

To our customers,

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## Old Company Name in Catalogs and Other Documents

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

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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

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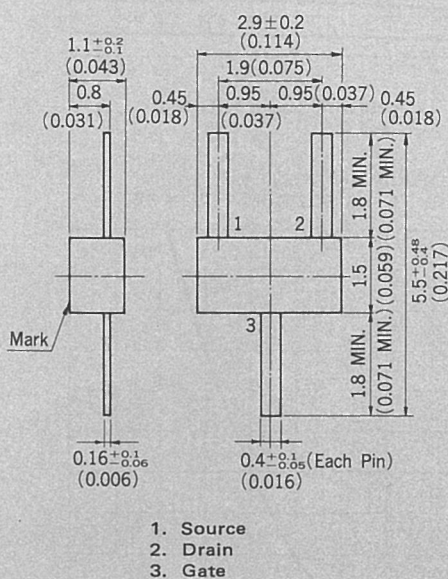
## IMPEDANCE CONVERTOR

## N-CHANNEL SILICON JUNCTION FIELD EFFECT TRANSISTOR

## MINI MOLD

### PACKAGE DIMENSIONS

in millimeters (inches)



### FEATURES

- Low zero gate voltage drain current:  $I_{DSS}=200 \mu A$  TYP.
- High forward transfer admittance:  
 $|y_{fs2}| = 1500 \mu S$  TYP. ( $V_{DS} = 5.0 V$ ,  $V_{GS}=0$ )

### ABSOLUTE MAXIMUM RATINGS

Maximum Voltage and Currents ( $T_a=25^\circ C$ )

|                                             |           |     |    |
|---------------------------------------------|-----------|-----|----|
| Drain to Source Voltage ( $V_{GS}=-1.0 V$ ) | $V_{DSX}$ | 20  | V  |
| Gate to Drain Voltage                       | $V_{GDO}$ | -20 | V  |
| Gate Current                                | $I_G$     | 10  | mA |
| Drain Current (DC)                          | $I_D$     | 10  | mA |

Maximum Power Dissipation

|                                                                |       |    |    |
|----------------------------------------------------------------|-------|----|----|
| Total Power Dissipation<br>at $25^\circ C$ Ambient Temperature | $P_T$ | 80 | mW |
|----------------------------------------------------------------|-------|----|----|

Maximum Temperatures

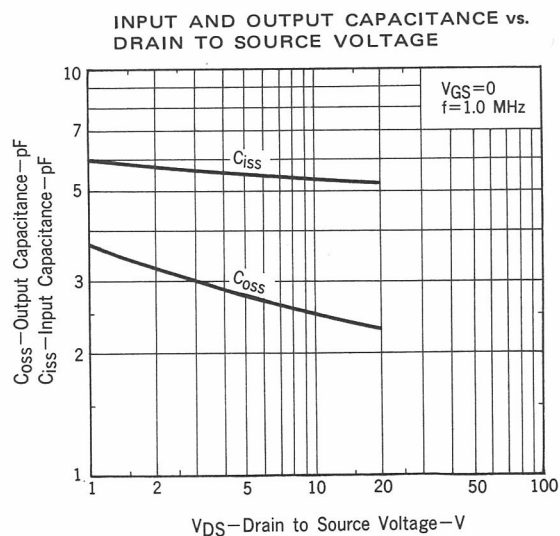
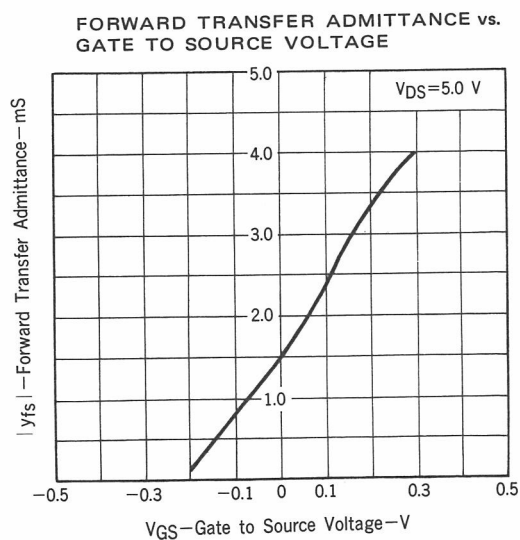
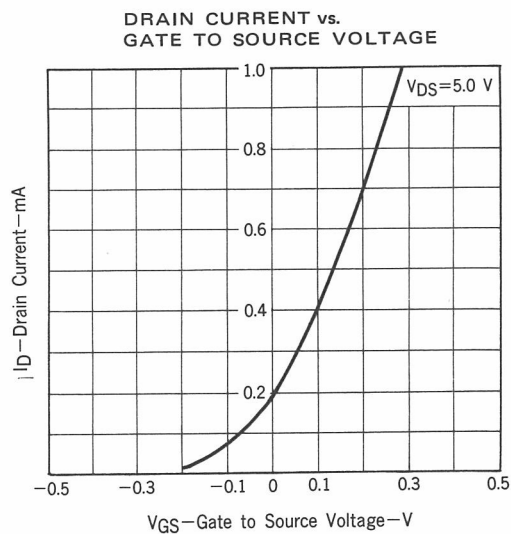
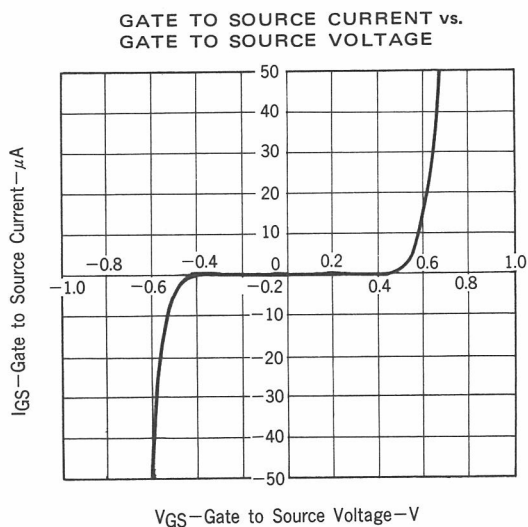
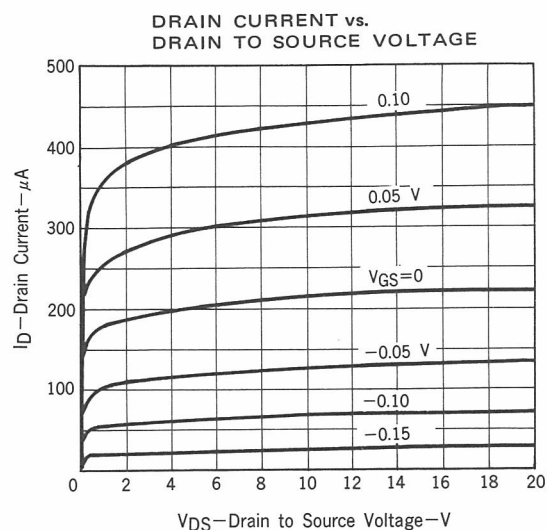
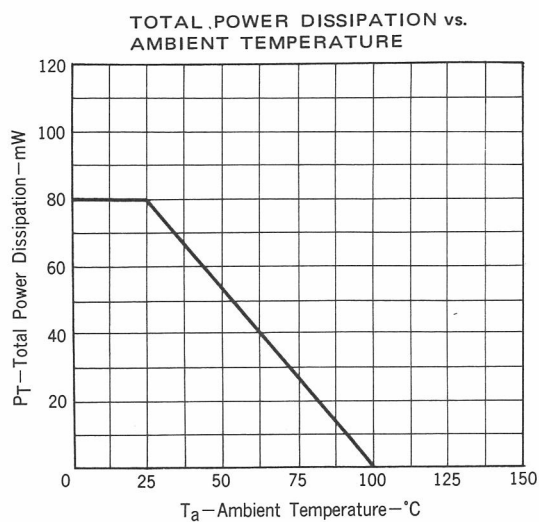
|                           |           |             |            |
|---------------------------|-----------|-------------|------------|
| Junction Temperature      | $T_j$     | 100         | $^\circ C$ |
| Storage Temperature Range | $T_{stg}$ | -55 to +100 | $^\circ C$ |

### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )

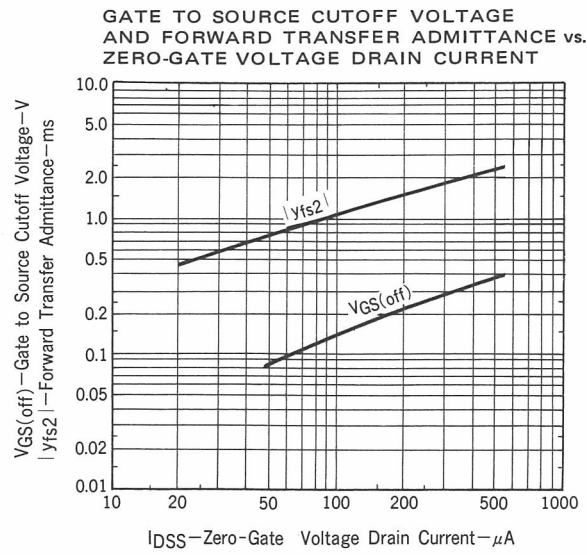
| CHARACTERISTICS                 | SYMBOL        | MIN. | TYP. | MAX. | UNIT    | TEST CONDITIONS                               |
|---------------------------------|---------------|------|------|------|---------|-----------------------------------------------|
| Zero-Gate Voltage Drain Current | $I_{DSS}$     | 20   |      | 540  | $\mu A$ | $V_{DS}=5.0 V$ , $V_{GS}=0$                   |
| Gate to Source Cutoff Voltage   | $V_{GS(off)}$ |      |      | -0.8 | V       | $V_{DS}=5.0 V$ , $I_D=1.0 \mu A$              |
| Forward Transfer Admittance     | $ y_{fs1} $   | 350  |      |      | $\mu S$ | $V_{DS}=5.0 V$ , $I_D=30 \mu A$ , $f=1.0 kHz$ |
|                                 | $ y_{fs2} $   |      | 1500 |      | $\mu S$ | $V_{DS}=5.0 V$ , $V_{GS}=0$ , $f=1.0 kHz$     |
| Input Capacitance               | $C_{iss}$     |      | 5.5  |      | pF      | $V_{DS}=5.0 V$ , $V_{GS}=0$ , $f=1.0 MHz$     |
| Output Capacitance              | $C_{oss}$     |      | 2.7  |      | pF      |                                               |

### $I_{DSS}$ Classification

| MARK              | J2      | J3      | J4       | J5        | J6        | J7        |
|-------------------|---------|---------|----------|-----------|-----------|-----------|
| $I_{DSS} (\mu A)$ | 20 - 40 | 35 - 70 | 60 - 120 | 100 - 200 | 150 - 300 | 270 - 540 |

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

**Phase-out/Discontinued**



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