

# 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.

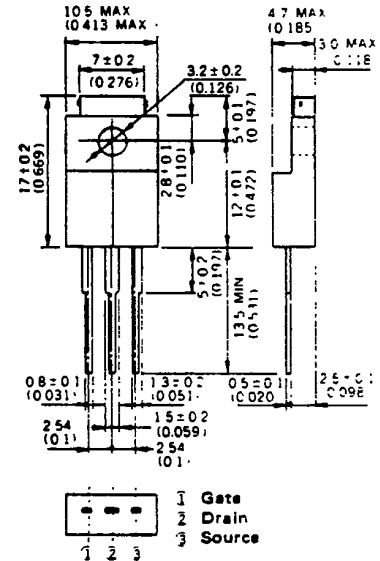
- FEATURES**
- 4V Gate Drive – Logic level –
  - Low  $R_{DS(on)}$
  - No Secondary Breakdown

**ABSOLUTE MAXIMUM RATINGS**

Maximum Temperatures	
Storage Temperature	–55 to +150 °C
Channel Temperature	150 °C Maximum
Maximum Power Dissipations	
Total Power Dissipation ( $T_a = 25\text{ °C}$ )	2.0 W
Total Power Dissipation ( $T_c = 25\text{ °C}$ )	35 W
Maximum Voltages and Currents ( $T_a = 25\text{ °C}$ )	
$V_{DSS}$ Drain to Source Voltage	100 V
$V_{GSS}$ Gate to Source Voltage	±20 V
$I_{D(DC)}$ Drain Current (DC)	±12 A
$I_D(\text{pulse})$ Drain Current (pulse)*	±60 A

\*  $PW \leq 300\ \mu s$ , Duty Cycle  $\leq 10\%$

**PACKAGE DIMENSIONS**  
in millimeters (inches)

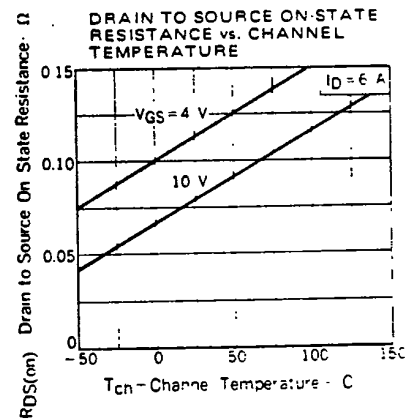
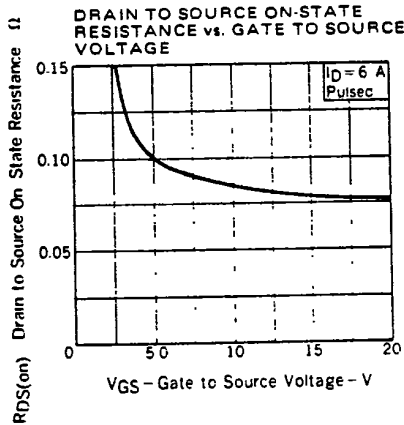
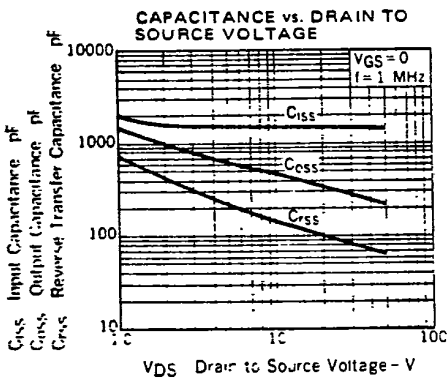
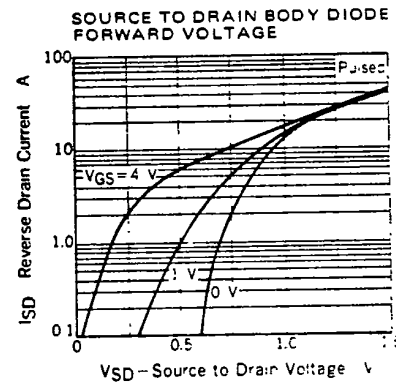
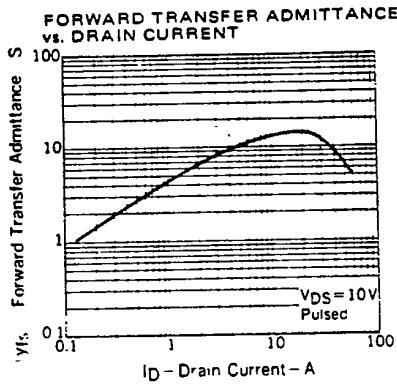
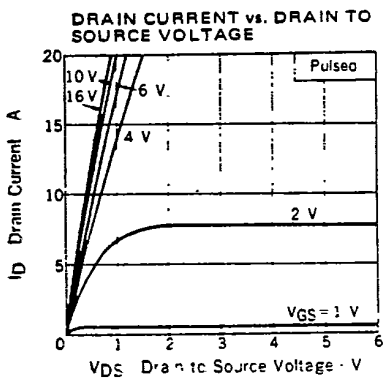
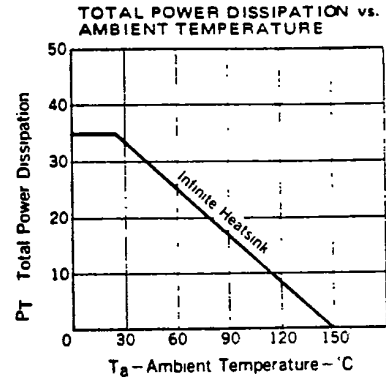
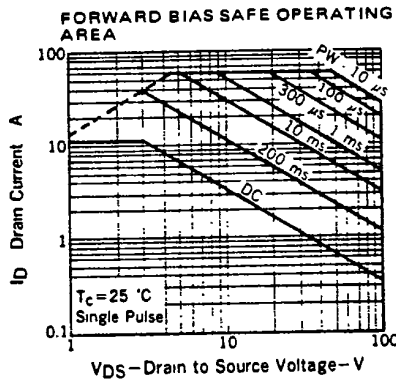
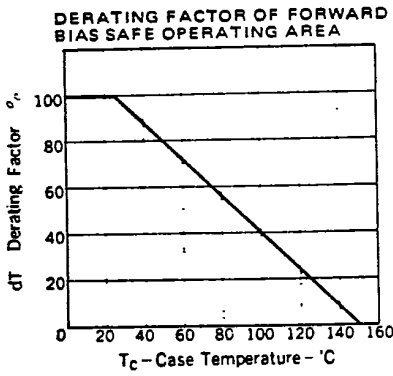


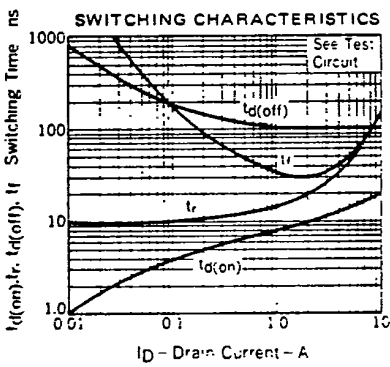
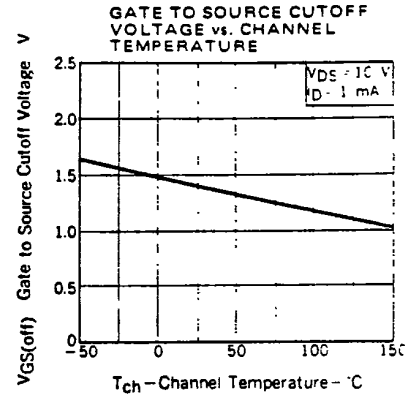
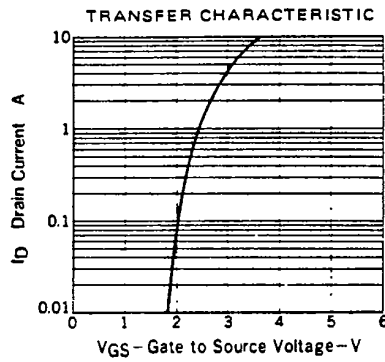
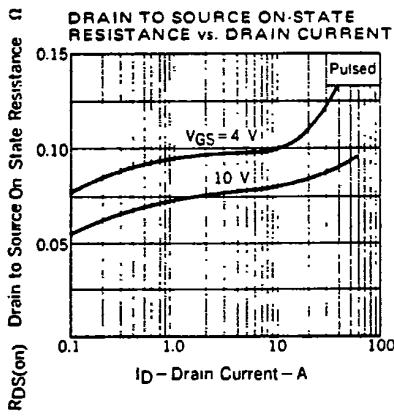
**ELECTRICAL CHARACTERISTICS ( $T_a = 25\text{ °C}$ )**

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$R_{DS(on)}$	Drain to Source On-State Resistance			0.15	$\Omega$	$V_{GS} = 10\text{ V}$ , $I_D = 6\text{ A}$
$R_{DS(on)}$	Drain to Source On-State Resistance			0.20	$\Omega$	$V_{GS} = 4\text{ V}$ , $I_D = 6\text{ A}$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	1.0		2.5	V	$V_{DS} = 10\text{ V}$ , $I_D = 1\text{ mA}$
$ Y_{fs} $	Forward Transfer Admittance	5.0			S	$V_{DS} = 10\text{ V}$ , $I_D = 6\text{ A}$
$I_{DSS}$	Drain Leakage Current			10	$\mu A$	$V_{DS} = 100\text{ V}$ , $V_{GS} = 0$
$I_{GSS}$	Gate to Source Leakage Current			±100	nA	$V_{GS} = \pm 20\text{ V}$ , $V_{DS} = 0$
$C_{iss}$	Input Capacitance		1600		pF	$V_{DS} = 10\text{ V}$
$C_{oss}$	Output Capacitance		500		pF	$V_{GS} = 0$
$C_{rss}$	Reverse Transfer Capacitance		150		pF	$f = 1\text{ MHz}$
$t_d(on)$	Turn On Delay Time		15		ns	
$t_r$	Rise Time		60		ns	$I_D = 6\text{ A}$ , $V_{CC} \approx 50\text{ V}$
$t_d(off)$	Turn Off Delay Time		100		ns	$R_L = 5\ \Omega$
$t_f$	Fall Time		50		ns	$R_{in} = 10\ \Omega$

NEC cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement.

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





**SWITCHING TIME TEST CIRCUIT**

