

N-CHANNEL MOS FIELD EFFECT POWER TRANSISTOR

2SK737

DESCRIPTION The 2SK737 is N-Channel MOS Field Effect Power Transistor designed for solenoid, motor and lamp driver.

- FEATURES**
- 4V Gate Drive — Logic level —
 - Low $R_{DS(on)}$
 - No Secondary Breakdown

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature -55 to $+150$ °C

Channel Temperature 150 °C Maximum

Maximum Power Dissipations

Total Power Dissipation ($T_a = 25$ °C) . . . 2.0 W

Total Power Dissipation ($T_c = 25$ °C) . . . 35 W

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

V_{DSS} Drain to Source Voltage . . . 100 V

V_{GSS} Gate to Source Voltage . . . ± 20 V

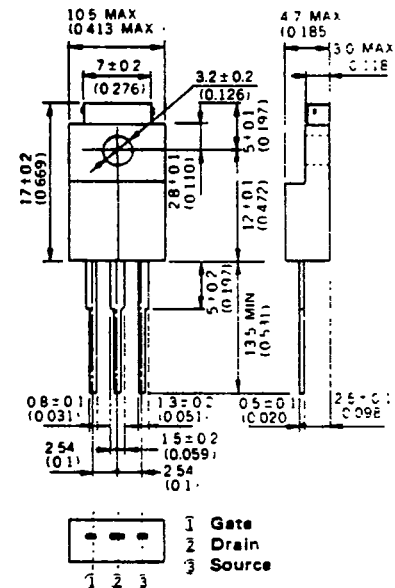
$I_{D(DC)}$ Drain Current (DC) ± 12 A

I_D (pulse) Drain Current (pulse)* ± 60 A

* $PW \leq 300$ μs , Duty Cycle ≤ 10 %

PACKAGE DIMENSIONS

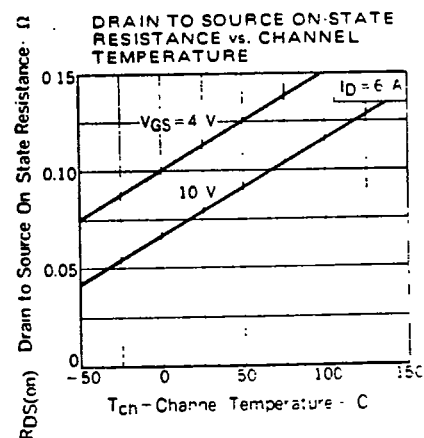
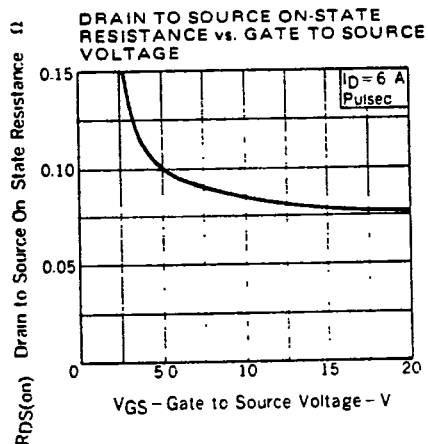
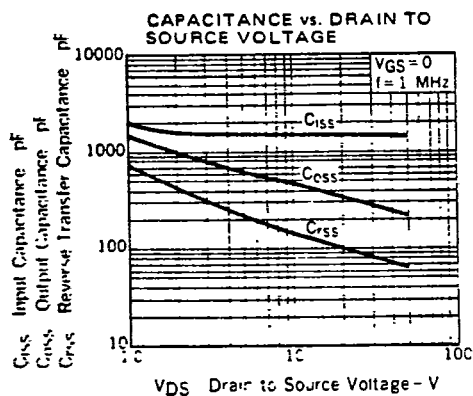
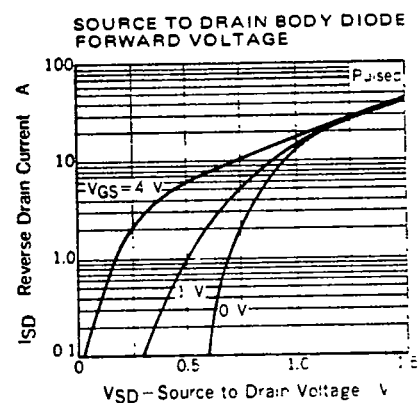
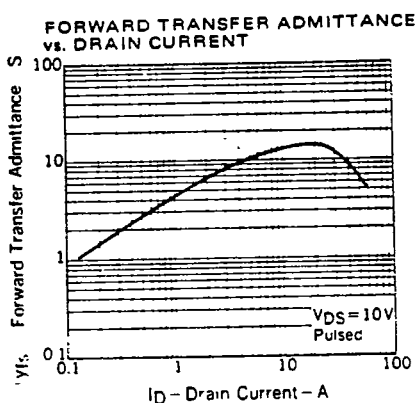
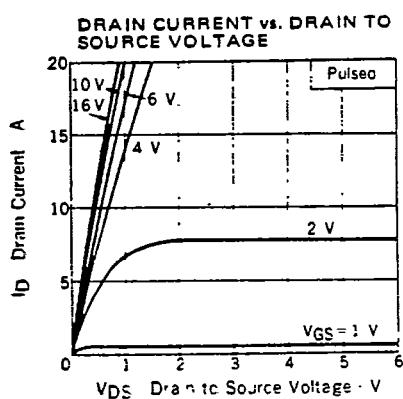
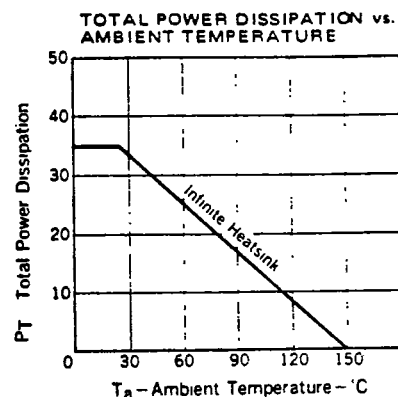
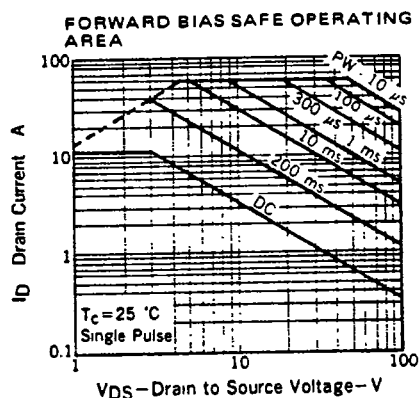
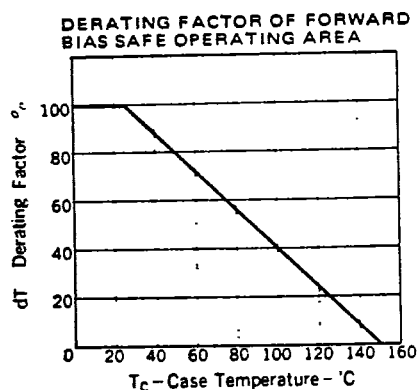
in millimeters (inches)

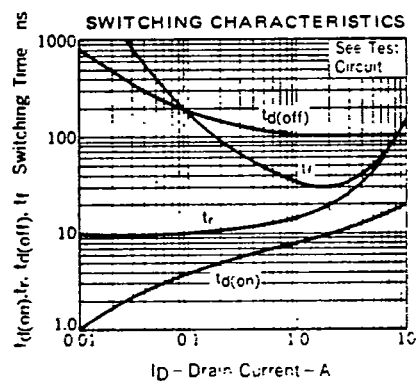
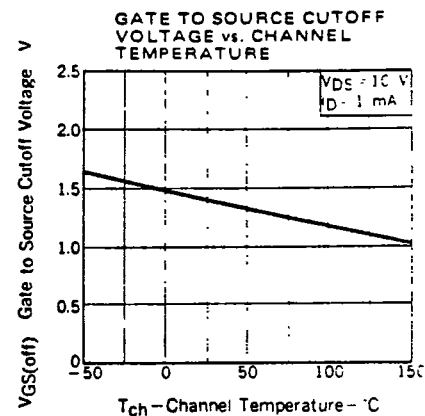
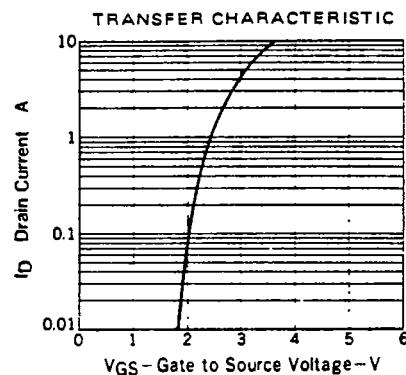
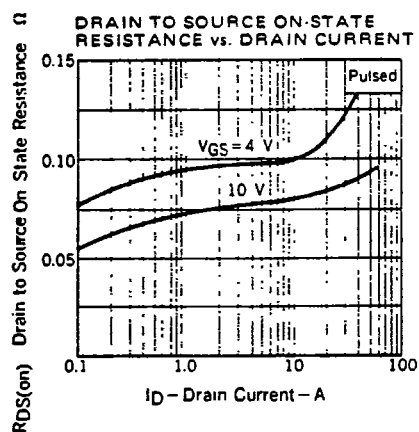


ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$R_{DS(on)}$	Drain to Source On-State Resistance			0.15	Ω	$V_{GS} = 10$ V, $I_D = 6$ A
$R_{DS(on)}$	Drain to Source On-State Resistance			0.20	Ω	$V_{GS} = 4$ V, $I_D = 6$ A
$V_{GS(off)}$	Gate to Source Cutoff Voltage	1.0		2.5	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
I_{DSS}	Drain Leakage Current			10	μA	$V_{DS} = 100$ V, $V_{GS} = 0$
I_{GSS}	Gate to Source Leakage Current			± 100	nA	$V_{GS} = \pm 20$ V, $V_{DS} = 0$
C_{iss}	Input Capacitance		1600		pF	$V_{DS} = 10$ V
C_{oss}	Output Capacitance		500		pF	$V_{GS} = 0$
C_{rss}	Reverse Transfer Capacitance		150		pF	$f = 1$ MHz
$t_d(on)$	Turn On Delay Time		15		ns	$I_D = 6$ A, $V_{CC} = 50$ V $R_L = 5$ Ω $R_{in} = 10$ Ω
t_r	Rise Time		60		ns	
$t_d(off)$	Turn Off Delay Time		100		ns	
t_f	Fall Time		50		ns	

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





SWITCHING TIME TEST CIRCUIT

