



# N-CHANNEL MOS FIELD EFFECT POWER TRANSISTOR

## 2SK773

**DESCRIPTION** The 2SK773 is N-channel MOD 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 ( $T_C = 25$ °C)

Total Power Dissipation . . . . . 120 W

#### Maximum Voltages and Currents ( $T_a = 25$ °C)

$V_{DSS}$  Drain to Source Voltage . . . . . 500 V

$V_{GSS}$  Gate to Source Voltage . . . . .  $\pm 20$  V

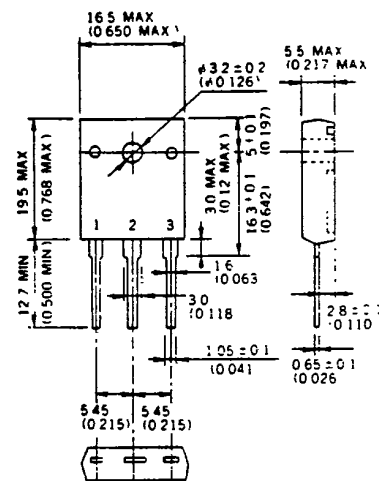
$I_{D(DC)}$  Drain Current (DC) . . . . .  $\pm 12$  A

$I_D$ (pulse) Drain Current (pulse)\* . . . . .  $\pm 40$  A

\*  $PW \leq 100$   $\mu s$ , Duty Cycle  $\leq 2\%$

### PACKAGE DIMENSIONS

in millimeters (inches)



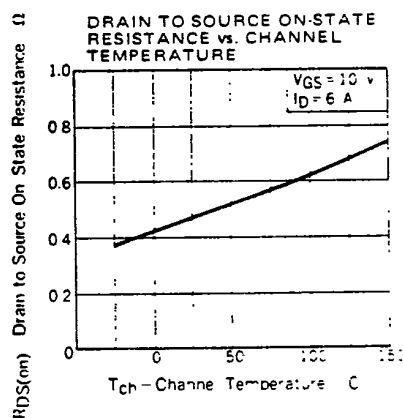
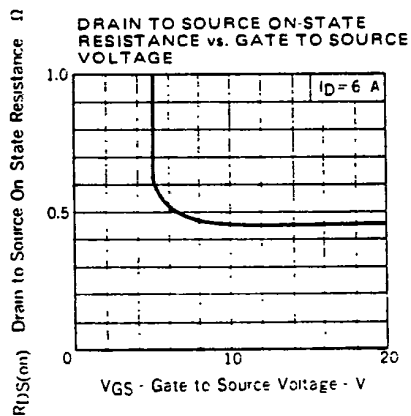
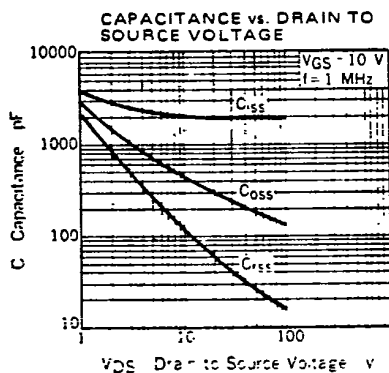
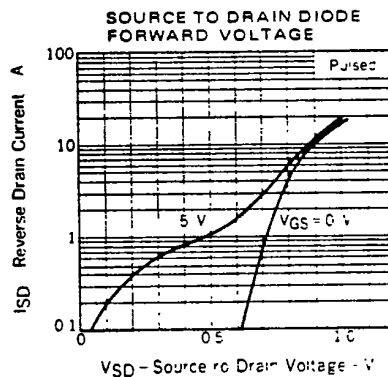
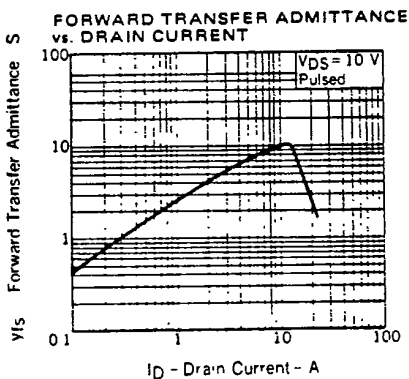
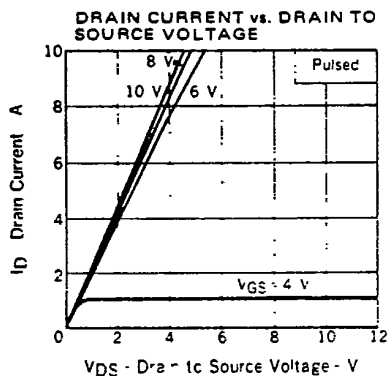
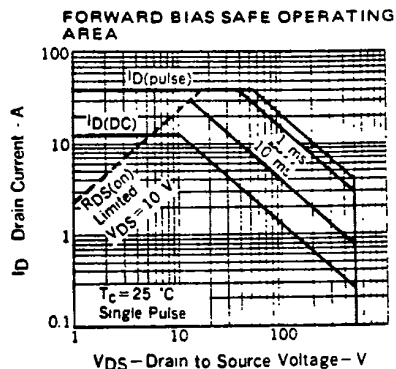
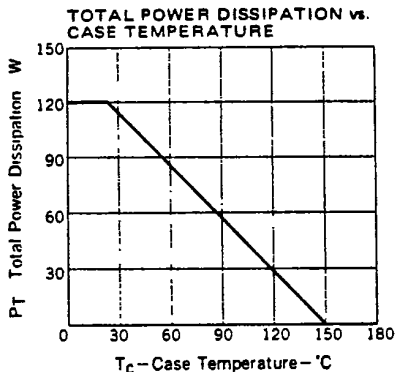
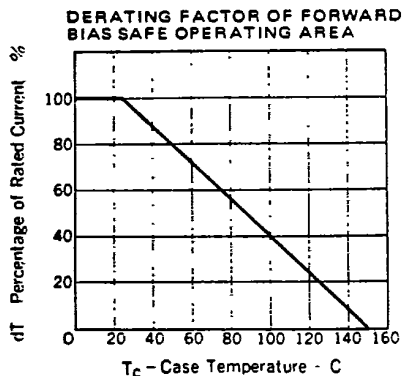
1. Gate  
2. Drain (Fin)  
3. Source

### ELECTRICAL CHARACTERISTICS ( $T_a = 25$ °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$I_{DSS}$	Drain Leakage Current			100	$\mu A$	$V_{DS} = 500$ V, $V_{GS} = 0$
$I_{GSS}$	Gate to Source Leakage Current			$\pm 100$	nA	$V_{GS} = \pm 20$ V, $V_{DS} = 0$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	1.5		3.5	V	$V_{DS} = 10$ V, $I_D = 1$ mA
$ Y_{fs} $	Forward Transfer Admittance	5.0			S	$V_{DS} = 10$ V, $I_D = 6$ A
$R_{DS(on)}$	Drain to Source On-State Resistance		0.47	0.60	$\Omega$	$V_{GS} = 10$ V, $I_D = 6$ A
$C_{iss}$	Input Capacitance		2200		pF	
$C_{oss}$	Output Capacitance		480		pF	$V_{DS} = 10$ V, $V_{GS} = 0$ , $f = 1$ MHz
$C_{rss}$	Reverse Transfer Capacitance		130		pF	
$t_d(on)$	Turn-On Delay Time		30		ns	$I_D = 6$ A, $V_{CC} \approx 150$ V
$t_r$	Rise Time		45		ns	$V_{GS(on)} = 10$ V
$t_d(off)$	Turn-Off Delay Time		120		ns	$R_L = 25$ $\Omega$
$t_f$	Fall Time		45		ns	$R_{in} = 10$ $\Omega$

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

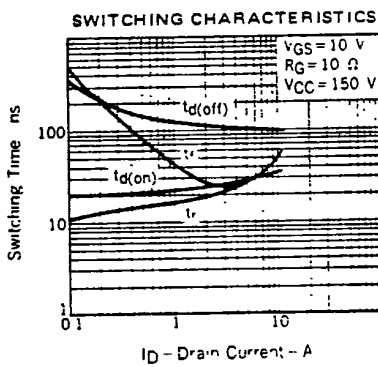
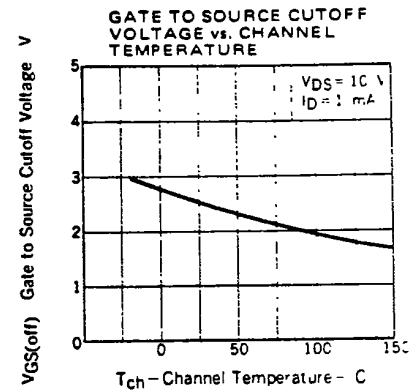
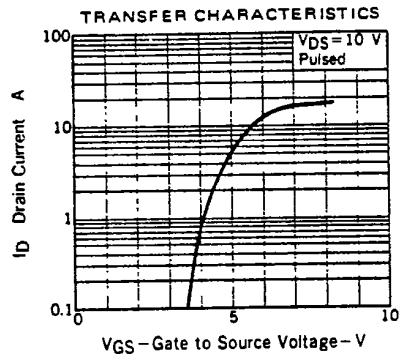
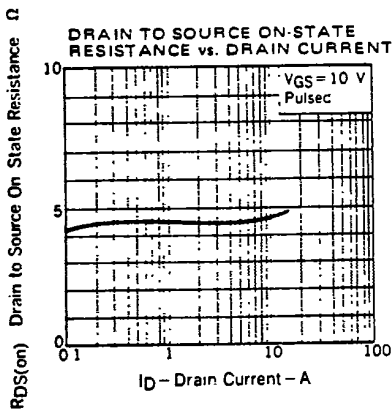
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**SWITCHING TIME TEST CIRCUIT**

