

NEC

N-CHANNEL MOS FIELD EFFECT POWER TRANSISTOR

98 DE 6427525 0018925 B

2SK774

DESCRIPTION The 2SK774 is N-channel MOS Field Effect Power Transistor designed for switching power supplies DC-DC converter.

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

ABSOLUTE MAXIMUM RATINGS

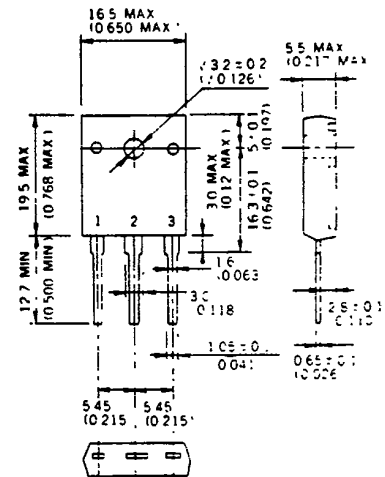
Maximum Temperatures

Storage Temperature -55 to $+150^{\circ}\text{C}$ Channel Temperature 150°C MaximumMaximum 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 500 V V_{GS} Gate to Source Voltage ± 20 V $I_{D(DC)}$ Drain Current (DC) ± 18 A $I_{D(pulse)}$ Drain Current (pulse)* ± 60 A* $PW \leq 300 \mu\text{s}$, Duty Cycle $\leq 2\%$ **PACKAGE DIMENSIONS**

in millimeters (inches)

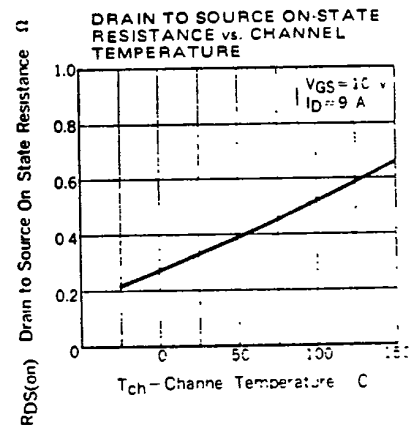
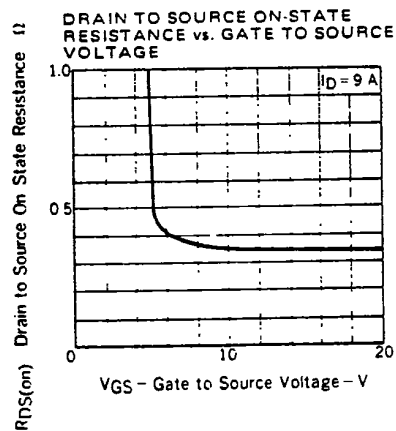
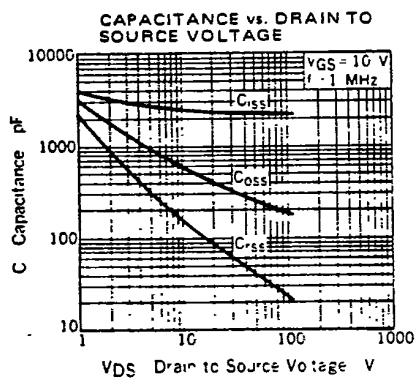
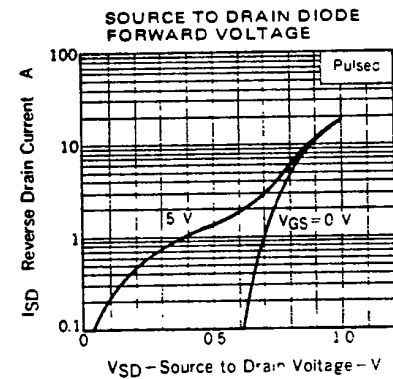
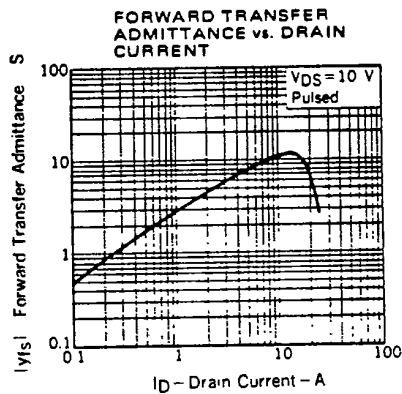
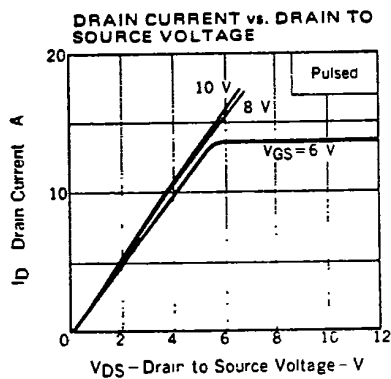
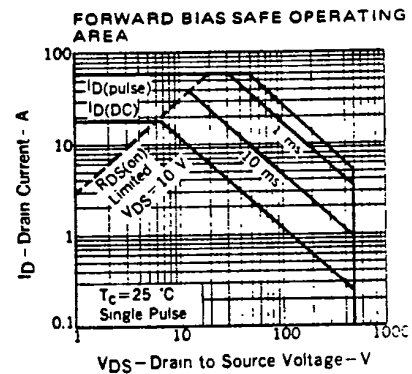
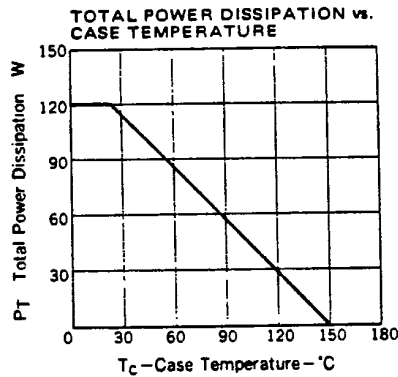
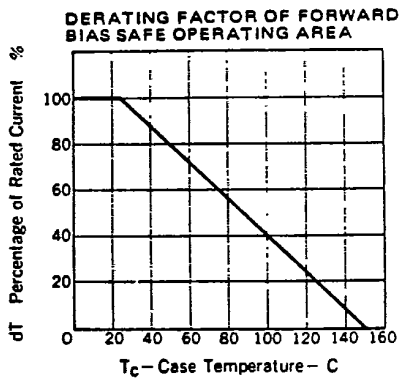


1. Gate
2. Drain (Fin)
3. Source

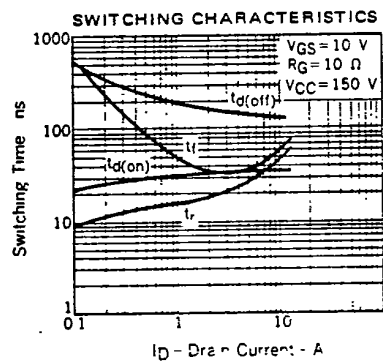
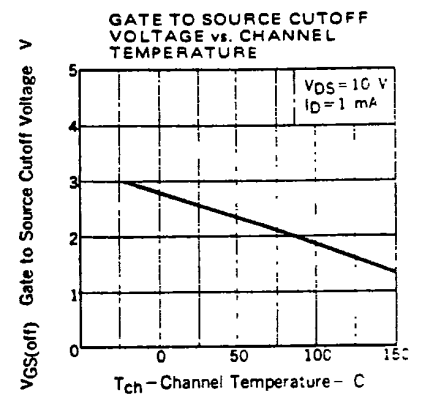
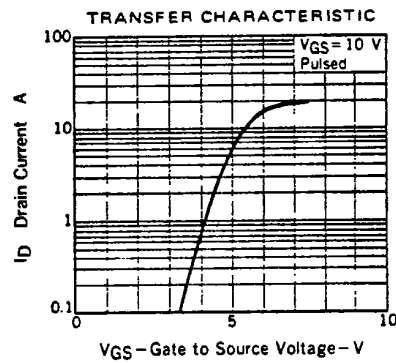
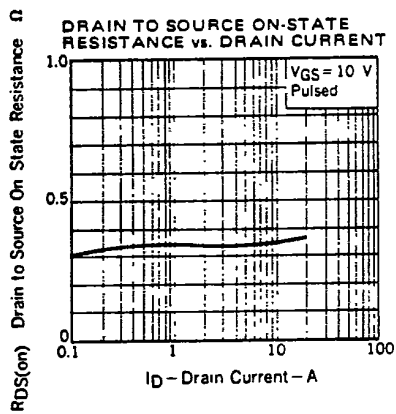
ELECTRICAL CHARACTERISTICS ($T_a = 25^{\circ}\text{C}$)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
I_{DSS}	Drain Leakage Current			100	μA	$V_{DS} = 500 \text{ V}$, $V_{GS} = 0$
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	8.0			S	$V_{DS} = 10 \text{ V}$, $I_D = 9 \text{ A}$
$R_{DS(on)}$	Drain to Source On-State Resistance		0.35	0.45	Ω	$V_{GS} = 10 \text{ V}$, $I_D = 9 \text{ A}$
C_{iss}	Input Capacitance		2600		pF	
C_{oss}	Output Capacitance		620		pF	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$
C_{rss}	Reverse Transfer Capacitance		170		pF	
$t_{d(on)}$	Turn-On Delay Time		35		ns	$I_D = 9 \text{ A}$, $V_{CC} \approx 150 \text{ V}$
t_r	Rise Time		55		ns	$V_{GS(on)} = 10 \text{ V}$
$t_{d(off)}$	Turn-Off Delay Time		150		ns	$R_L = 16 \Omega$
t_f	Fall Time		55		ns	$R_{in} = 10 \Omega$

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

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SWITCHING TIME TEST CIRCUIT

