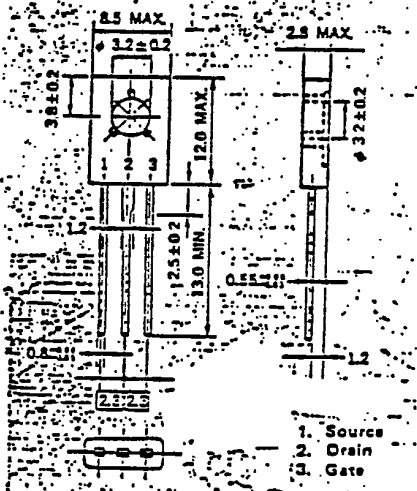


**FAST SWITCHING  
N-CHANNEL SILICON POWER MOS FET**

PACKAGE DIMENSIONS (Unit: mm)



**Features**

- Suitable for switching power supplies, actuator controls and pulse circuits
- 4V Gate Drive — Logic level —
- Low RDS(on)
- No second breakdown

**Absolute Maximum Ratings (Ta=25°C)**

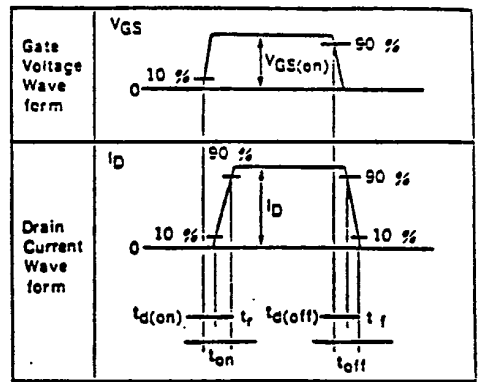
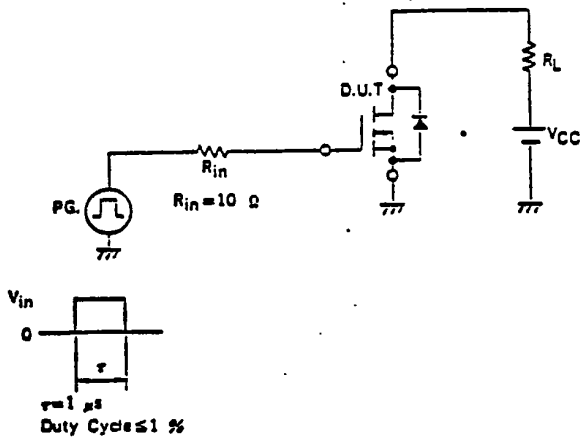
Drain to Source Voltage	V <sub>DSS</sub>	30V
Gate to Source Voltage	V <sub>GSS</sub>	± 20V
Continuous Drain Current	I <sub>D(DC)</sub>	± 2.0A
Pulse Drain Current	I <sub>D(pulse)</sub>	± 8.0A
Total Power Dissipation	PT	1.3W
Total Power Dissipation	PT**	15W
Channel Temperature	T <sub>ch</sub>	150 °C
Storage Temperature	T <sub>stg</sub>	-55 to +150 °C

\* PW ≤ 100 μs, Duty Cycles ≤ 2 %  
\*\* Tc = 25 °C

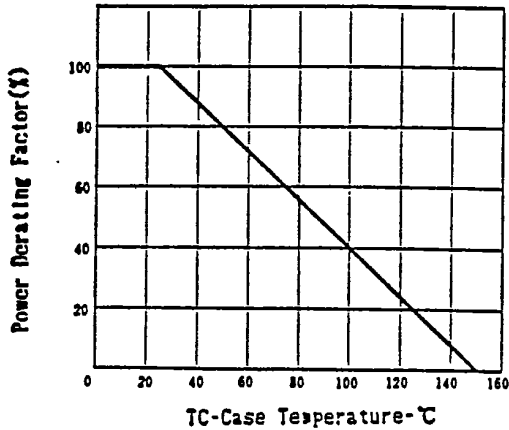
**Electrical Characteristics (Ta=25 °C)**

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	I <sub>DSS</sub>			10	μA	V <sub>DS</sub> =30 V, V <sub>GS</sub> =0
Gate to Source Leakage Current	I <sub>GSS</sub>			±100	nA	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0
Gate to Source Cutoff Voltage	V <sub>GS(off)</sub>	1.0		2.5	V	V <sub>DS</sub> =10V, I <sub>D</sub> =1.0mA
Forward Transfer Admittance	y <sub>fs</sub>	1.0			S	V <sub>DS</sub> =10V, I <sub>D</sub> =1.0A
Drain To Source On-State Resistance	R <sub>DS(on)</sub>			0.35	Ω	V <sub>GS</sub> =10V, I <sub>D</sub> =1.0A
Drain to Source On-State Resistance	R <sub>DS(on)</sub>			0.50	Ω	V <sub>GS</sub> =4.0V I <sub>D</sub> =1.0A
Input Capacitance	C <sub>iss</sub>		270		pF	V <sub>DS</sub> = 10V
Output Capacitance	C <sub>oss</sub>		150		pF	V <sub>GS</sub> =0
Reverse Transfer Capacitance	C <sub>rss</sub>		70		pF	f=1.0MHz
Turn-On Delay Time	t <sub>d(on)</sub>		45		ns	I <sub>D</sub> =1.0A,
Rise Time	t <sub>r</sub>		40		ns	V <sub>GS(on)</sub> = 10V
Turn-Off Delay Time	t <sub>d(off)</sub>		450		ns	V <sub>cc</sub> =15V,
Fall Time	t <sub>f</sub>		110		ns	R <sub>L</sub> =15 Ω

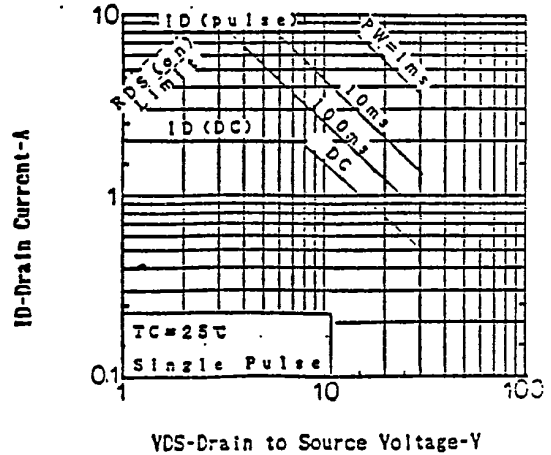
TURN-ON AND TURN-OFF TIME TEST CIRCUIT



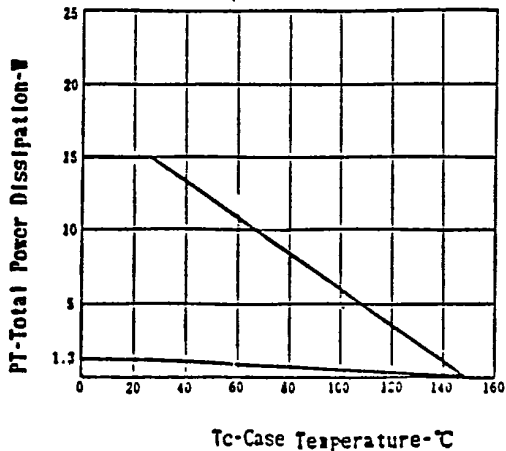
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



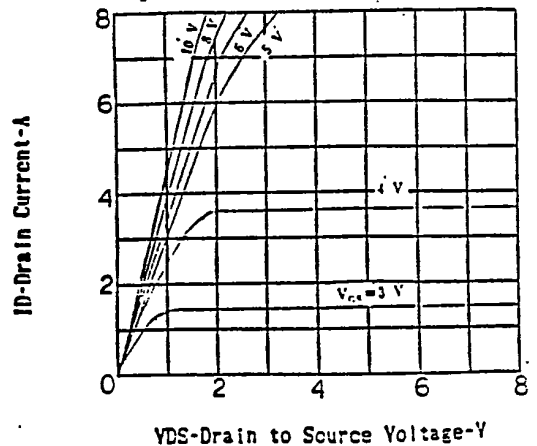
FORWARD BIAS SAFE OPERATING AREA



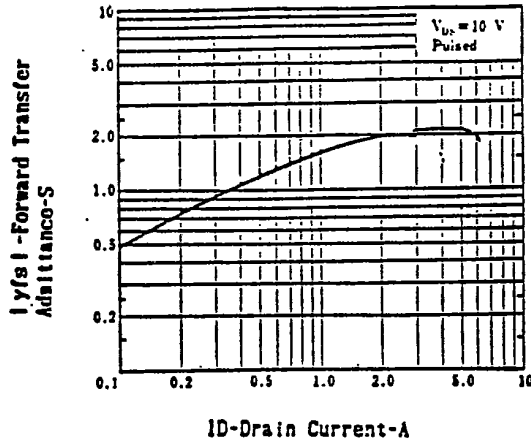
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



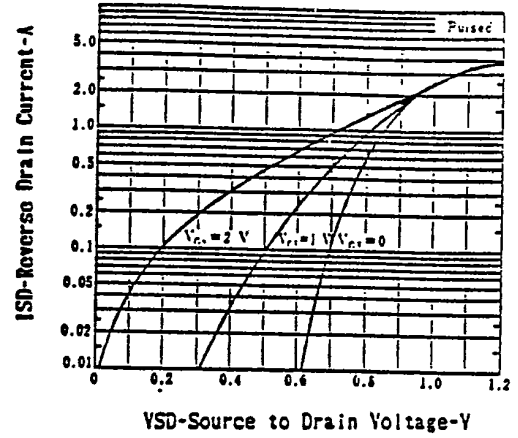
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



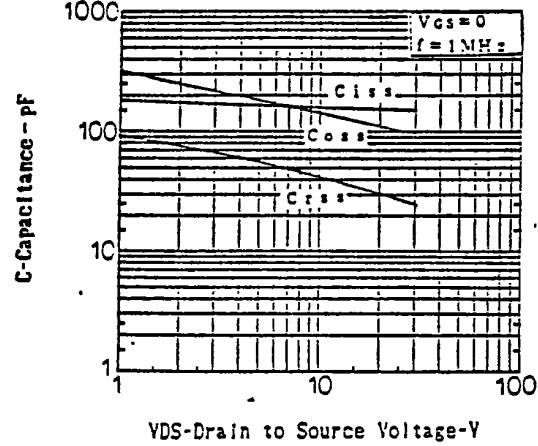
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



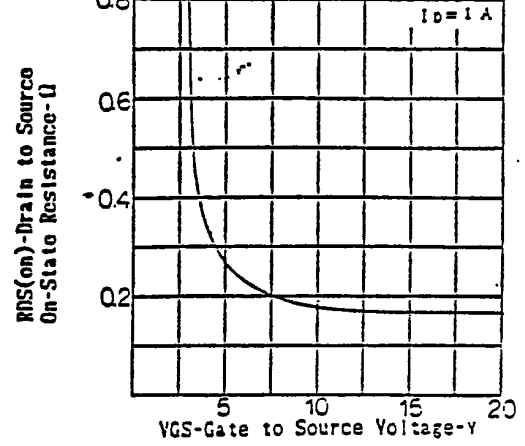
SOURCE TO DRAIN DIODE FORWARD VOLTAGE



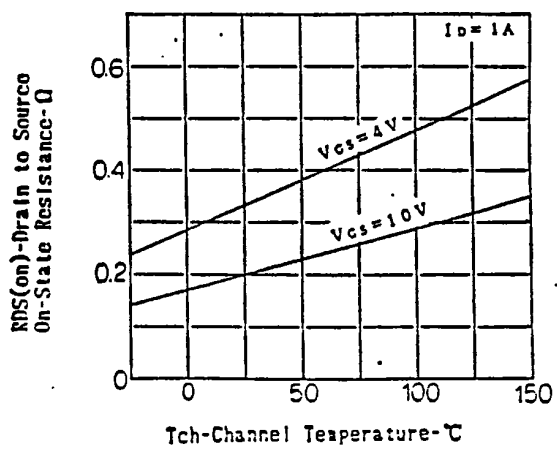
CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT

