To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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RENESAS

TRANSISTOR ARRAY

Phase-out/Discontinued

μPA56C

SEGMENT DRIVER

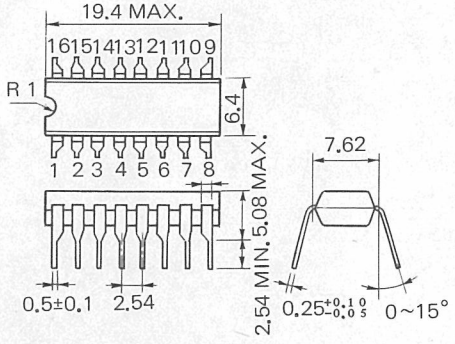
NPN SILICON EPITAXIAL TRANSISTOR ARRAY

DESCRIPTION

The μPA56C is a monolithic array of seven transistors.
This device is especially suited for driving common cathode seven segment LED, relays, and lamps.

PACKAGE DIMENSIONS

in millimeters



FEATURES

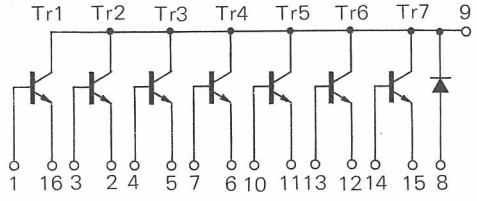
- High Voltage Ratings V_{CBO}=60 V
- Package is 16 Pin PLASTIC DIP.

ABSOLUTE MAXIMUM RATINGS

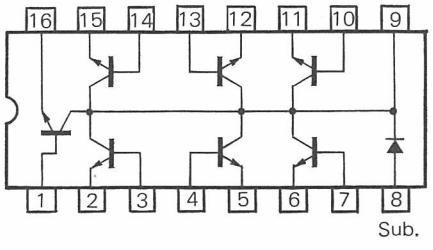
Maximum Voltages and Currents (T_a = 25 °C)

Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	40	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	$I_{C(DC)}$	100	mA/unit
Continuous Collector Current	$I_{C(DC)}$	550	mA/package
Maximum Power Dissipation			
Total Power Dissipation	P_d	550	mW/package
Maximum Temperature			
Operating Temperature	T_{opt}	−25 to +75	°C
Storage Temperature	T_{stg}	−40 to +125	°C

EQUIVALENT CIRCUIT



CONNECTION DIAGRAM (Top View)



Note: Sub. —terminal is to be connected to the lowest voltage level in the application.

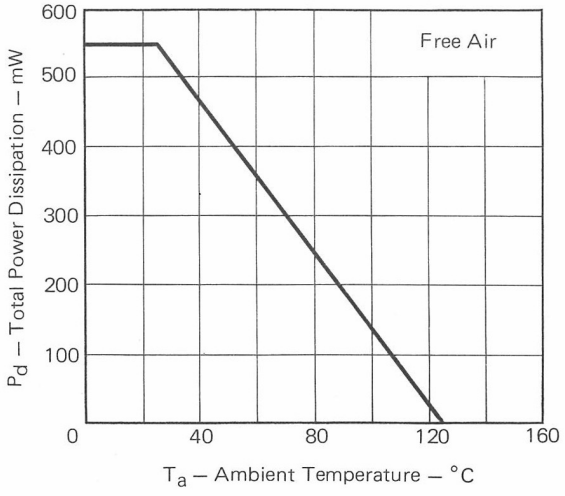
ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}		0.001	0.1	μA	V_{CB}=40 V, I_E=0
Emitter Cutoff Current	I_{EBO}		0.001	0.1	μA	V_{EB}=3.0 V, I_C=0
DC Current Gain	h_{FE1}	50	250			V_{CE}=1.0 V, I_C=10 mA
DC Current Gain	h_{FE2}	40	200			V_{CE}=1.0 V, I_C=50 mA
Collector Saturation Voltage	$V_{CE(sat)1}$		0.07	0.3	V	I_C=10 mA, I_B=1.0 mA
Collector Saturation Voltage	$V_{CE(sat)2}$		0.2	0.6	V	I_C=50 mA, I_B=5.0 mA
Base Saturation Voltage	$V_{BE(sat)}$		0.86	1.0	V	I_C=50 mA, I_B=5.0 mA
Gain Bandwidth Product	f_T		320		MHz	V_{CE}=10 V, I_E=−10 mA
Output Capacitance	C_{ob}		4.0		pF	V_{CB}=10 V, I_E=0, f=1.0 MHz
Turn On Time	t_{on}		40		ns	See Switching Time Test Circuit
Storage Time	t_{stg}		200		ns	
Turn Off Time	t_{off}		230		ns	

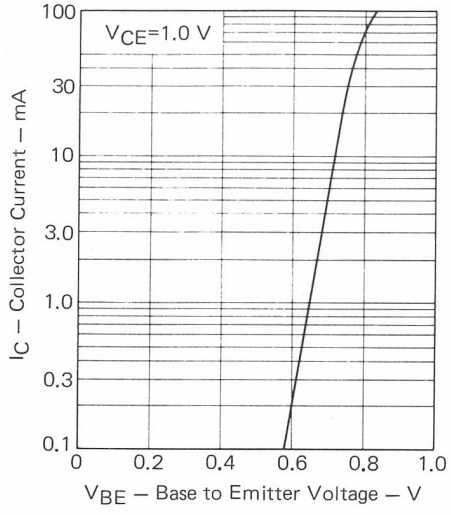
Phase-out/Discontinued

TYPICAL CHARACTERISTICS (T_a = 25 °C)

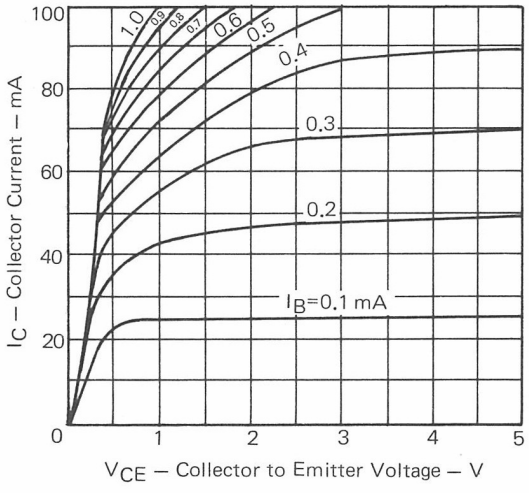
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



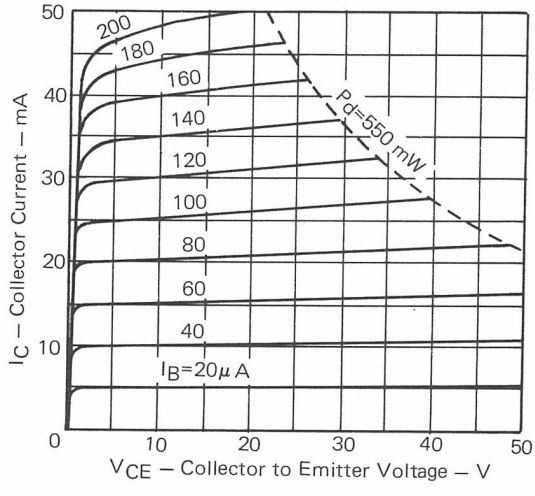
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



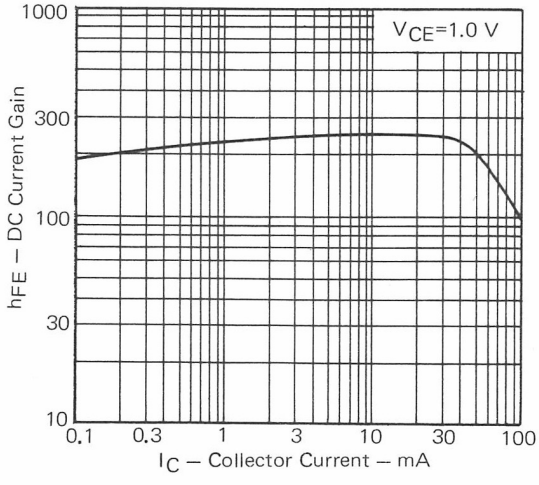
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



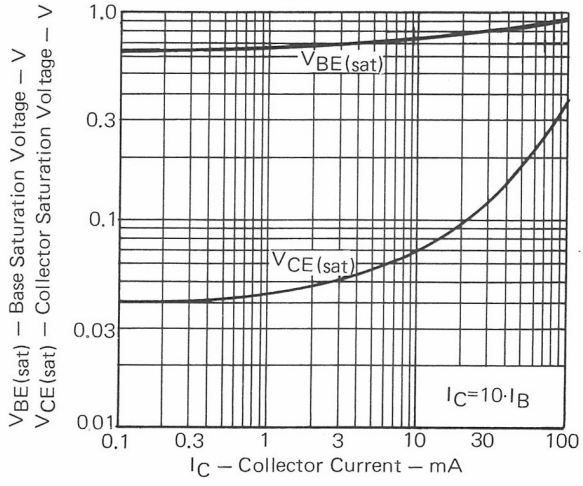
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



DC CURRENT GAIN vs. COLLECTOR CURRENT

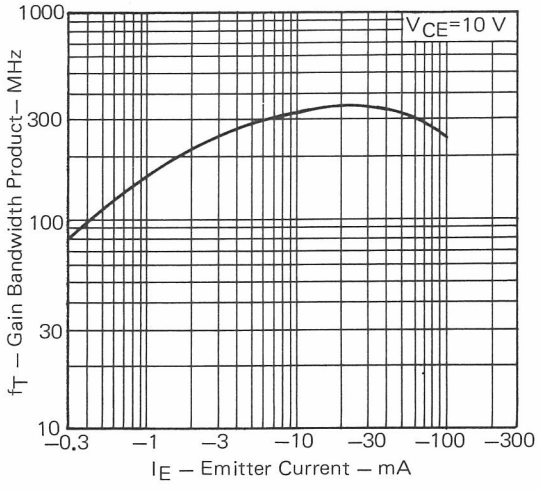


BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT

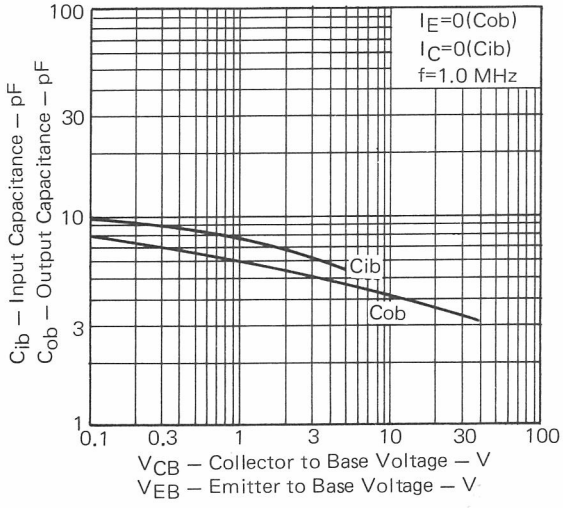


Phase-out/Discontinued

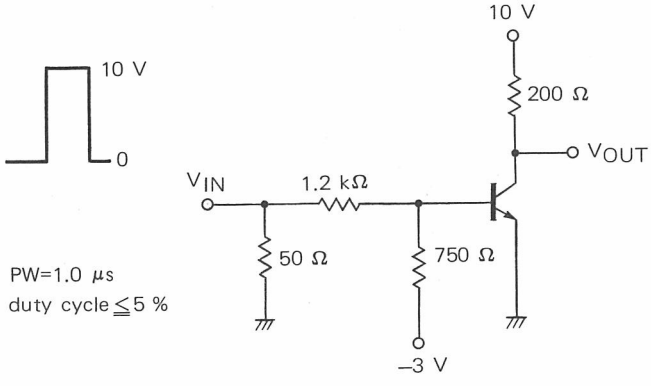
GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



INPUT AND OUTPUT CAPACITANCE vs. REVERSE VOLTAGE



SWITCHING TIME TEST CIRCUIT



Please note
our new name,
NEC Corporation,
starting April 1, 1983.

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