

To our customers,

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## Old Company Name in Catalogs and Other Documents

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

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

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MOS FIELD EFFECT TRANSISTOR  
**2SK1491**

SWITCHING  
 N-CHANNEL POWER MOS FET

**DESCRIPTION**

The 2SK1491 is N-Channel MOS Field Effect Transistor designed for high voltage switching applications.

**FEATURES**

- Low on-state resistance  
 $R_{DS(on)} = 0.15 \Omega \text{ MAX. (} V_{GS} = 10 \text{ V, } I_D = 13 \text{ A)}$
- Low input capacitance  $C_{iss} = 1950 \text{ pF TYP.}$
- Built-in G-S gate protection diodes
- High avalanche capability ratings

**ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C)**

Drain to Source Voltage ( $V_{GS} = 0 \text{ V}$ )	$V_{DSS}$	250	V
Gate to Source Voltage ( $V_{DS} = 0 \text{ V}$ )	$V_{GSS}$	±30	V
Drain Current (DC)	$I_{D(DC)}$	±25	A
Drain Current (pulse) <sup>Note1</sup>	$I_{D(pulse)}$	±100	A
Total Power Dissipation (T <sub>C</sub> = 25°C)	$P_T$	120	W
Channel Temperature	$T_{ch}$	150	°C
Storage Temperature	$T_{stg}$	-55 to +150	°C
Single Avalanche Current <sup>Note2</sup>	$I_{AS}$	37.5	A
Single Avalanche Energy <sup>Note2</sup>	$E_{AS}$	1250	mJ

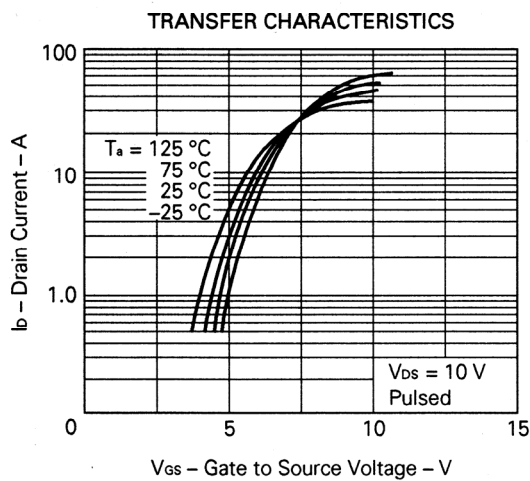
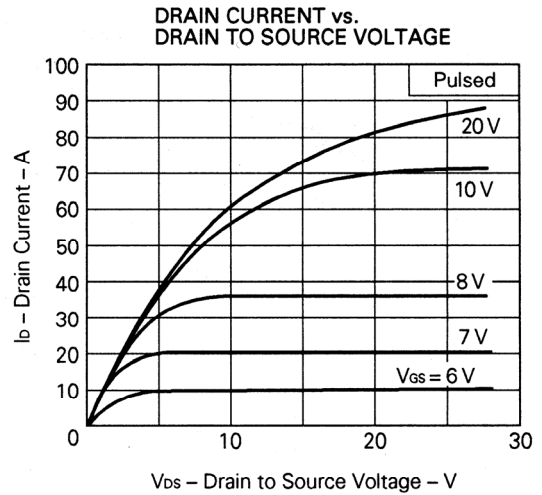
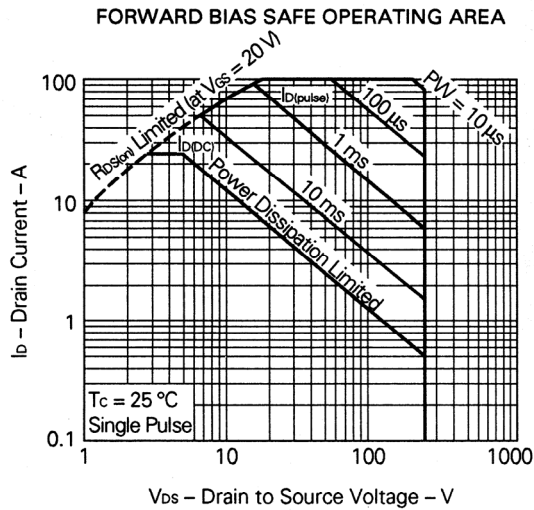
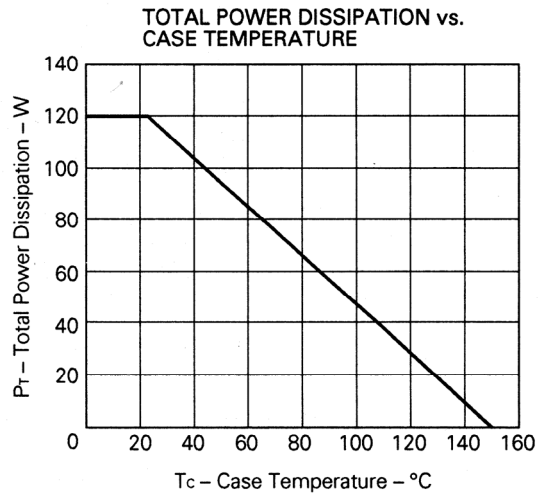
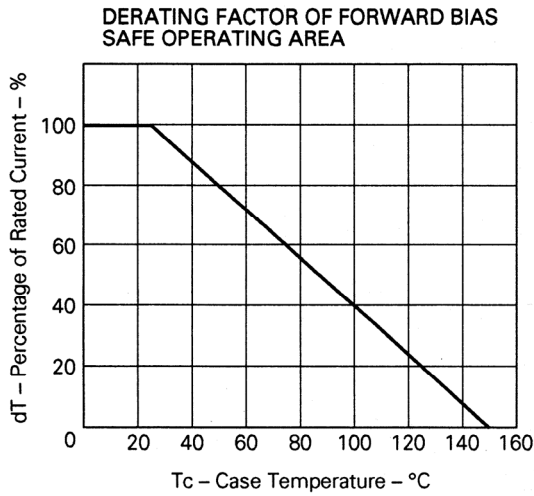
**Notes 1.**  $PW \leq 10 \mu s$ , Duty Cycle  $\leq 1\%$

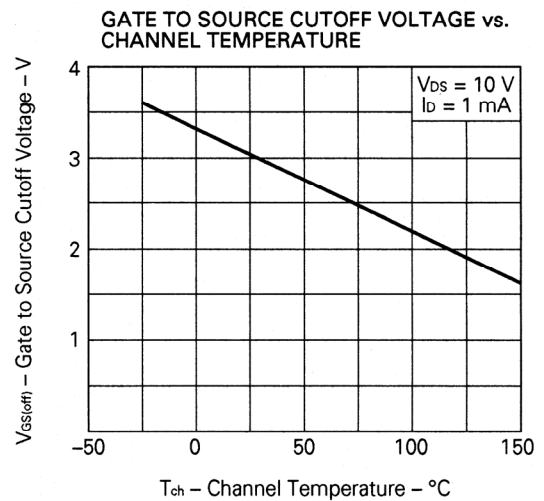
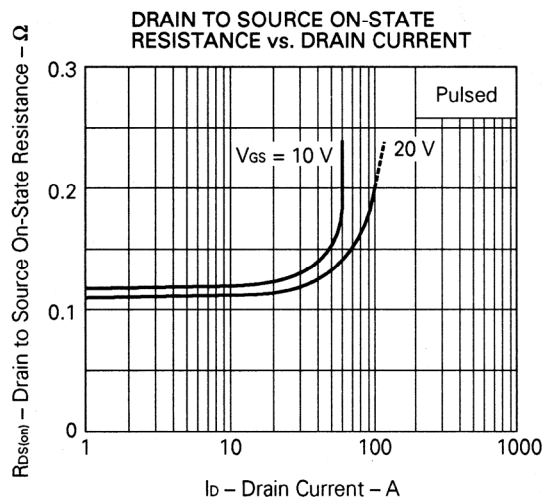
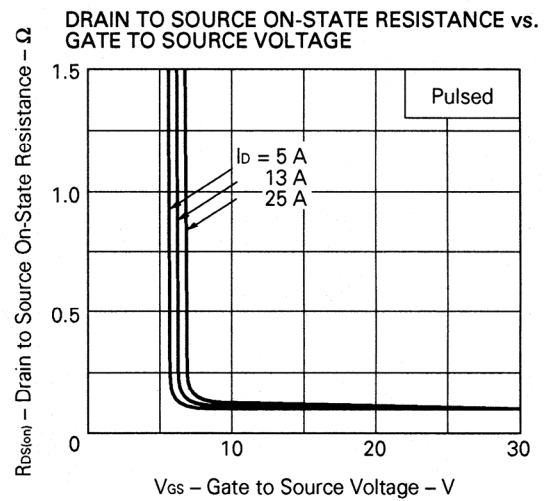
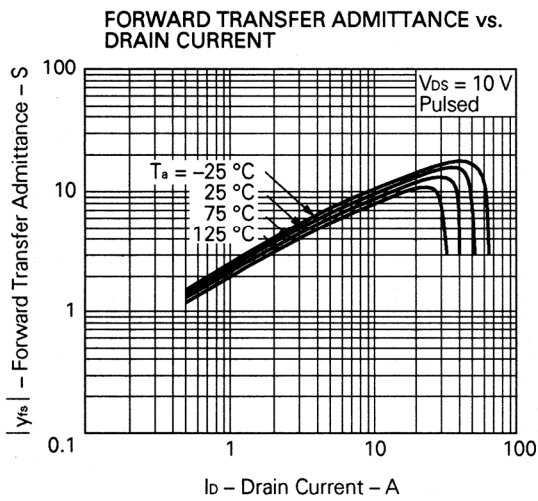
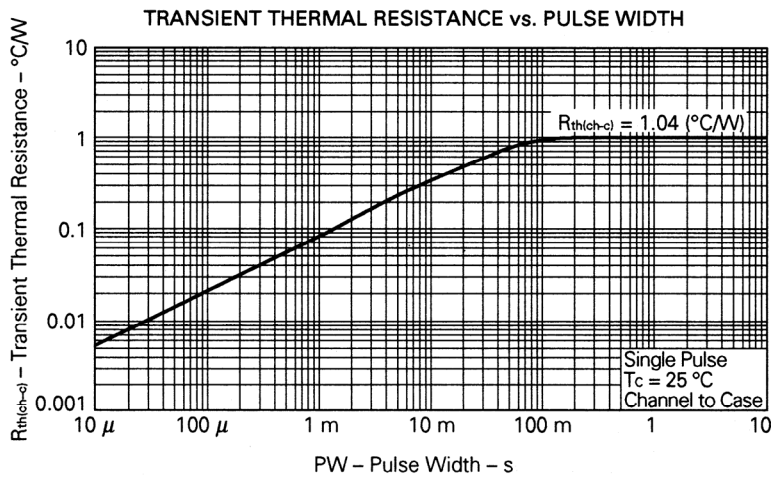
**2.**  $T_{ch} = 25^\circ\text{C}$ ,  $R_G = 25 \Omega$ ,  $V_{GS} = 20 \rightarrow 0 \text{ V}$

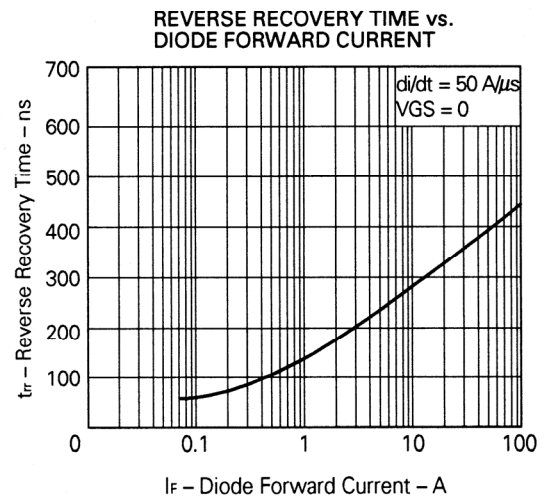
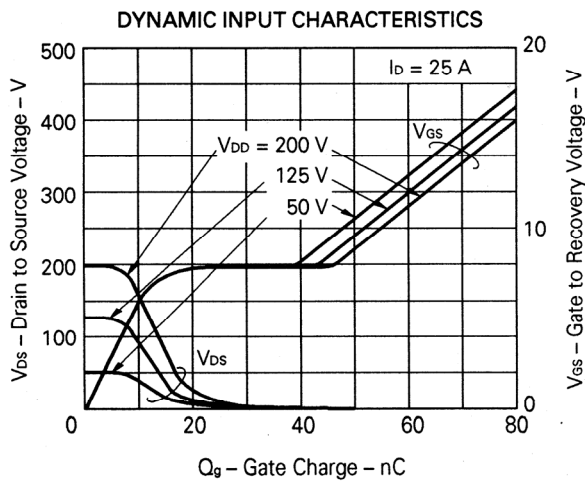
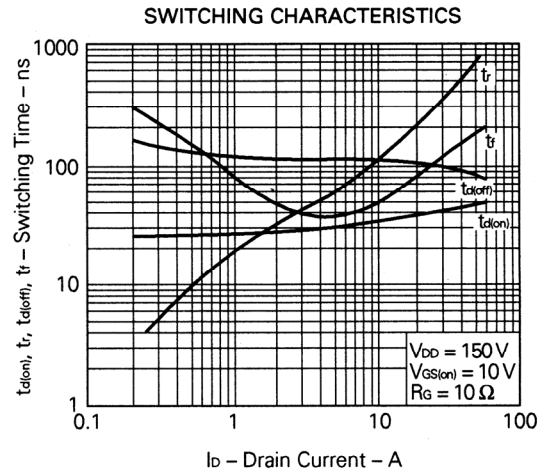
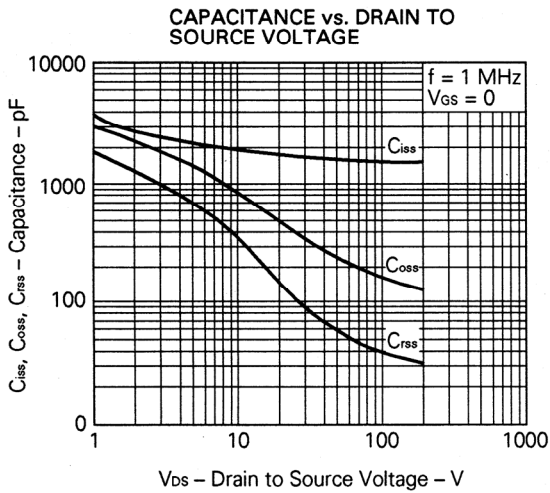
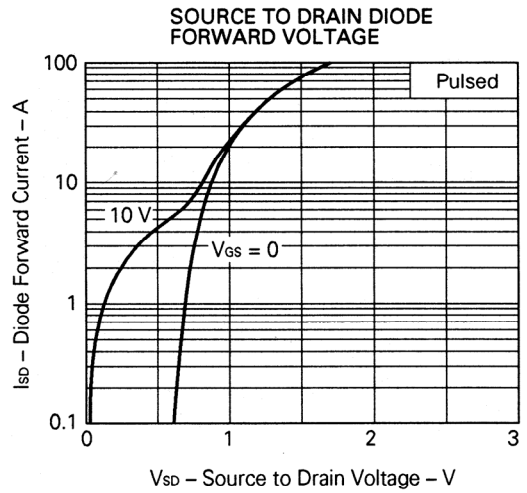
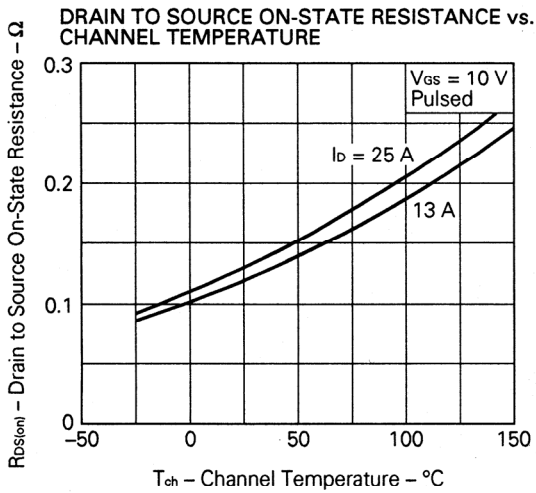
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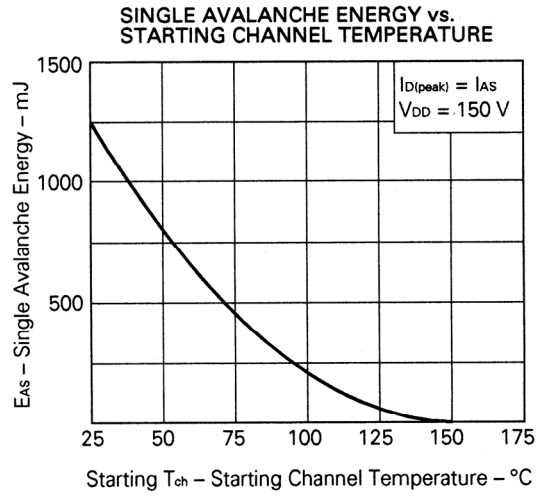
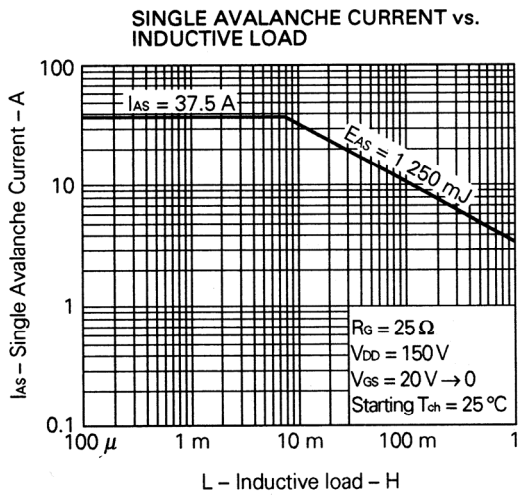


TYPICAL CHARACTERISTICS (T<sub>a</sub> = 25 °C)





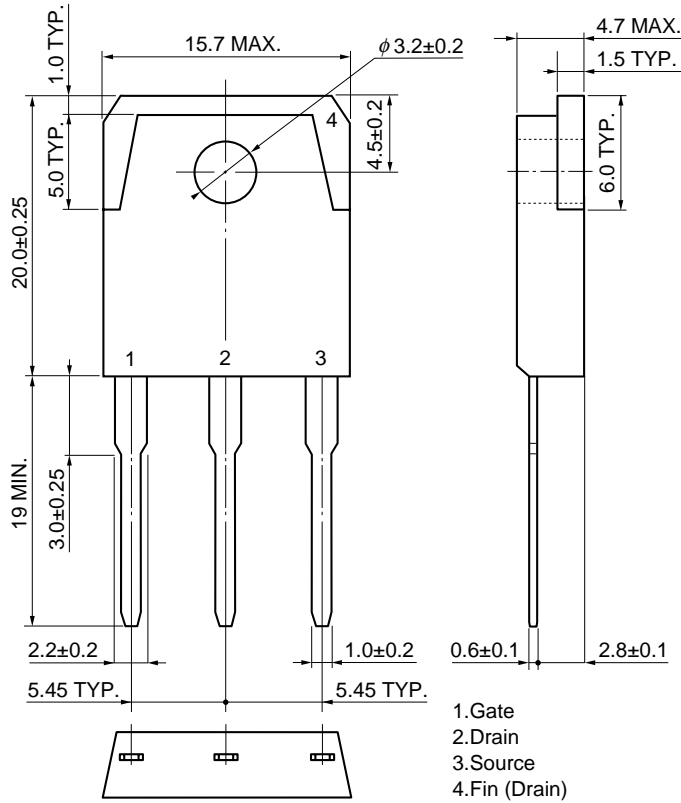




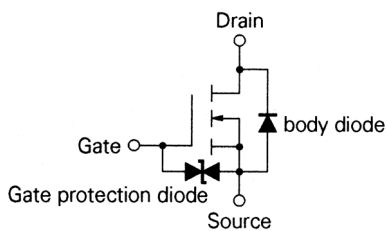


PACKAGE DRAWING (Unit: mm)

<R> TO-3P (MP-88)



EQUIVALENT CIRCUIT



**Remark** The diode connected between the gate and source of the transistor serves as a protector against ESD. When this device actually used, an additional protection circuit is externally required if a voltage exceeding the rated voltage may be applied to this device.

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