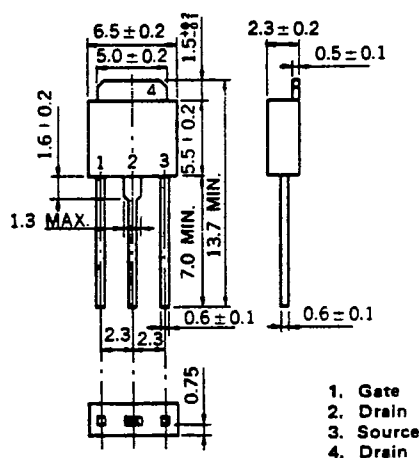


# MOS FIELD EFFECT POWER TRANSISTOR 2SK612

## FAST SWITCHING N-CHANNEL SILICON POWER MOS FET INDUSTRIAL USE

### PACKAGE DIMENSIONS (Unit: mm)



### FEATURES

- Suitable for switching power supplies, actuator controls, and pulse circuits.
- Low  $R_{DS(on)}$
- No second breakdown
- 4 V Gate Drive — Logic level —

### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

Drain to Source Voltage	$V_{DSS}$	100	V
Gate to Source Voltage	$V_{GSS}$	±20	V
Continuous Drain Current	$I_{D(DC)}$	±2	A
Peak Drain Current	$I_{D(pulse)^*}$	±8	A
Total Power Dissipation	$P_T^{**}$	20	W
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

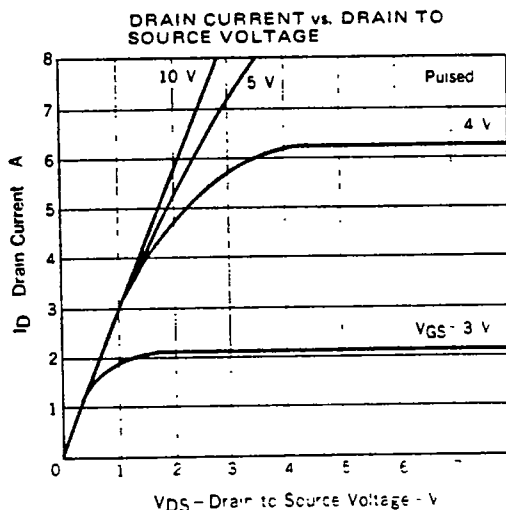
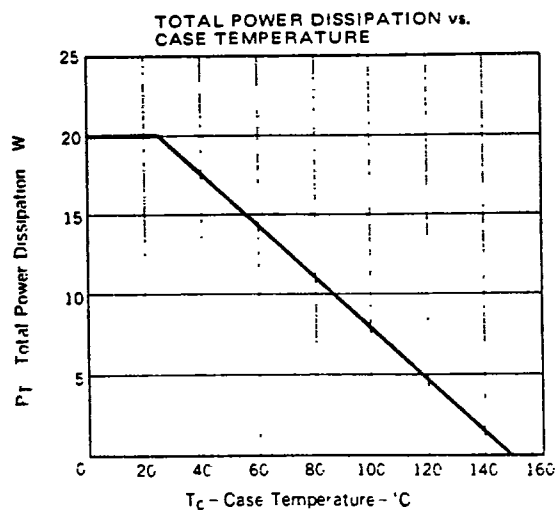
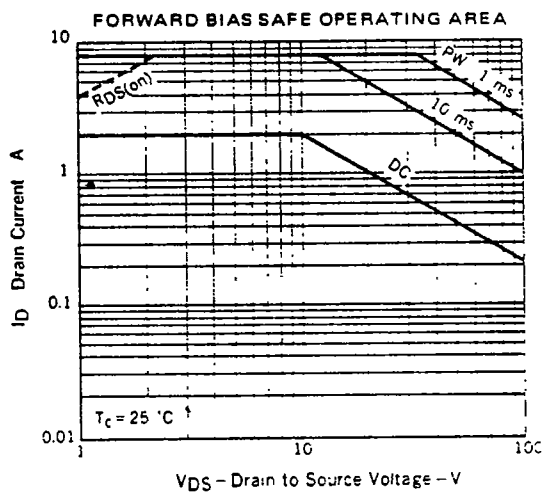
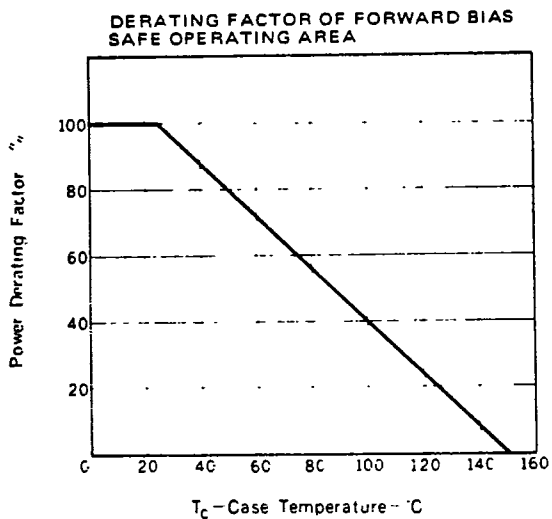
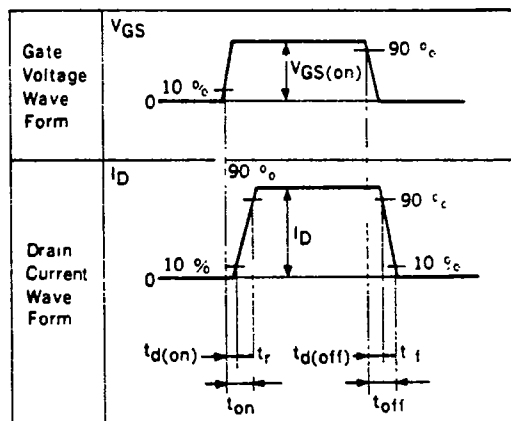
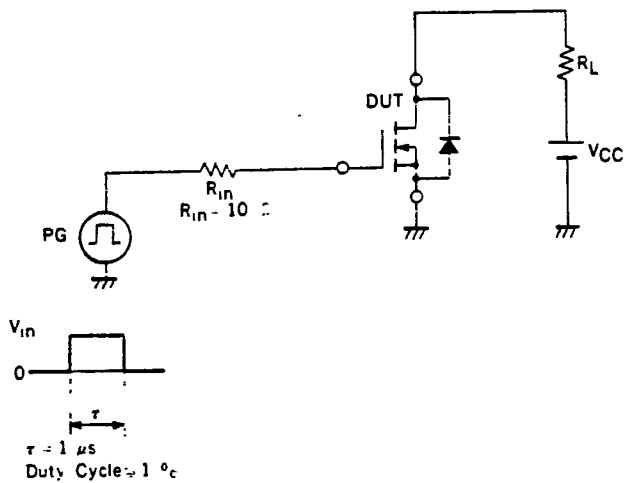
\*  $PW \leq 10$  ms, Duty Cycle  $\leq 50$  %

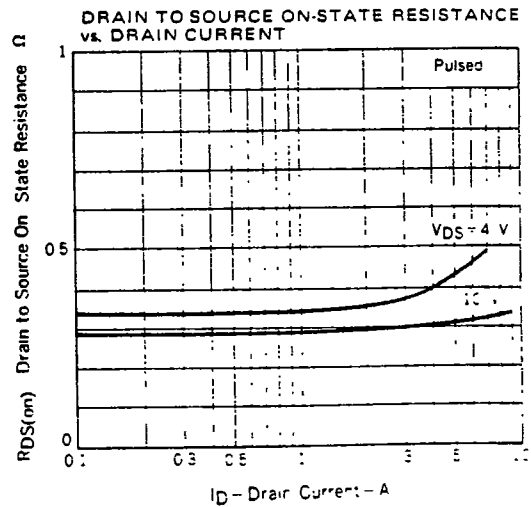
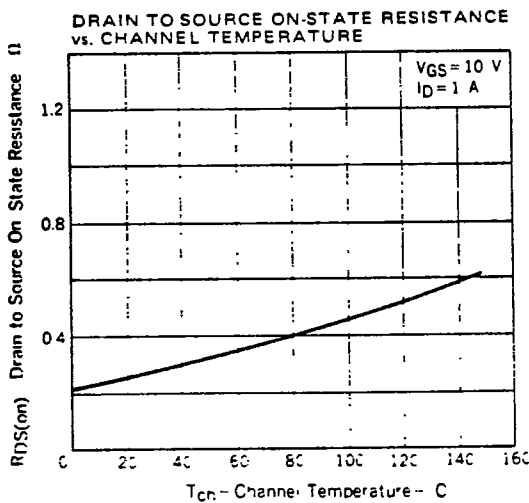
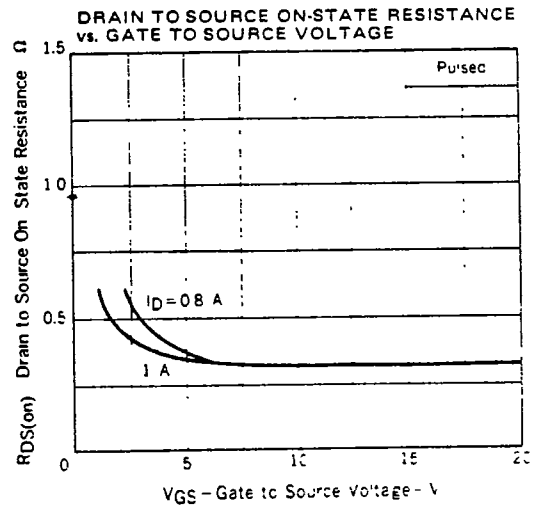
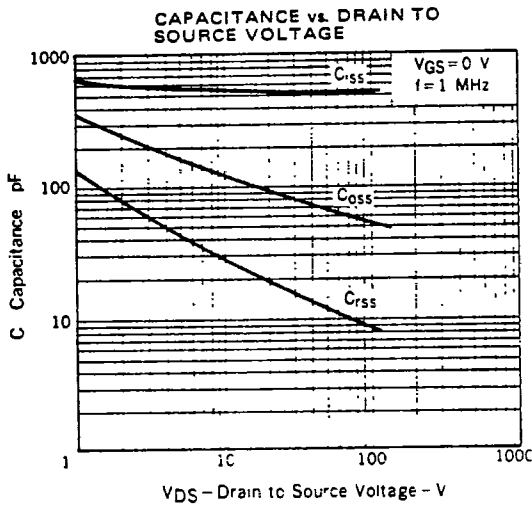
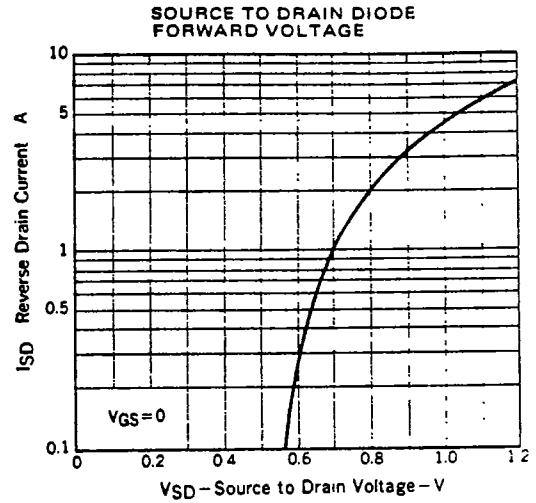
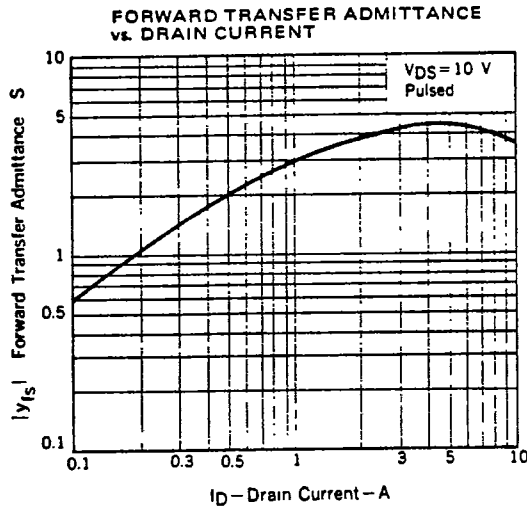
\*\*  $T_c = 25^\circ\text{C}$

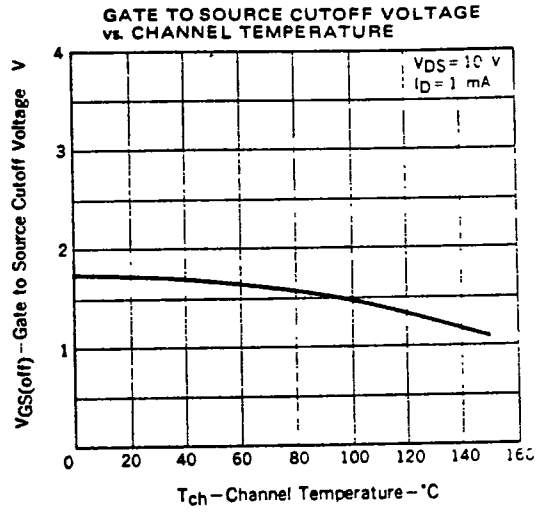
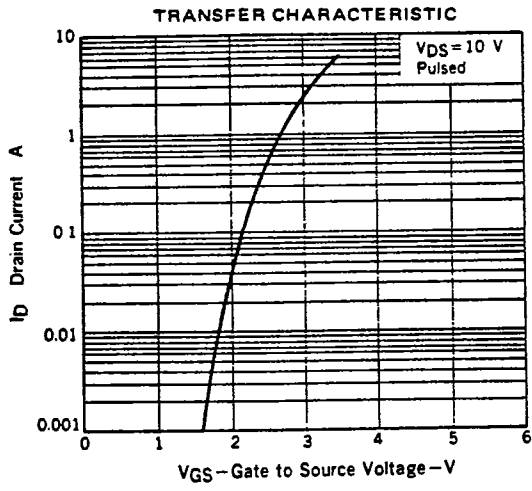
### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain Leakage Current	$I_{DSS}$			10	$\mu\text{A}$	$V_{DS} = 80$ V, $V_{GS} = 0$
Gate to Source Leakage Current	$I_{GSS}$			±100	nA	$V_{GS} = \pm 15$ V, $V_{DS} = 0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	0.8		3.0	V	$V_{DS} = 10$ V, $I_D = 1$ mA
Forward Transfer Admittance	$ y_{fs} $	1.0			S	$V_{DS} = 10$ V, $I_D = 1$ A
Drain to Source On-State Resistance	$R_{DS(on)}$		0.3	0.45	$\Omega$	$V_{GS} = 10$ V, $I_D = 1$ A
Drain to Source On-State Resistance	$R_{DS(on)}$		0.35	0.6	$\Omega$	$V_{GS} = 4$ V, $I_D = 0.8$ A
Input Capacitance	$C_{iss}$		500		pF	$V_{DS} = 10$ V, $V_{GS} = 0$ , $f = 1$ MHz
Output Capacitance	$C_{oss}$		120		pF	
Reverse Transfer Capacitance	$C_{rss}$		30		pF	
Turn-On Delay Time	$t_{d(on)}$		10		ns	$I_D = 1$ A, $V_{CC} = 50$ V $V_{GS(on)} = 10$ V $R_L = 50 \Omega$ $R_{ip} = 10 \Omega$
Rise Time	$t_r$		20		ns	
Turn-Off Delay Time	$t_{d(off)}$		80		ns	
Fall Time	$t_f$		20		ns	

TURN-ON AND TURN-OFF TIME TEST CIRCUIT







4