

N-CHANNEL MOS FIELD EFFECT POWER TRANSISTOR

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2SK799

DESCRIPTION The 2SK799 is N-channel MOS Field Effect Power Transistor designed for switching power supplies, DC-DC converters.

FEATURES

- Suitable for switching power supplies, actuator controls, and pulse circuits
- Low $R_{DS(on)}$
- No second breakdown

ABSOLUTE MAXIMUM RATINGS

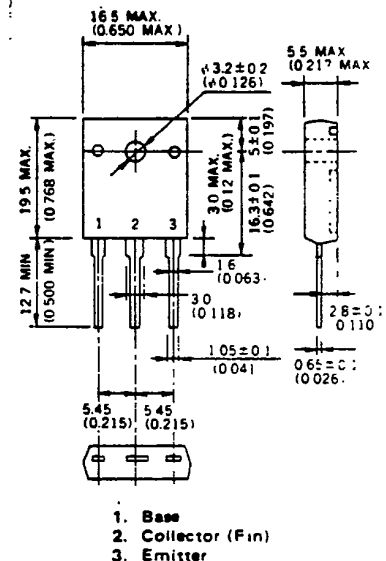
Maximum Temperatures

Storage Temperature -55 to +150 °C

Channel Temperature 150 °C Maximum

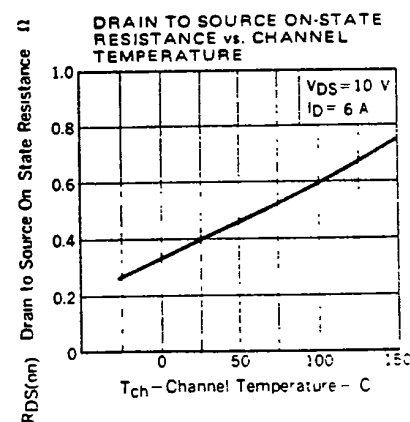
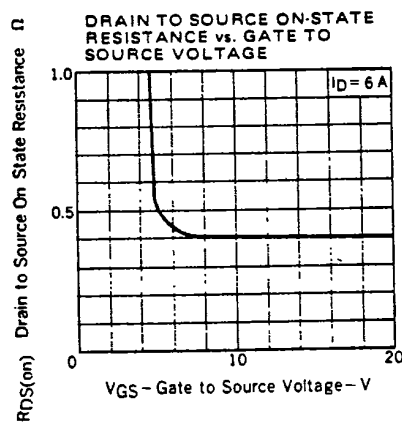
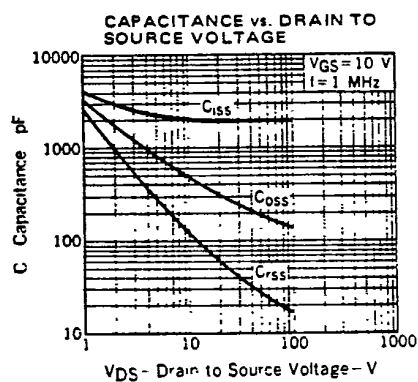
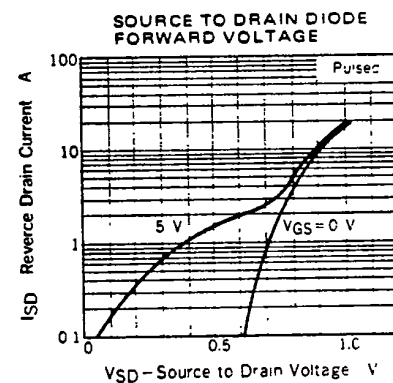
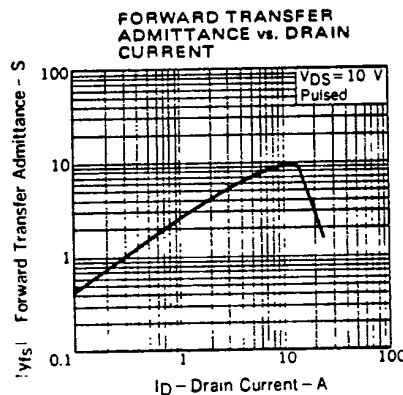
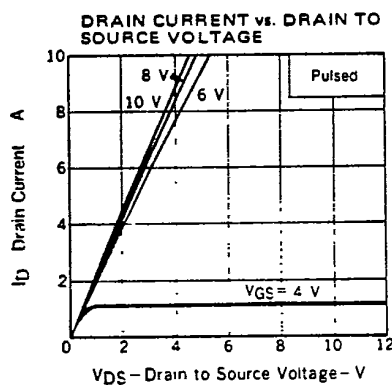
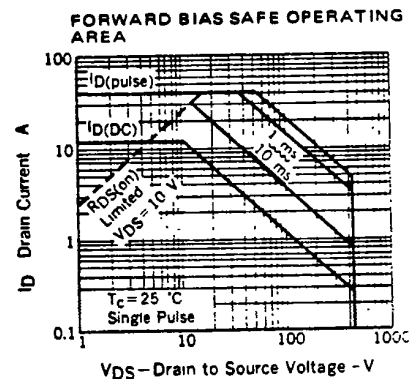
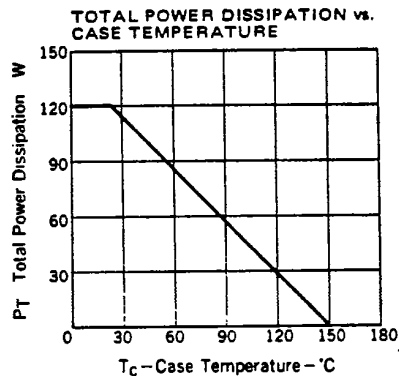
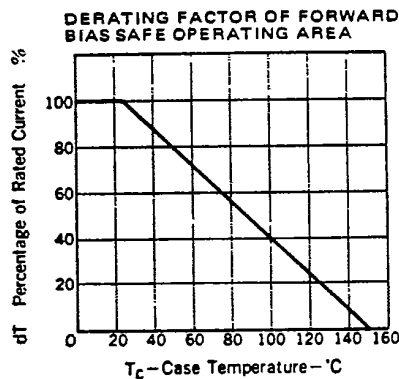
Maximum Power Dissipation ($T_C = 25^\circ\text{C}$)

Total Power Dissipation 120 W

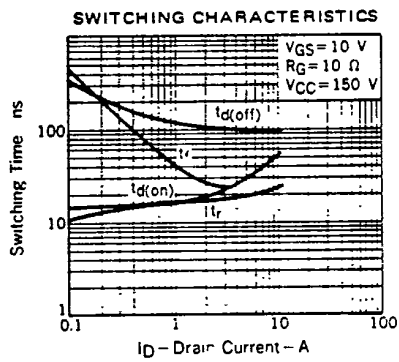
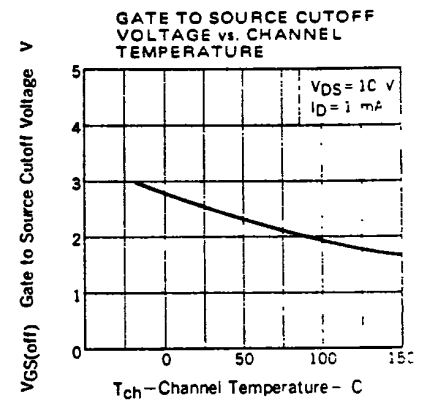
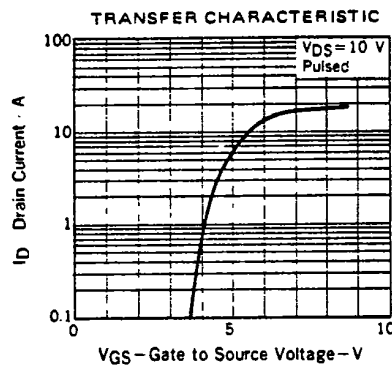
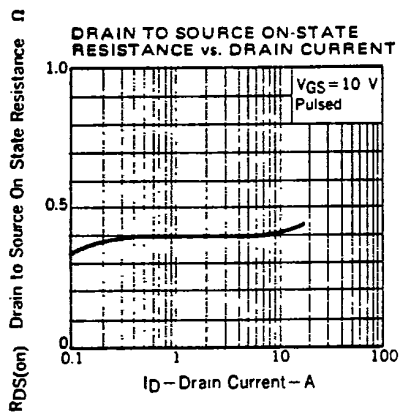
Maximum Voltages and Currents ($T_a = 25^\circ\text{C}$) V_{DS} Drain to Source Voltage 450 V V_{GS} Gate to Source Voltage ± 20 V $I_{D(DC)}$ Drain Current (DC) ± 12 A $I_{D(pulse)}$ Drain Current (pulse)* ± 40 A* $PW \leq 100 \mu\text{s}$, Duty Cycle $\leq 2\%$ **PACKAGE DIMENSIONS**
in millimeters (inches)**ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)**

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
I_{DSS}	Drain Leakage Current			100	μA	$V_{DS} = 450 \text{ V}$, $V_{GS} = 0$
I_{GSS}	Gate to Source Leakage Current			± 100	nA	$V_{GS} = \pm 20 \text{ V}$, $V_{DS} = 0$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	1.5		3.5	V	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$
$ y_{fs} $	Forward Transfer Admittance	5.0			S	$V_{DS} = 10 \text{ V}$, $I_D = 6 \text{ A}$
$R_{DS(on)}$	Drain to Source On-State Resistance		0.40	0.50	Ω	$V_{GS} = 10 \text{ V}$, $I_D = 6 \text{ A}$
C_{iss}	Input Capacitance		2000		pF	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$
C_{oss}	Output Capacitance		500		pF	
C_{rss}	Reverse Transfer Capacitance		140		pF	
$t_{d(on)}$	Turn-On Delay Time		20		ns	
t_r	Rise Time		35		ns	$I_D = 6 \text{ A}$, $V_{CC} = 150 \text{ V}$ $V_{GS(on)} = 10 \text{ V}$ $R_{in} = 10 \Omega$
$t_{d(off)}$	Turn-Off Delay Time		100		ns	
t_f	Fall Time		35		ns	

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

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SWITCHING TIME TEST CIRCUIT

