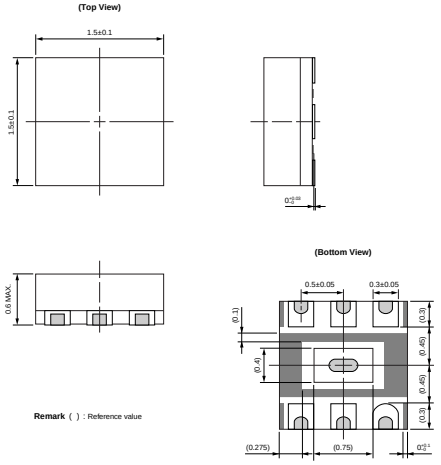
F4TSMM (M05, 2012 PKG)
扁平引线 4 管脚薄型超级小型模 (M05, 2012 PKG)



Remark ( ) : Reference value

NE 封装代码 : M05
SOT 编号 :

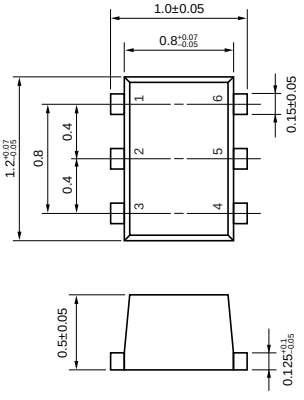
6LGA
6 管脚 LGA (CSP 型)



Remark ( ) : Reference value

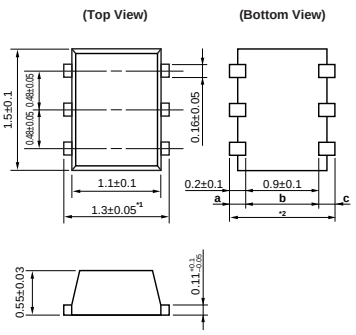
μP 封装代码 : T5B
SOT 编号 :

6L2MM (M16, 1208 PKG)
6 管脚无引脚小型模 (M16, 1208 PKG)



NE 封装代码 : M16
μP 封装代码 : TD
SOT 编号 :

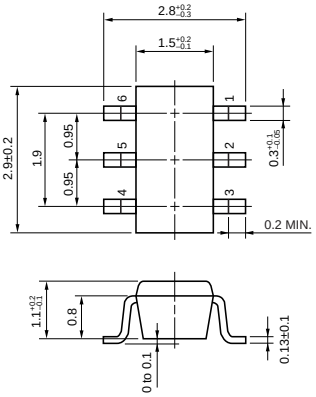
6L2MM (1511 PKG)
6 管脚无引脚小型模 (1511 PKG)



Remark Dimension*1 is bigger than dimension*2 (dimension*2 = **a** + **b** + **c**).

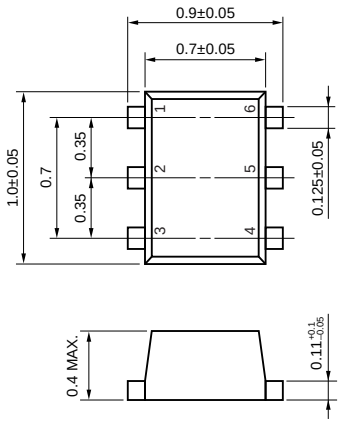
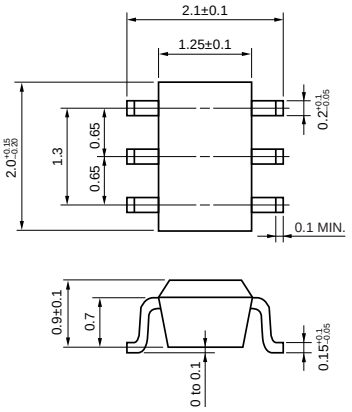
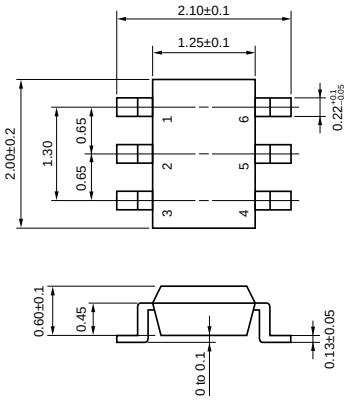
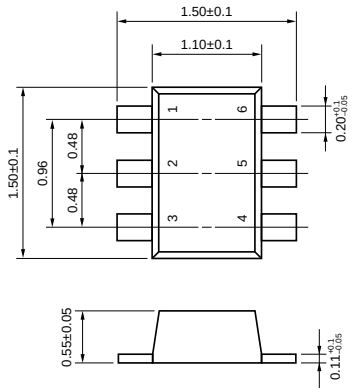
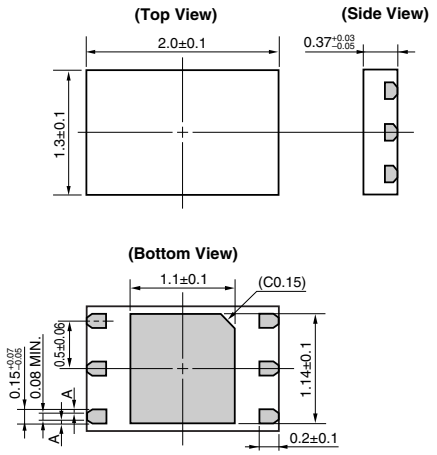
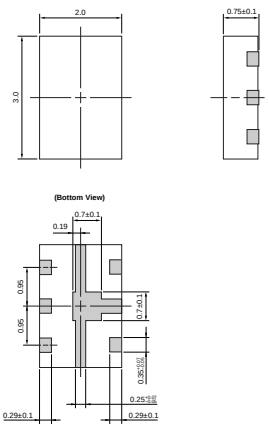
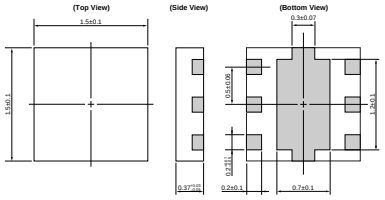
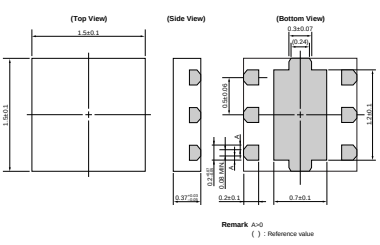
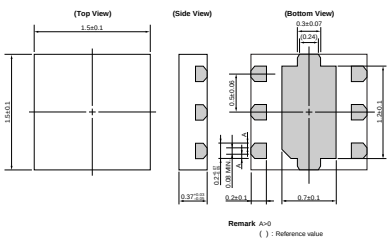
μP 封装代码 : TK
SOT 编号 :

6MM
6 管脚小型模

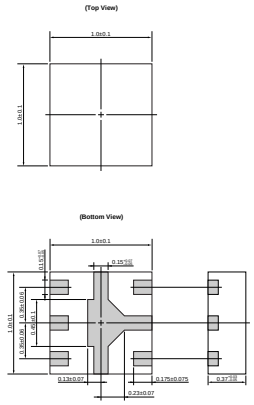
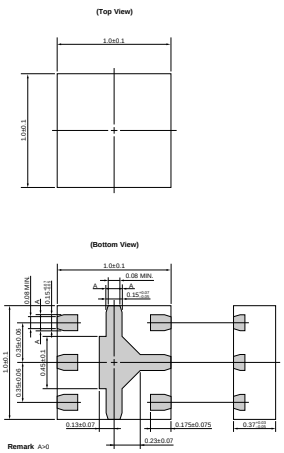
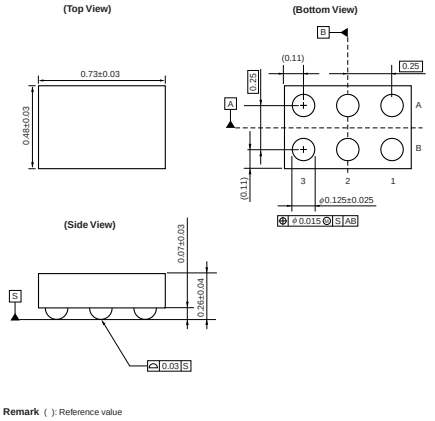
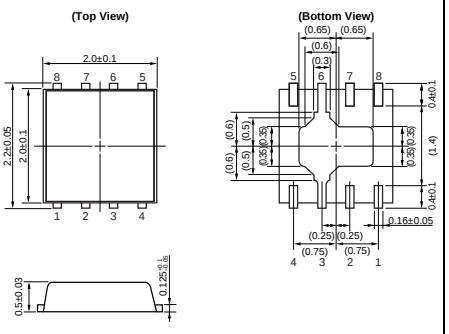
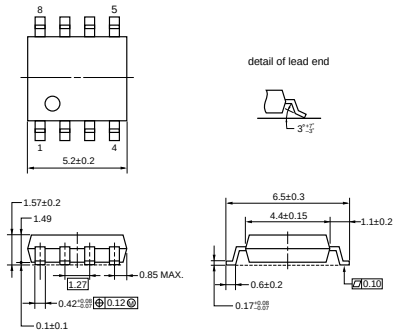
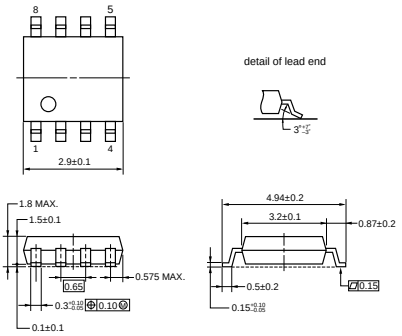
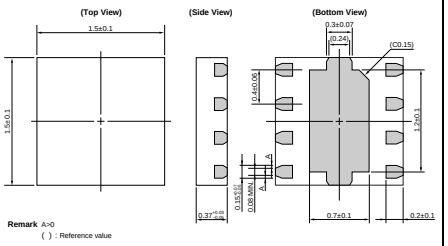
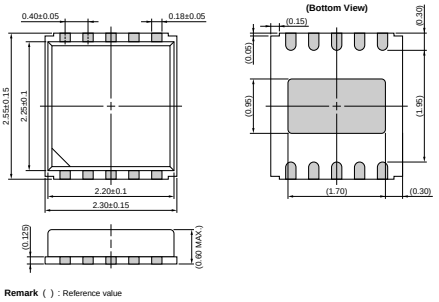
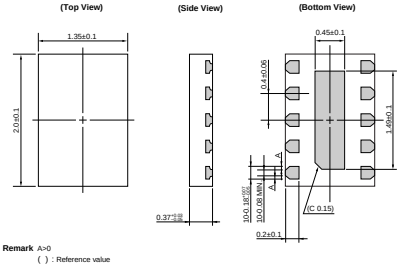


μP 封装代码 : T, TA
SOT 编号 :

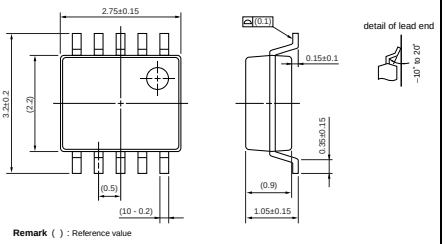
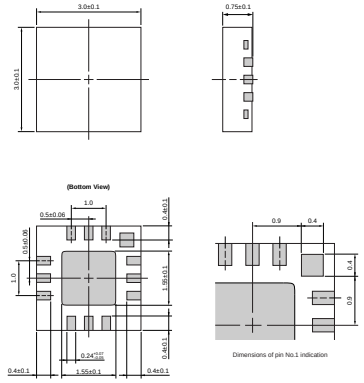
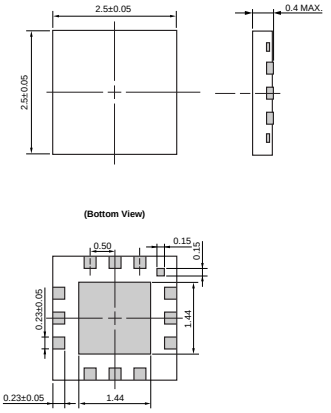
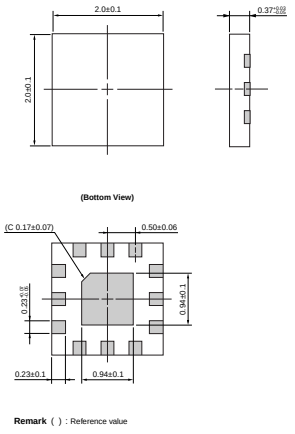
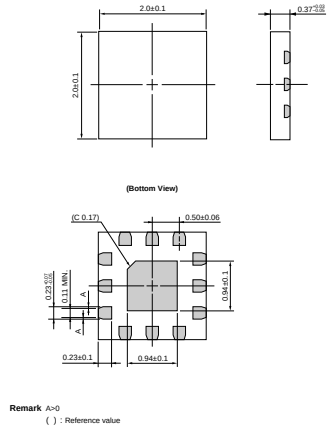
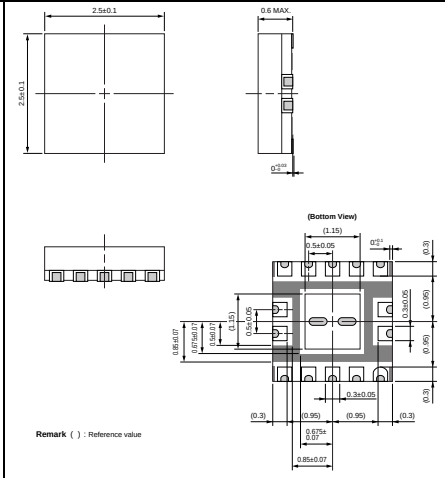
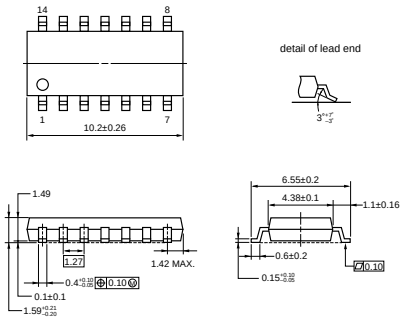
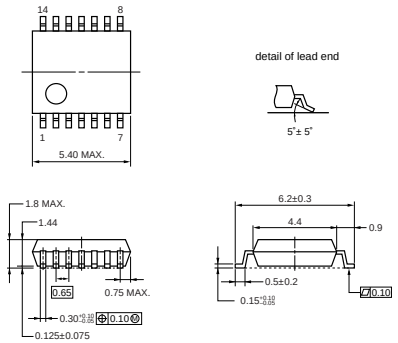
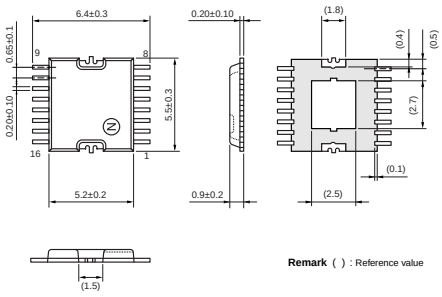
(单位 : mm) (3/10)

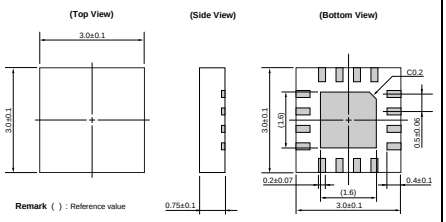
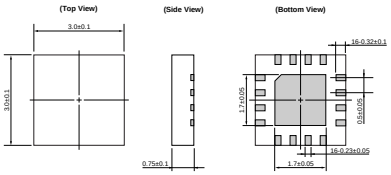
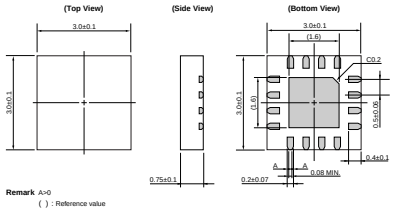
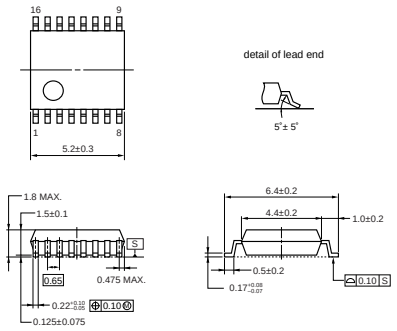
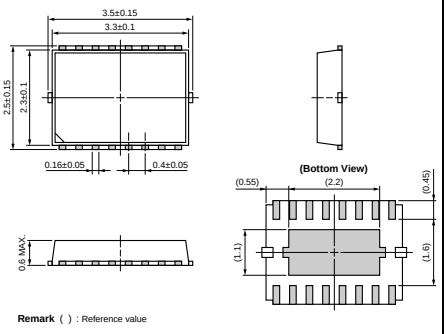
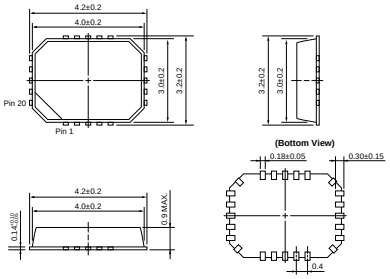
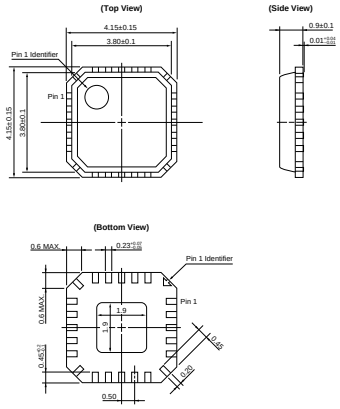
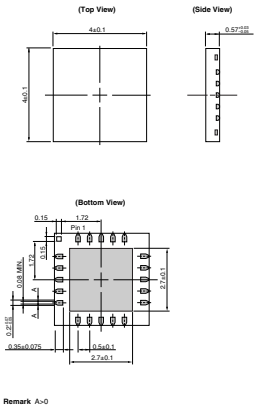
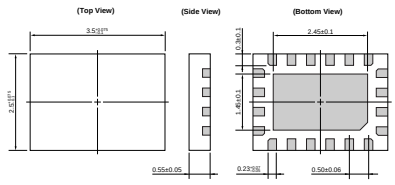
6SLM2 (1007 PKG) 6 管脚超级无引脚小型模 (1007 PKG)	6SMM (M01, TB) 6 管脚超级小型模 (M01, TB)	6TSMM 6 管脚薄型超级小型模
		
μP 封装代码 : TS SOT 编号 :	NE 封装代码 : M01 μP 封装代码 : T, TB SOT 编号 : SOT-363	μP 封装代码 : TF SOT 编号 :
F6TUSMM 扁平引线 6 管脚薄型顶级小型模	6RTSON 6 管脚塑料 RTSON	6SON 6 管脚塑料 SON
		
μP 封装代码 : TC SOT 编号 :	μP 封装代码 : T7C SOT 编号 :	μP 封装代码 : T5G SOT 编号 :
6TSON (T5N) 6 管脚塑料 TSON (T5N)	6TSON (T6N) 6 管脚塑料 TSON (T6N)	6TSON (T6X) 6 管脚塑料 TSON (T6X)
		
μP 封装代码 : T5N SOT 编号 :	μP 封装代码 : T6N SOT 编号 :	μP 封装代码 : T6X SOT 编号 :

(单位 : mm) (4/10)

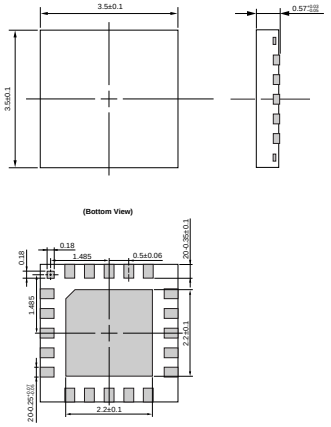
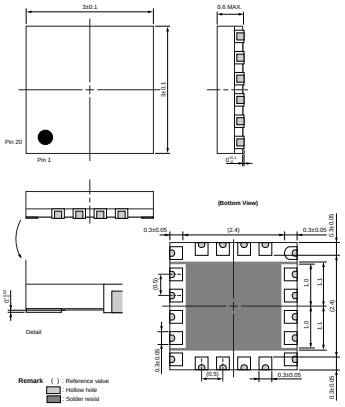
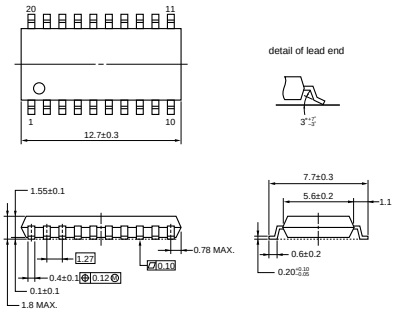
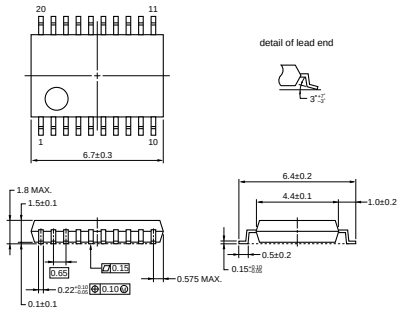
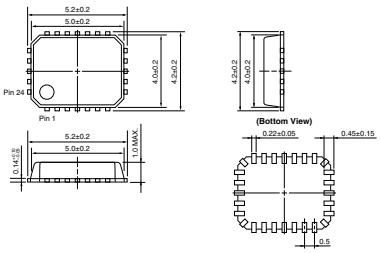
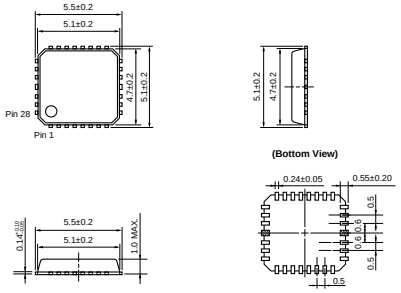
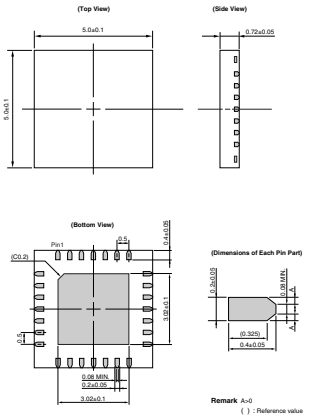
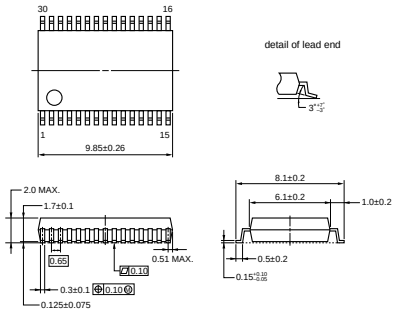
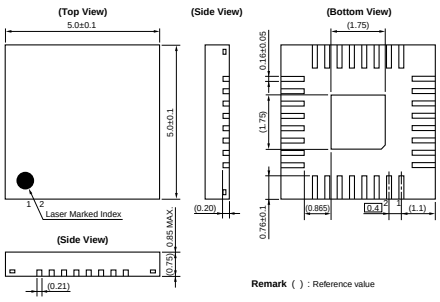
6TSSON (T5K) 6 管脚塑料 TSSON (T5K)	6TSSON (T6R) 6 管脚塑料 TSSON (T6R)	6WLBGA (T7D) 6 管 WLBGA (T7D)
		
μP 封装代码 : T5K SOT 编号 :	μP 封装代码 : T6R SOT 编号 :	μP 封装代码 : T7D SOT 编号 :
8L2MM 8 管脚无引脚小型模	8SOP 8 管脚塑料 SOP (5.72 mm (225))	8SSOP 8 管脚塑料 SSOP (4.45 mm (175))
		
μP 封装代码 : TU SOT 编号 :	μP 封装代码 : G, GR SOT 编号 :	μP 封装代码 : GV SOT 编号 :
8TSON (T6Z) 8 管脚塑料 TSON (T6Z)	10TSON (TQ) 10 管脚塑料 TSON (TQ)	10TSSON (T6Q) 10 管脚塑料 TSSON (T6Q)
		
μP 封装代码 : T6Z SOT 编号 :	μP 封装代码 : TQ SOT 编号 :	μP 封装代码 : T6Q SOT 编号 :

(单位 : mm) (5/10)

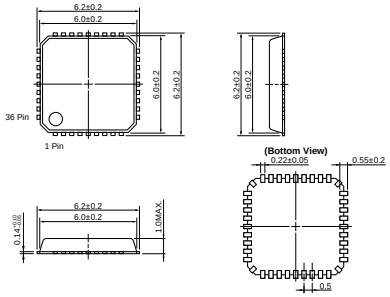
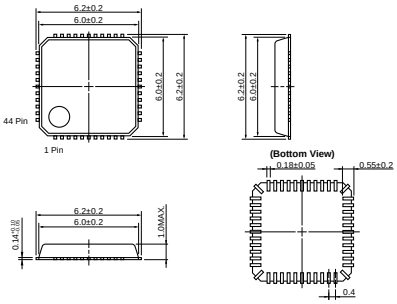
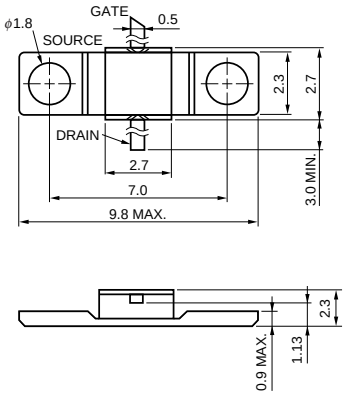
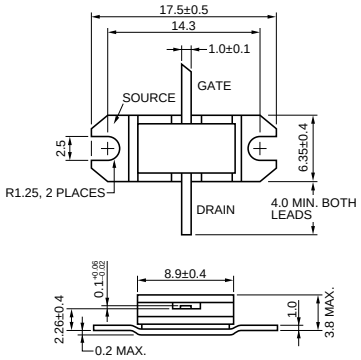
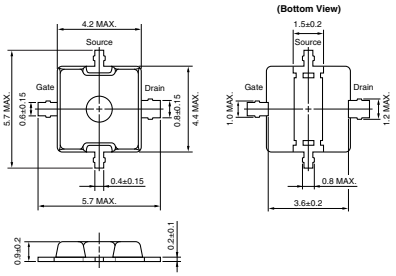
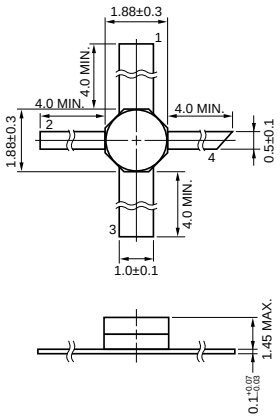
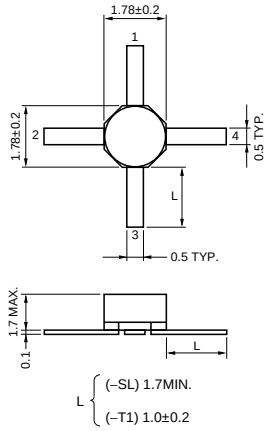
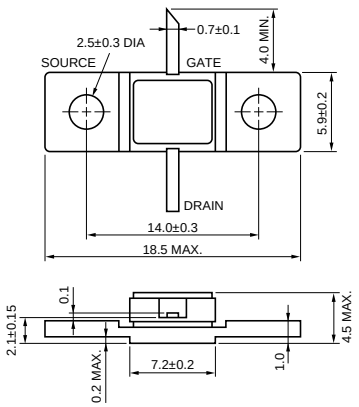
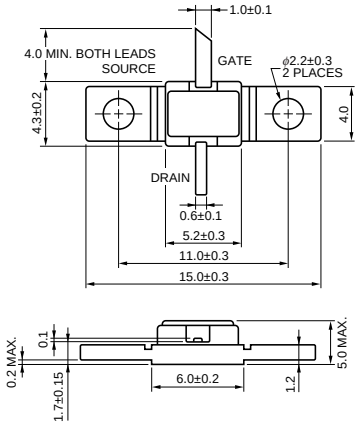
10TSSOP 10 管脚塑料 TSSOP	12QFN (T5F) 12 管脚塑料 QFN (T5F)	12TQFN 12 管脚塑料 TQFN
		
μP 封装代码 : TH SOT 编号 :	μP 封装代码 : T5F SOT 编号 :	μP 封装代码 : T5J SOT 编号 :
12TSQFN (T5L) 12 管脚塑料 TSQFN (T5L)	12TSQFN (T6M) 12 管脚塑料 TSQFN (T6M)	14LGA 14 管脚 LGA (CSP 型)
		
μP 封装代码 : T5L SOT 编号 :	μP 封装代码 : T6M SOT 编号 :	μP 封装代码 : T5D SOT 编号 :
14SOP 14 管脚塑料 SOP (5.72 mm (225))	14SSOP 14 管脚塑料 SSOP (5.72 mm (225))	16HTSSOP 16 管脚塑料 HTSSOP
		
μP 封装代码 : G, GR SOT 编号 :	μP 封装代码 : GR SOT 编号 :	μP 封装代码 : GR SOT 编号 :

16QFN (T5T) 16 管脚塑料 QFN (T5T)	16QFN (T6C) 16 管脚塑料 QFN (T6C)	16QFN (T6S) 16 管脚塑料 QFN (T6S)
		
μP 封装代码 : T5T SOT 编号 :	μP 封装代码 : T6C SOT 编号 :	μP 封装代码 : T6S SOT 编号 :
16SSOP 16 管脚塑料 SSOP (5.72 mm (225))	16TSON 16 管脚塑料 TSON	20QFN (0.4) 20 管脚塑料 QFN (0.4 mm pitch)
		
μP 封装代码 : GR SOT 编号 :	μP 封装代码 : T5A SOT 编号 :	μP 封装代码 : K SOT 编号 :
20QFN (0.5) 20 管脚塑料 QFN (0.5 mm pitch)	20QFN (0.5) (T7G) 20 管脚塑料 QFN (0.5 mm pitch) (T7G)	20RQFN (T5R) 20 管脚塑料 RQFN (T5R)
		
μP 封装代码 : K SOT 编号 :	μP 封装代码 : T7G SOT 编号 :	μP 封装代码 : T5R SOT 编号 :

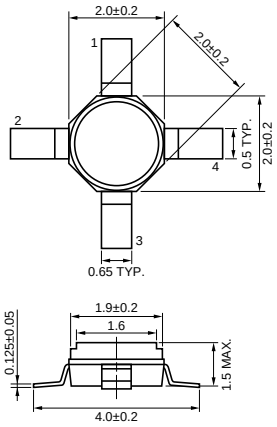
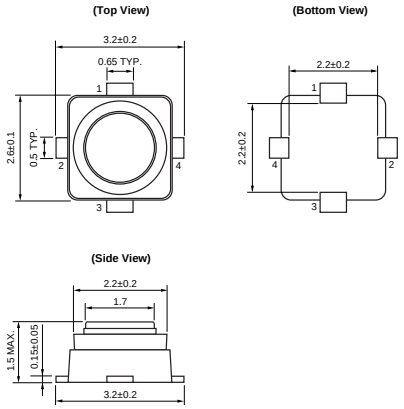
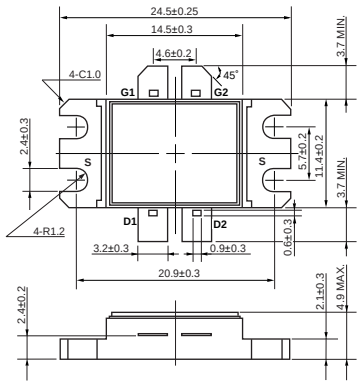
(单位 : mm) (7/10)

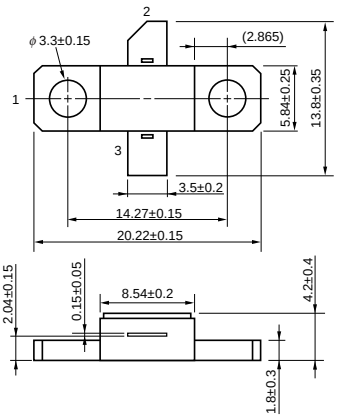
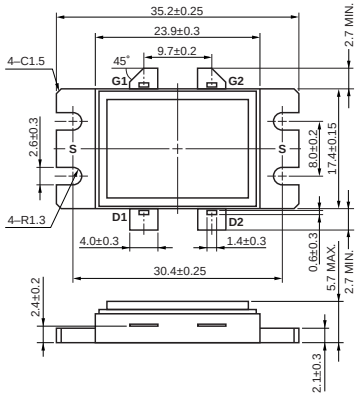
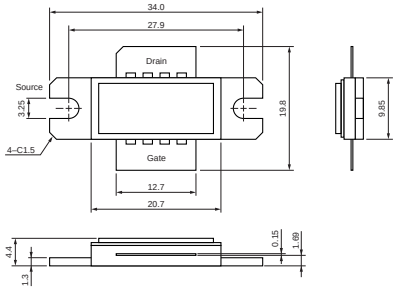
20TQFN (T6E) 20 管脚塑料 TQFN (T6E)	20LGA 20 管脚 LGA (CSP 型)	20SOP 20 管脚塑料 SOP (7.62 mm (300))
		
μP 封装代码 : T6E SOT 编号 :	μP 封装代码 : T5E SOT 编号 :	μP 封装代码 : GS SOT 编号 :
20SSOP 20 管脚塑料 SSOP (5.72 mm (225))	24QFN 24 管脚塑料 QFN	28QFN 28 管脚塑料 QFN
		
μP 封装代码 : GR SOT 编号 :	μP 封装代码 : K SOT 编号 :	μP 封装代码 : K SOT 编号 :
28QFN (T7A) 28 管脚塑料 QFN (T7A)	30SSOP 30 管脚塑料 SSOP (7.62 mm (300))	32QFN (T5S) 32 管脚塑料 QFN (T5S)
		
μP 封装代码 : T7A SOT 编号 :	μP 封装代码 : GS SOT 编号 :	μP 封装代码 : T5S SOT 编号 :

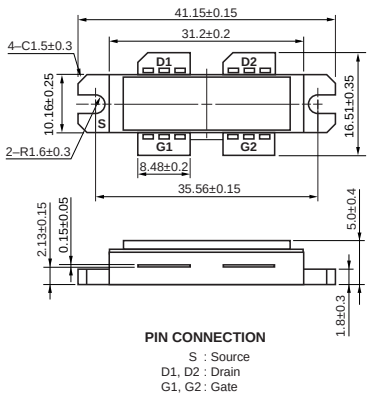
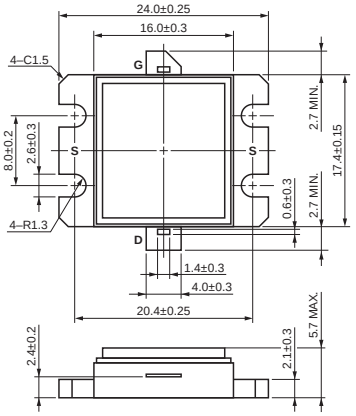
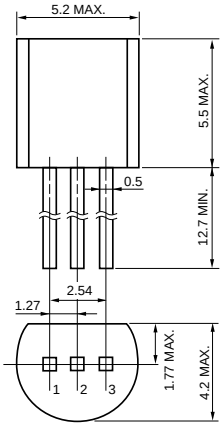
(单位 : mm) (8/10)

36QFN 36 管脚塑料 QFN	44QFN 44 管脚塑料 QFN	75 75
		
μP 封装代码 : K SOT 编号 :	μP 封装代码 : K SOT 编号 :	NE 封装代码 : 75 SOT 编号 :
77 77	79A 79A	83A, 83B 83A, 83B
		
NE 封装代码 : 77 SOT 编号 :	NE 封装代码 : 79A SOT 编号 :	NE 封装代码 : 83A/83B SOT 编号 :
84, 84A, 84C 84, 84A, 84C	95 95	96/99 96/99
		
NE 封装代码 : 84/84A/84C SOT 编号 :	NE 封装代码 : 95 SOT 编号 :	NE 封装代码 : 96/99 SOT 编号 :

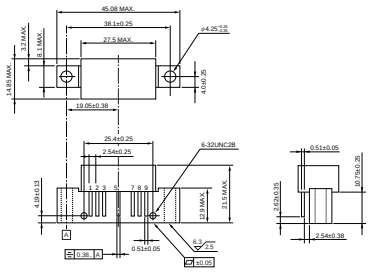
(单位 : mm) (9/10)

S01	S02, S03	T-86M
S01	S02, S03	T-86M
		
NE 封装代码 : S01 SOT 编号 :	NE 封装代码 : S02/S03 SOT 编号 :	NE 封装代码 : SOT 编号 :

T-91M (3M)	T-92M	T-97M (3P)
T-91M (3M)	T-92M	T-97M (3P)
		
NE 封装代码 : 3M SOT 编号 :	NE 封装代码 : SOT 编号 :	NE 封装代码 : 3P SOT 编号 :

T-101M (3S)	T-142M	TO-92
T-101M (3S)	T-142M	TO-92
		
NE 封装代码 : 3S SOT 编号 :	NE 封装代码 : SOT 编号 :	NE 封装代码 : 32 TO 编号 : TO-92

(单位 : mm) (10/10)

7 管脚特制 7 管脚特制，带散热片		
 NE 封装代码 : SOT 编号 :		

5. 封装，特性对照表 (分立产品)

5.1 硅双结晶体管，SiGe HBT

晶体管族表 (1/2)

fT (GHz)	IC (mA)	2SC No.					工艺
		3-管脚电源小型模 (SOT-89) 34	3-管脚小型模 (SOT-23) 33	3-管脚超级小型模 (SOT-323) 30	3-管脚顶级小型模 (1608) (SC-75) 19	3-管脚无引脚小型模 (1005) M13	
模尺寸 (mm)		4.5×2.5	2.9×1.5	2.0×1.25	1.6×0.8	1.0×0.5	
封装尺寸 (mm)		4.5×4.0	2.9×2.8	2.0×2.1	1.6×1.6	1.0×0.7	
高度 (mm)		1.5	1.3	0.9	0.75	0.5	
5.0	60			4571	5004		硅
5.3	250	4536					
5.5	30			4570	5005		
6.0	150	4703					
7.0	100*1	3357	3356	4226	5006		
9.0	65		3583	4227	5007		
10.0	35		3585	4228	5008		
	100					5801	
11.0	100			NE202930			
12.0	30				5010		
	100						
14.0	30						
14.5	50						
15.5	10				5181		
	30				5186	5618	
18.0	150						
	300						
20.0	35					5787	
25.0	12						
	35				5606		
	100						
	500						
10.0	100				NESG210719		SiGe
	400	NESG240034	NESG240033				
	500	NESG250134					
12.0	200	NESG220034	NESG220033				
14.0	600	NESG260234					
15.0	750	NESG270034					
15.5	100		NESG210833				
18.0	40				NESG204619		
25.0	35						
	100						

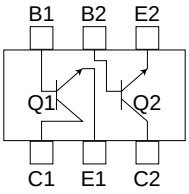
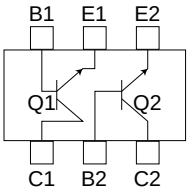
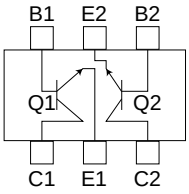
***1** 较低行的产品是特性得到改善的版本。

晶体管族表 (2/2)

fT (GHz)	IC (mA)	2SC No.								工艺
		4-管脚电源小型模 (SOT-89) M02	4-管脚小型模 (SOT-143) 39	4-管脚超级小型模 (SOT-343) 18	扁平引脚 4-管脚薄型顶级小型模 M04	扁平引脚 4-管脚薄型顶级小型模 M05	4-管脚无引脚小型模 (1208) M14	6-管脚超级小型模 (SOT-363) M01	6-管脚无引脚小型模 (1208) M16	
模尺寸 (mm)			2.9×1.5	2.0×1.25	2.0×1.25	2.0×1.25	1.2×0.8	2.0×1.25	1.2×0.8	
封装尺寸 (mm)			2.9×2.8	2.0×2.1	2.0×2.05	2.0×2.05	1.2×1.0	2.0×2.1	1.2×1.0	
高度 (mm)			1.3	0.9	0.59	0.59	0.5	0.9	0.5	
5.0	60									硅
5.3	250	5337								
5.5	30									
6.0	150	5338								
7.0	100*1	5336	4093	5011						
9.0	65		4094	5012						
10.0	35		4095	5013						
	100									
11.0	100									
12.0	30		4957	5015						
	100		5455	5752	5753					
14.0	30							5369		
14.5	50		5454	5750	5751					
15.5	10			5180						
	30			5185						
18.0	150		5288							
	300		5289							
20.0	35									
25.0	12				5507	NE661M05				
	35				5508				5704	
	100				5509					
	500				5754					
10.0	100									SiGe
	400									
	500									
12.0	200									
14.0	600									
15.0	750									
15.5	100									
18.0	40									
25.0	35					NESG2021M05 NESG2031M05 NESG3031M05	NESG3031M14 NESG3032M14 NESG3033M14 NESG4030M14		NESG2021M16 NESG2031M16	
	100					NESG2101M05			NESG2101M16	

***1** 较低行的产品是特性得到改善的产品。

5.2 双晶体管

用于寻呼机	用于 VCO	用于移动通讯	用于 VCO
			

同一晶片						不同晶片		
器件编号	2SC No. (×2)	器件编号	2SC No. (×2)	器件编号	2SC No. (×2)	器件编号	2SC No.	
							Q1	Q2
μPA800T	5008	μPA811T	5008					
μPA801T	4226	μPA810T	4226					
μPA802T	5007	μPA812T	5007					
		μPA813T	4570					
μPA804T	5004							
μPA806T	5010							
μPA807T	5181							
μPA808T	5186			μPA828TD	5186			
						μPA831TD	5006	5007
						μPA860TD	5010	5787
						μPA861TD	5186	5787
μPA873TD	5801			μPA895TD	5801	μPA862TD	5010	5801
						μPA863TD	5186	5801
						μPA869TD	NESG204619	5801

备注 模尺寸

T 型 : 2.0 × 1.25 × 0.9 (mm)

TD 型 : 1.2 × 0.8 × 0.5 (mm)

5.3 功率晶体管 (用于移动和便携式无线电台)

频率	输出功率		
	0.1 W 或更高	1 W 或更高	10 W 或更高
~1 GHz	NE552R679A NESG250134	NESG260234 NESG270034	NE5511279A NE55410GR NEM090303M-28 NEM090603M-28 NEM090853P-28 NEM091203P-28 NEM091803S-28
1 GHz~2 GHz	2SC5288 2SC5289 2SC5750 2SC5751 2SC5752 2SC5753 2SC5754 NE5500179A	NE5500134 NE5500234 NE5500434 NE5500479A NE5510279A NE5520279A NE5520379A	
2 GHz 或更高	NE552R479A NESG2101M05		

6. 标记/器件编号

6.1 小型封装高频IC上的IC标记与器件编号

(1/2)

器件编号	标记	器件编号	标记	器件编号	标记
μPB1511TB	C2Z	μPC8172TB	C3A	μPG2012TB	G3A
μPC1688G	C1C	μPC8172TK	6A	μPG2012TK	G3H
μPC2708TB	C1D	μPC8178TB	C3B	μPG2015TB	G3J
μPC2709T	C1E	μPC8178TK	6B	μPG2022T5G	G4H
μPC2709TB	C1E	μPC8179TB	C3C	μPG2022TB	G3L
μPC2710TB	C1F	μPC8179TK	6C	μPG2030TB	G3P
μPC2711TB	C1G	μPC8181TB	C3E	μPG2030TK	G3R
μPC2712TB	C1H	μPC8182TB	C3F	μPG2106TB	G1V
μPC2745TB	C1Q	μPC8187TB	C3G	μPG2110TB	G1Y
μPC2746TB	C1R	μPC8204TK	6E	μPG2126TB	G2K
μPC2747TB	C1S	μPC8211TK	6G	μPG2128TB	G2M
μPC2748TB	C1T	μPC8226TK	6H	μPG2130TB	G2P
μPC2749TB	C1U	μPC8231TK	6K	μPG2131T5D	G3V
μPC2756TB	C1W	μPC8232T5N	6L	μPG2133T5B	G2X
μPC2757TB	C1X	μPC8233TK	6P	μPG2134TB	G3B
μPC2758TB	C1Y	μPC8236T6N	6S	μPG2135TK	G3C
μPC2762TB	C1Z	μPC8240T6N	C3T	μPG2140T5D	G4A
μPC2763TB	C2A	μPD5710TK	C3L	μPG2141T5B	G4E
μPC2771TB	C2H	μPD5713TK	C3Q	μPG2151T5K	G1
μPC2776TB	C2L	μPD5729T6J	6R	μPG2151TK	G4N
μPC3215TB	C3H	μPD5738T6N	C3X	μPG2155TB	G4R
μPC3223TB	C3J	μPD5740T6N	C3U	μPG2156TB	G4V
μPC3224TB	C3K	μPD5741T6J	6T	μPG2158T5K	G2
μPC3225TB	C3M	μPD5742T6J	6V	μPG2159T5K	G3
μPC3226TB	C3N	μPD5747T6J	6X	μPG2159T6R	G7
μPC3227TB	C3P	μPG152TA	G1B	μPG2160T5K	G4
μPC3232TB	C3S	μPG153TB	G1J	μPG2162T5N	G5A
μPC3237TK	6N	μPG154TB	G1K	μPG2163T5N	G4X
μPC8106TB	C2D	μPG155TB	G1L	μPG2164T5N	G5B
μPC8109TB	C2G	μPG158TB	G1M	μPG2176T5N	G4Y
μPC8112TB	C2K	μPG168TB	G2T	μPG2179TB	G4C
μPC8119T	C2M	μPG2006TB	G2J	μPG2185T5K	G6
μPC8120T	C2N	μPG2008TB	G3D	μPG2185T6R	G8
μPC8128TB	C2P	μPG2008TK	G2R	μPG2214TB	G4J
μPC8151TB	C2U	μPG2009TB	G2U	μPG2214TK	G4K
μPC8163TB	C2Y	μPG2010TB	G2Y	μPG2250T5N	G5C

器件编号	标记	器件编号	标记	器件编号	标记
μPG2304TK	G3F	μPG2406TB	G5L	μPG2411T7C	G6G
μPG2310TK	G4W	μPG2406TK	G5K	μPG2413T6Z	G6F
μPG2314T5N	G5D	μPG2408TB	G5P	μPG2415TK	G6D
μPG2318T5N	G5G	μPG2408TK	G5X	μPG2415T6X	G6E
μPG2404T6Q	G5H	μPG2409T6X	G5R	μPG2418TB	G6H
μPG2405T6Q	G5M	μPG2409TB	G5T	μPG2419T6R	GA
μPG2406T6R	G9	μPG2411T6R	GC	μPG2422TK	G6J

备注 大体上，每个器件编号都有一个标记（但请注意，带 TK 封装代码的产品有些例外。因此请务必使用上表确认器件编号和标记)。此标记用于表示器件编号，无其他含义。它最多由三个字母组成，不含器件编号，因为小型模封装太小，无法标记三个以上字母。当器件编号具有多个尺寸封装时，大体上器件编号具有多个封装代码，但只有一个标记（带 TK 封装代码的产品有些例外)。

小型封装的封装代码 (μP 器件编号前缀)

在 1990 年之前发布的产品	在 1990 年与 1996 年 4 月之间发布的产品	在 1996 年 4 月之后发布的产品
仅限“G”	仅限“T”	小型模 : TA
		超级小型模 : TB
		扁平引线薄型顶级小型模 : TC
		薄型超级小型模 : TF
		无引脚模 (1511) : TK
		14 管脚 LGA (CSP-型) : T5D
		等

备注 2SC 和 3SK 没有封装编码。

6.2 分立器件等级、标记和规格列表 (包括：小型模、S01、75、79A、84C封装产品)

双栅 MES/MOS FET

器件编号	旧等级	新等级	标记	规格	最小值	最大值
3SK222 (NE92039)	V21	VBA	V21	I_{DSX} (mA)	0.01	3
3SK222 (NE92039)	V22	VBB	V22	I_{DSX} (mA)	1	8
3SK254 (NE93218)	–	U1E/Y1E	U1E	I_{DSX} (mA)	0.1	5
3SK255 (NE93318)	–	U1G/Y1G	U1G	I_{DSX} (mA)	0.5	7
3SK299 (NE25118)	U71	–	U71	I_{DSS} (mA)	5	15
3SK299 (NE25118)	U72	–	U72	I_{DSS} (mA)	10	25
3SK299 (NE25118)	U73	–	U73	I_{DSS} (mA)	20	35
3SK299 (NE25118)	U74	–	U74	I_{DSS} (mA)	30	40

低噪声双结晶体管 (1/4)

器件编号	旧等级	新等级	标记	规格	最小值	最大值
2SA1977 (NE97733)	–	FB	T92	h_{FE}	20	100
2SA1978 (NE97833)	–	FB	T93	h_{FE}	20	100
2SC2570A (NE02132)	E	–	E	h_{FE}	40	200
2SC3355 (NE85632)	K	–	K	h_{FE}	50	300
2SC3356 (NE85633)	R23	Q	R23	h_{FE}	50	100
2SC3356 (NE85633)	R24	R	R24	h_{FE}	80	160
2SC3356 (NE85633)	R25	S	R25	h_{FE}	125	250
2SC3357 (NE85634)	RE	–	RE	h_{FE}	125	250
2SC3357 (NE85634)	RF	–	RF	h_{FE}	80	160
2SC3357 (NE85634)	RH	–	RH	h_{FE}	50	100
2SC3582 (NE68132)	K	–	K	h_{FE}	50	250
2SC3583 (NE68133)	R33	Q	R33	h_{FE}	50	100
2SC3583 (NE68133)	R34	R	R34	h_{FE}	80	160
2SC3583 (NE68133)	R35	S	R35	h_{FE}	125	250
2SC3585 (NE68033)	R43	Q	R43	h_{FE}	50	100
2SC3585 (NE68033)	R44	R	R44	h_{FE}	80	160
2SC3585 (NE68033)	R45	S	R45	h_{FE}	125	250
2SC4093 (NE85639E)	R26	RBF	R26	h_{FE}	50	100
2SC4093 (NE85639E)	R27	RBG	R27	h_{FE}	80	160
2SC4093 (NE85639E)	R28	RBH	R28	h_{FE}	125	250
2SC4094 (NE68139E)	R36	RCF	R36	h_{FE}	50	100
2SC4094 (NE68139E)	R37	RCG	R37	h_{FE}	80	160
2SC4094 (NE68139E)	R38	RCH	R38	h_{FE}	125	250
2SC4095 (NE68039E)	R46	RDF	R46	h_{FE}	50	100
2SC4095 (NE68039E)	R47	RDG	R47	h_{FE}	80	160
2SC4095 (NE68039E)	R48	RDH	R48	h_{FE}	125	250
2SC4226 (NE85630)	R23	–	R23	h_{FE}	40	80
2SC4226 (NE85630)	R24	–	R24	h_{FE}	70	140
2SC4226 (NE85630)	R25	–	R25	h_{FE}	125	250
2SC4227 (NE68130)	R33	–	R33	h_{FE}	40	90
2SC4227 (NE68130)	R34	–	R34	h_{FE}	70	150
2SC4227 (NE68130)	R35	–	R35	h_{FE}	110	240
2SC4228 (NE68030)	R43	–	R43	h_{FE}	50	100
2SC4228 (NE68030)	R44	–	R44	h_{FE}	80	160
2SC4228 (NE68030)	R45	–	R45	h_{FE}	125	250
2SC4536 (NE46134)	QR	–	QR	h_{FE}	60	120

低噪声双结晶体管 (2/4)

器件编号	旧等级	新等级	标记	规格	最小值	最大值
2SC4536 (NE46134)	QS	–	QS	h_{FE}	100	200
2SC4570 (NE58130)	T72	–	T72	h_{FE}	40	80
2SC4570 (NE58130)	T73	–	T73	h_{FE}	60	120
2SC4570 (NE58130)	T74	–	T74	h_{FE}	100	200
2SC4571 (NE58230)	T75	–	T75	h_{FE}	40	80
2SC4571 (NE58230)	T76	–	T76	h_{FE}	60	120
2SC4571 (NE58230)	T77	–	T77	h_{FE}	100	200
2SC4703 (NE46234)	SE	–	SE	h_{FE}	125	250
2SC4703 (NE46234)	SF	–	SF	h_{FE}	80	160
2SC4703 (NE46234)	SH	–	SH	h_{FE}	50	100
2SC4957 (NE68539E)	T83	–	T83	h_{FE}	75	150
2SC5004 (NE58219)	–	FB/YFB	77	h_{FE}	60	120
2SC5005 (NE58119)	–	FB/YFB	73	h_{FE}	60	120
2SC5006 (NE85619)	–	FB/YFB	24	h_{FE}	80	160
2SC5007 (NE68119)	–	FB/YFB	34	h_{FE}	80	160
2SC5008 (NE68019)	–	FB/YFB	44	h_{FE}	80	160
2SC5010 (NE68519)	–	FB/YFB	83	h_{FE}	75	150
2SC5011 (NE85618)	–	EB/YEB	R26	h_{FE}	50	100
2SC5011 (NE85618)	–	FB/YFB	R27	h_{FE}	80	160
2SC5011 (NE85618)	–	GB/YGB	R28	h_{FE}	125	250
2SC5012 (NE68118)	–	EB/YEB	R36	h_{FE}	50	100
2SC5012 (NE68118)	–	FB/YFB	R37	h_{FE}	80	160
2SC5012 (NE68118)	–	GB/YGB	R38	h_{FE}	125	250
2SC5013 (NE68018)	–	EB/YEB	R46	h_{FE}	50	100
2SC5013 (NE68018)	–	FB/YFB	R47	h_{FE}	80	160
2SC5013 (NE68018)	–	GB/YGB	R48	h_{FE}	125	250
2SC5015 (NE68518)	–	KB/YKB	T83	h_{FE}	75	150
2SC5180 (NE68618)	–	FB/YFB	T84	h_{FE}	70	140
2SC5181 (NE68619)	–	FB/YFB	84	h_{FE}	70	140
2SC5185 (NE68718)	–	FB/YFB	T86	h_{FE}	70	140
2SC5186 (NE68719)	–	FB/YFB	86	h_{FE}	70	140
2SC5191 (NE68833)	–	FB	T88	h_{FE}	80	160
2SC5192 (NE68839)	–	FB	T88	h_{FE}	80	160
2SC5193 (NE68830)	–	FB	T88	h_{FE}	80	160
2SC5194 (NE68818)	–	FB	T88	h_{FE}	80	160
2SC5195 (NE68819)	–	FB/YFB	88	h_{FE}	80	160

低噪声双结晶体管 (3/4)

器件编号	旧等级	新等级	标记	规格	最小值	最大值
2SC5336 (NE856M02)	–	RE	RE	h_{FE}	125	250
2SC5336 (NE856M02)	–	RF	RF	h_{FE}	80	160
2SC5336 (NE856M02)	–	RH	RH	h_{FE}	50	100
2SC5337 (NE461M02)	–	QQ	QQ	h_{FE}	40	80
2SC5337 (NE461M02)	–	QR	QR	h_{FE}	60	120
2SC5337 (NE461M02)	–	QS	QS	h_{FE}	100	200
2SC5338 (NE462M02)	–	SE	SE	h_{FE}	125	250
2SC5338 (NE462M02)	–	SF	SF	h_{FE}	80	160
2SC5338 (NE462M02)	–	SH	SH	h_{FE}	50	100
2SC5369 (NE696M01)	–	FB/YFB	T95	h_{FE}	80	160
2SC5431 (NE582M03)	–	EB/YEB	TA	h_{FE}	60	90
2SC5431 (NE582M03)	–	FB/YFB	TB	h_{FE}	80	120
2SC5432 (NE856M03)	–	EB/YEB	TC	h_{FE}	80	110
2SC5432 (NE856M03)	–	FB/YFB	TD	h_{FE}	100	145
2SC5433 (NE681M03)	–	EB/YEB	TE	h_{FE}	80	110
2SC5433 (NE681M03)	–	FB/YFB	TF	h_{FE}	100	145
2SC5434 (NE680M03)	–	EB	TH	h_{FE}	80	110
2SC5434 (NE680M03)	–	FB	TJ	h_{FE}	100	145
2SC5435 (NE685M03)	–	EB/YEB	TK	h_{FE}	75	110
2SC5435 (NE685M03)	–	FB/YFB	TL	h_{FE}	95	140
2SC5436 (NE687M03)	–	EB/YEB	TN	h_{FE}	75	100
2SC5436 (NE687M03)	–	FB/YFB	TP	h_{FE}	90	130
2SC5437 (NE688M03)	–	EB	TS	h_{FE}	80	110
2SC5437 (NE688M03)	–	FB	TT	h_{FE}	100	145
2SC5454 (NE67739)	–	FB	R54	h_{FE}	75	150
2SC5455 (NE67839)	–	FB	R55	h_{FE}	75	150
2SC5507 (NE661M04)	–	FB/YFB	T78	h_{FE}	50	100
2SC5508 (NE662M04)	–	FB/YFB	T79	h_{FE}	50	100
2SC5509 (NE663M04)	–	FB/YFB	T80	h_{FE}	50	100
2SC5606 (NE66219)	–	FB/YFB	UA	h_{FE}	60	100
2SC5614 (NE856M13)	–	EB/YEB	C1	h_{FE}	80	110
2SC5614 (NE856M13)	–	FB/YFB	C2	h_{FE}	100	145
2SC5615 (NE681M13)	–	EB/YEB	D1	h_{FE}	80	110
2SC5615 (NE681M13)	–	FB	D2	h_{FE}	100	145
2SC5617 (NE685M13)	–	EB	Y1	h_{FE}	75	110
2SC5617 (NE685M13)	–	FB	Y2	h_{FE}	95	140

低噪声双结晶体管 (4/4)

器件编号	旧等级	新等级	标记	规格	最小值	最大值
2SC5618 (NE687M13)	–	EB/YEB	W1	h_{FE}	70	100
2SC5618 (NE687M13)	–	FB/YFB	W2	h_{FE}	90	130
2SC5667 (NE66719)	–	FB/YFB	UB	h_{FE}	50	100
2SC5668 (NE667M03)	–	FB/YFB	UB	h_{FE}	50	100
2SC5674 (NE667M13)	–	FB/YFB	C5	h_{FE}	50	100
2SC5676 (NE863M03)	–	FB/YFB	UC	h_{FE}	100	160
2SC5677 (NE863M13)	–	FB	D5	h_{FE}	100	160
2SC5704 (NE662M16)	–	FB/YFB	zC	h_{FE}	50	100
2SC5741	–	FB	TX	h_{FE}	100	145
2SC5745 (NE819M03)	–	FB	TY	h_{FE}	100	145
2SC5746 (NE819M13)	–	FB/YFB	Y5	h_{FE}	100	145
2SC5786 (NE894M03)	–	FB	UE	h_{FE}	50	100
2SC5787 (NE894M13)	–	FB/YFB	B7	h_{FE}	50	100
2SC5800 (NE851M03)	–	FB/YFB	80	h_{FE}	100	145
2SC5801 (NE851M13)	–	FB/YFB	E7	h_{FE}	100	145
NE202930	–	YFB	R7D	h_{FE}	85	205
NE661M05	–	FB/YFB	T81	h_{FE}	50	100
NE662M03	–	FB/YFB	UF	h_{FE}	60	100
NE685M33	–	FB	Y2	h_{FE}	75	150
NE687M33	–	FB	W2	h_{FE}	70	140
NE851M33	–	FB	E7	h_{FE}	100	145

SiGe HBT

器件编号	旧等级	新等级	标记	规格	最小值	最大值
2SC5761 (NESG2030M04)	–	FB/YFB	T16	h_{FE}	200	400
2SC5843 (NESG2030M16)	–	FB/YFB	zD	h_{FE}	200	400
NESG2021M05	–	FB/YFB	T1G	h_{FE}	130	260
NESG2021M16	–	FB/YFB	zE	h_{FE}	130	260
NESG2031M05	–	FB/YFB	T1H	h_{FE}	130	260
NESG2031M16	–	FB/YFB	zF	h_{FE}	130	260
NESG204619	–	FB	T7	h_{FE}	140	220
NESG2046M33	–	FB/YFB	T7	h_{FE}	140	220
NESG2101M05	–	FB	T1J	h_{FE}	130	260
NESG2101M16	–	FB	zH	h_{FE}	130	260
NESG210719	–	FB	D7	h_{FE}	140	220
NESG2107M33	–	FB	D7	h_{FE}	140	220
NESG250134	–	FB	SN	h_{FE}	80	180
NESG260234	–	FB	SP	h_{FE}	80	180
NESG270034	–	FB	SQ	h_{FE}	80	180
NESG3031M05	–	FB/YFB	T1K	h_{FE}	220	380
NESG3031M14	–	FB/YFB	zJ	h_{FE}	220	380
NESG3032M14	–	FB/YFB	zN	h_{FE}	220	380
NESG3033M14	–	FB/YFB	zL	h_{FE}	220	380
NESG340033	–	YFB	R7E	h_{FE}	200	400
NESG4030M14	–	FB/YFB	zK	h_{FE}	270	540

双晶体管 (1/2)

器件编号	旧等级	新等级	标记	规格	最小值	最大值
μPA800T	–	KB/YKB	RL	h_{FE}	80	200
μPA801T	–	FB/YFB	R24	h_{FE}	70	140
μPA801T	–	GB/YGB	R25	h_{FE}	125	250
μPA802T	–	FB/YFB	R34	h_{FE}	70	150
μPA802T	–	GB/YGB	R35	h_{FE}	110	240
μPA803T	–	FB	T73	h_{FE}	60	120
μPA803T	–	GB	T74	h_{FE}	100	200
μPA804T	–	FB/YFB	T76	h_{FE}	60	120
μPA804T	–	GB/YGB	T77	h_{FE}	100	200
μPA805T	–	KB	T82	h_{FE}	75	150
μPA806T	–	KB/YKB	T83	h_{FE}	75	150
μPA807T	–	KB/YKB	T84	h_{FE}	70	140
μPA808T	–	KB/YKB	T86	h_{FE}	70	140
μPA809T	–	KB	T88	h_{FE}	80	160
μPA810T	–	FB/YFB	24R	h_{FE}	70	140
μPA810T	–	GB/YGB	25R	h_{FE}	125	250
μPA811T	–	FB/YFB	44R	h_{FE}	80	160
μPA811T	–	GB/YGB	45R	h_{FE}	125	250
μPA812T	–	FB/YFB	34R	h_{FE}	70	150
μPA812T	–	GB/YGB	35R	h_{FE}	110	240
μPA813T	–	FB/YFB	73T	h_{FE}	60	120
μPA813T	–	GB/YGB	74T	h_{FE}	100	200
μPA814T	–	KB/YKB	88T	h_{FE}	80	160
μPA828TD	–	FB/YFB	kL	h_{FE}	70	140
μPA831TD	–	FB/YFB	nC	h_{FE}	Q1:70, Q2:70	Q1:140, Q2:150
μPA841TD	–	FB/YFB	nQ	h_{FE}	Q1:75, Q2:100	Q1:150, Q2:160
μPA850TD	–	FB	vF	h_{FE}	Q1:75, Q2:100	Q1:150, Q2:145
μPA851TD	–	FB/YFB	vH	h_{FE}	Q1:70, Q2:100	Q1:140, Q2:145
μPA854TD	–	FB/YFB	vL	h_{FE}	Q1:75, Q2:100	Q1:150, Q2:145
μPA855TD	–	FB/YFB	vN	h_{FE}	Q1:70, Q2:100	Q1:140, Q2:145
μPA859TD	–	FB/YFB	vT	h_{FE}	Q1:70, Q2:100	Q1:140, Q2:160
μPA860TD	–	FB/YFB	vV	h_{FE}	Q1:75, Q2:50	Q1:150, Q2:100
μPA861TD	–	FB/YFB	vX	h_{FE}	Q1:70, Q2:50	Q1:140, Q2:100
μPA862TD	–	FB/YFB	vY	h_{FE}	Q1:75, Q2:100	Q1:150, Q2:145
μPA862TS	–	FB	vY	h_{FE}	Q1:75, Q2:100	Q1:150, Q2:145
μPA863TD	–	FB/YFB	xC	h_{FE}	Q1:70, Q2:100	Q1:140, Q2:145

双晶体管 (2/2)

器件编号	旧等级	新等级	标记	规格	最小值	最大值
μPA863TS	–	FB	xC	h_{FE}	Q1:70, Q2:100	Q1:140, Q2:145
μPA867TS	–	FB	xF	h_{FE}	Q1:75, Q2:140	Q1:150, Q2:220
μPA868TS	–	FB	xH	h_{FE}	Q1:70, Q2:140	Q1:140, Q2:220
μPA869TD	–	FB/YFB	xJ	h_{FE}	Q1:140, Q2:100	Q1:220, Q2:145
μPA869TS	–	FB	xJ	h_{FE}	Q1:140, Q2:100	Q1:220, Q2:145
μPA872TD	–	FB	cD	h_{FE}	100	160
μPA873TC	–	FB/YFB	3F	h_{FE}	100	145
μPA873TD	–	FB/YFB	cP	h_{FE}	100	145
μPA873TS	–	FB	cP	h_{FE}	100	145
μPA880TS	–	FB	xK	h_{FE}	140	220
μPA891TC	–	FB/YFB	4B	h_{FE}	100	160
μPA891TD	–	FB/YFB	kH	h_{FE}	100	160
μPA892TC	–	FB	4C	h_{FE}	50	100
μPA892TD	–	FB	kN	h_{FE}	50	100
μPA895T5M	–	FB	kP	h_{FE}	100	145
μPA895TD	–	FB/YFB	kP	h_{FE}	100	145
μPA895TS	–	FB	kP	h_{FE}	100	145

低噪声 GaAs FET，HBT，HJ-FET

器件编号	旧等级	新等级	标记	规格	最小值	最大值
NE3210S01	–	–	K	–	–	–
NE34018	–	63	V63	I_{DSS} (mA)	30	65
NE34018	–	64	V64	I_{DSS} (mA)	60	120
NE350184C	–	–	A	I_{DSS} (mA)	15	70
NE3503M04	–	–	V75	–	–	–
NE3505M04	–	–	V76	–	–	–
NE3508M04	–	–	V79	I_{DSS} (mA)	60	120
NE3509M04	–	–	V80	I_{DSS} (mA)	30	60
NE3509M14	–	–	zR	I_{DSS} (mA)	30	60
NE3510M04	–	–	V81	–	–	–
NE3512S02	–	–	C	–	–	–
NE3514S02	–	–	D	–	–	–
NE3515S02	–	–	G	–	–	–
NE3517S03	–	–	E	–	–	–
NE3519M04	–	–	V85	I_{DSS} (mA)	30	60
NE38018	–	67	V67	I_{DSS} (mA)	40	90
NE38018	–	68	V68	I_{DSS} (mA)	70	170
NE4210S01	–	–	L	–	–	–
NE4211M01	–	–	V74	–	–	–
NE429M01	–	K	V72	I_{DSS} (mA)	20	90
NE52418	–	–	V45	–	–	–
NE722S01	–	–	P	–	–	–

功率晶体管，功率 FET

器件编号	旧等级	新等级	标记	规格	最小值	最大值
2SC5288 (NE68939)	–	KB	T89	h_{FE}	60	–
2SC5289 (NE69039)	–	KB	T90	h_{FE}	60	–
2SC5750 (NE67718)	–	FB/YFB	R54	h_{FE}	75	150
2SC5751 (NE677M04)	–	FB/YFB	R54	h_{FE}	75	150
2SC5752 (NE67818)	–	FB/YFB	R55	h_{FE}	75	150
2SC5753 (NE678M04)	–	FB/YFB	R55	h_{FE}	75	150
2SC5754 (NE664M04)	–	FB/YFB	R57	h_{FE}	40	100
NE5500134	–	–	V1	–	–	–
NE5500179A	–	–	R1	–	–	–
NE5500234	–	–	V2	–	–	–
NE5500434	–	–	V4	–	–	–
NE5500479A	–	–	R4	–	–	–
NE5510279A	–	–	W2	–	–	–
NE5511279A	–	–	W3	–	–	–
NE5520279A	–	–	A2	–	–	–
NE5520379A	–	–	A3	–	–	–
NE552R479A	–	–	AW	–	–	–
NE552R679A	–	–	AU	–	–	–
NE6500179A	–	–	TC	–	–	–
NE6500379A	–	–	TE	–	–	–
NE650R279A	–	–	TA	–	–	–
NE650R479A	–	–	TB	–	–	–
NE6510179A	–	–	TI	–	–	–
NE6510379A	–	–	TJ	–	–	–
NE651R479A	–	–	TH	–	–	–
NE960R275	–	–	R2	–	–	–
NE960R575	–	–	R5	–	–	–

低噪声 MOS FET (低频使用)

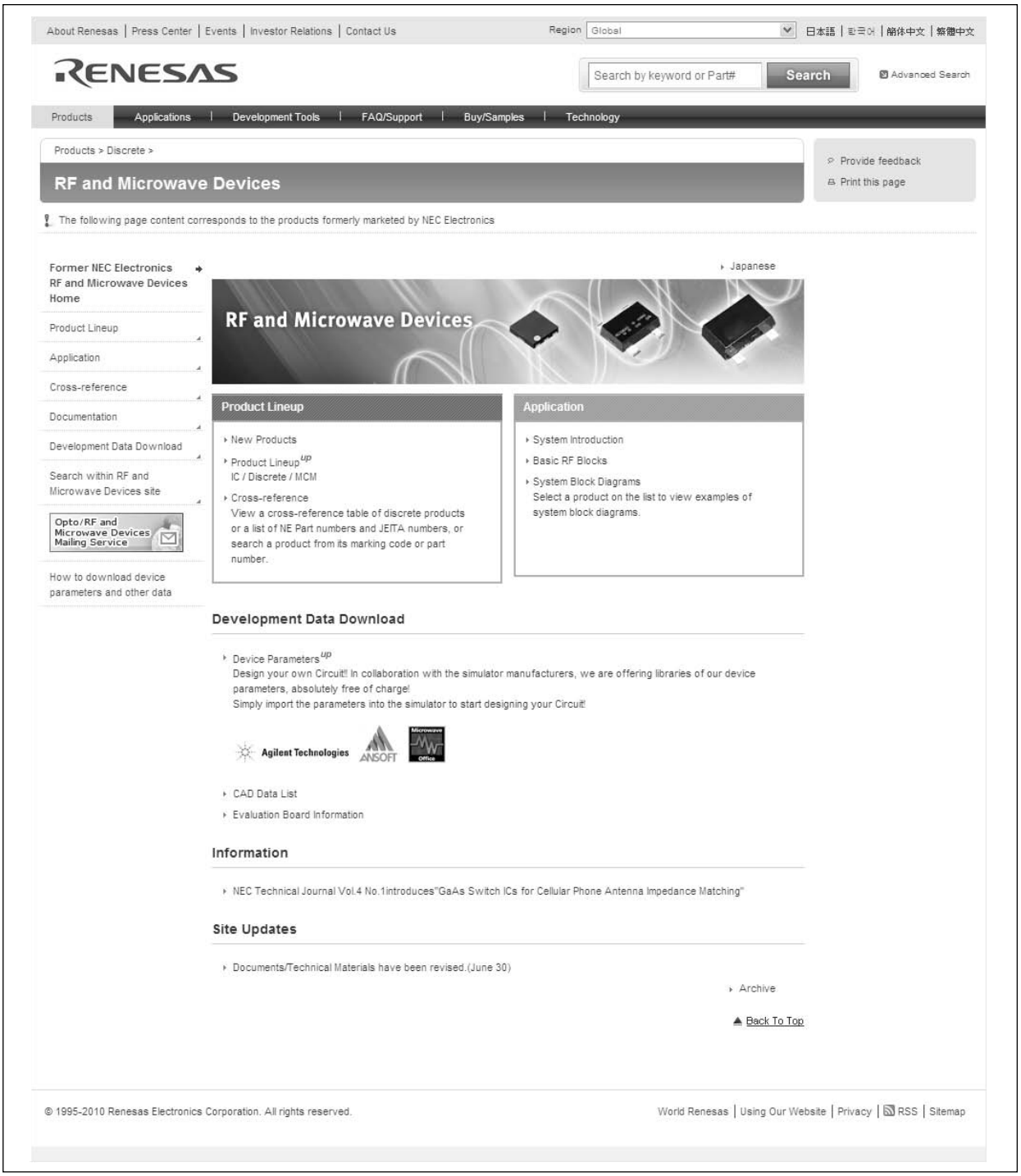
器件编号	旧等级	新等级	标记	规格	最小值	最大值
NE5814M14	–	–	zQ	–	–	–
NE5820M53	–	–	B8	–	–	–

7. 网站信息

射频和微波器件主页有很多可供查看或下载的文档。请访问我们的网站，网址如下：

射频和微波器件

http://www2.renesas.com/microwave/en/



Bluetooth 是属 Bluetooth SIG, Inc., (美国)的注册商标。
TransferJet 是索尼(Sony)公司的商标。
ZigBee 是 Koninklijke Philips Electronics N.V.的商标。

Renesas Electronics Corporation

Notes:
1. All information included in this document is current as of the date this document is issued. Such information, however, is subject to change without any prior notice. Before purchasing or using any Renesas Electronics products listed herein, please confirm the latest product information with a Renesas Electronics sales office. Also, please pay regular and careful attention to additional and different information to be disclosed by Renesas Electronics such as that disclosed through our website.
2. Renesas Electronics does not assume any liability for infringement of patents, copyrights, or other intellectual property rights of third parties by or arising from the use of Renesas Electronics products or technical information described in this document. No license, express, implied or otherwise, is granted hereby under any patents, copyrights or other intellectual property rights of Renesas Electronics or others.
3. You should not alter, modify, copy, or otherwise misappropriate any Renesas Electronics product, whether in whole or in part.
4. Descriptions of circuits, software and other related information in this document are provided only to illustrate the operation of semiconductor products and application examples. You are fully responsible for the incorporation of these circuits, software, and information in the design of your equipment. Renesas Electronics assumes no responsibility for any losses incurred by you or third parties arising from the use of these circuits, software, or information.
5. When exporting the products or technology described in this document, you should comply with the applicable export control laws and regulations and follow the procedures required by such laws and regulations. You should not use Renesas Electronics products or the technology described in this document for any purpose relating to military applications or use by the military, including but not limited to the development of weapons of mass destruction. Renesas Electronics products and technology may not be used for or incorporated into any products or systems whose manufacture, use, or sale is prohibited under any applicable domestic or foreign laws or regulations.
6. Renesas Electronics has used reasonable care in preparing the information included in this document, but Renesas Electronics does not warrant that such information is error free. Renesas Electronics assumes no liability whatsoever for any damages incurred by you resulting from errors in or omissions from the information included herein.
7. Renesas Electronics products are classified according to the following three quality grades: "Standard", "High Quality", and "Specific". The recommended applications for each Renesas Electronics product depends on the product's quality grade, as indicated below. You must check the quality grade of each Renesas Electronics product before using it in a particular application. You may not use any Renesas Electronics product for any application categorized as "Specific" without the prior written consent of Renesas Electronics. Further, you may not use any Renesas Electronics product for any application for which it is not intended without the prior written consent of Renesas Electronics. Renesas Electronics shall not be in any way liable for any damages or losses incurred by you or third parties arising from the use of any Renesas Electronics product for an application categorized as "Specific" or for which the product is not intended where you have failed to obtain the prior written consent of Renesas Electronics. The quality grade of each Renesas Electronics product is "Standard" unless otherwise expressly specified in a Renesas Electronics data sheets or data books, etc.
   "Standard": Computers; office equipment; communications equipment; test and measurement equipment; audio and visual equipment; home electronic appliances; machine tools; personal electronic equipment; and industrial robots.
   "High Quality": Transportation equipment (automobiles, trains, ships, etc.); traffic control systems; anti-disaster systems; anti-crime systems; safety equipment; and medical equipment not specifically designed for life support.
   "Specific": Aircraft; aerospace equipment; submersible repeaters; nuclear reactor control systems; medical equipment or systems for life support (e.g. artificial life support devices or systems), surgical implantations, or healthcare intervention (e.g. excision, etc.), and any other applications or purposes that pose a direct threat to human life.
8. You should use the Renesas Electronics products described in this document within the range specified by Renesas Electronics, especially with respect to the maximum rating, operating supply voltage range, movement power voltage range, heat radiation characteristics, installation and other product characteristics. Renesas Electronics shall have no liability for malfunctions or damages arising out of the use of Renesas Electronics products beyond such specified ranges.
9. Although Renesas Electronics endeavors to improve the quality and reliability of its products, semiconductor products have specific characteristics such as the occurrence of failure at a certain rate and malfunctions under certain use conditions. Further, Renesas Electronics products are not subject to radiation resistance design. Please be sure to implement safety measures to guard them against the possibility of physical injury, and injury or damage caused by fire in the event of the failure of a Renesas Electronics product, such as safety design for hardware and software including but not limited to redundancy, fire control and malfunction prevention, appropriate treatment for aging degradation or any other appropriate measures. Because the evaluation of microcomputer software alone is very difficult, please evaluate the safety of the final products or system manufactured by you.
10. Please contact a Renesas Electronics sales office for details as to environmental matters such as the environmental compatibility of each Renesas Electronics product. Please use Renesas Electronics products in compliance with all applicable laws and regulations that regulate the inclusion or use of controlled substances, including without limitation, the EU RoHS Directive. Renesas Electronics assumes no liability for damages or losses occurring as a result of your noncompliance with applicable laws and regulations.
11. This document may not be reproduced or duplicated, in any form, in whole or in part, without prior written consent of Renesas Electronics.
12. Please contact a Renesas Electronics sales office if you have any questions regarding the information contained in this document or Renesas Electronics products, or if you have any other inquiries.

(Note 1) "Renesas Electronics" as used in this document means Renesas Electronics Corporation and also includes its majority-owned subsidiaries.
(Note 2) "Renesas Electronics product(s)" means any product developed or manufactured by or for Renesas Electronics.

RENESAS

SALES OFFICES http://www.renesas.com

Refer to "http://www.renesas.com/" for the latest and detailed information.

Renesas Electronics America Inc.
2880 Scott Boulevard Santa Clara, CA 95050-2554, U.S.A.
Tel: +1-408-588-6000, Fax: +1-408-588-6130

Renesas Electronics Canada Limited
1101 Nicholson Road, Newmarket, Ontario L3Y 9C3, Canada
Tel: +1-905-898-5441, Fax: +1-905-898-3220

Renesas Electronics Europe Limited
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K
Tel: +44-1628-585-100, Fax: +44-1628-585-900

Renesas Electronics Europe GmbH
Arcadiastrasse 10, 40472 Düsseldorf, Germany
Tel: +49-211-65030, Fax: +49-211-6503-1327

Renesas Electronics (China) Co., Ltd.
7th Floor, Quantum Plaza, No.27 ZhiChunLu Haidian District, Beijing 100083, P.R.China
Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

Renesas Electronics (Shanghai) Co., Ltd.
Unit 204, 205, AZIA Center, No.1233 Lujiazui Ring Rd., Pudong District, Shanghai 200120, China
Tel: +86-21-5877-1818, Fax: +86-21-6887-7858 / -7898

Renesas Electronics Hong Kong Limited
Unit 1601-1613, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong
Tel: +852-2886-9318, Fax: +852 2886-9022/9044

Renesas Electronics Taiwan Co., Ltd.
7F, No. 363 Fu Shing North Road Taipei, Taiwan
Tel: +886-2-8175-9600, Fax: +886 2-8175-9670

Renesas Electronics Singapore Pte. Ltd.
1 harbourFront Avenue, #06-10, keppel Bay Tower, Singapore 098632
Tel: +65-6213-0200, Fax: +65-6278-8001

Renesas Electronics Malaysia Sdn.Bhd.
Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No. 18, Jln Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: +60-3-7955-9390, Fax: +60-3-7955-9510

Renesas Electronics Korea Co., Ltd.
11F., Samik Lavied' or Bldg., 720-2 Yeoksam-Dong, Kangnam-Ku, Seoul 135-080, Korea
Tel: +82-2-558-3737, Fax: +82-2-558-5141