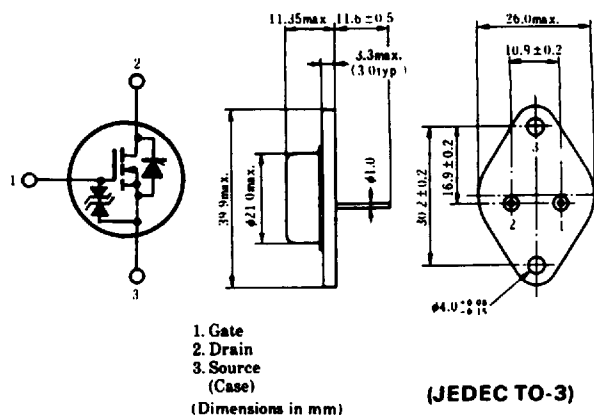


SILICON N-CHANNEL MOS FET

**HIGH SPEED POWER SWITCHING,
HIGH FREQUENCY POWER AMPLIFIER**

■ FEATURES

- High Speed Switching.
- High Cutoff Frequency.
- Enhancement-Mode.
- Suitable for Switching Regulator, DC-DC Converter, RF Amplifiers, and Ultrasonic Power Oscillators.

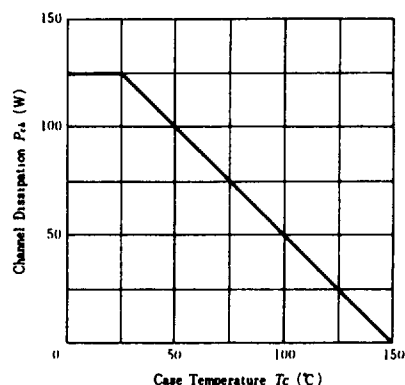


■ ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	200	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current	I_D	8	A
Body-Drain Diode Reverse Drain Current	I_{DR}	8	A
Channel Dissipation	P_{ch}^*	125	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-65 \sim +150$	$^\circ\text{C}$

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

POWER VS. TEMPERATURE DERATING

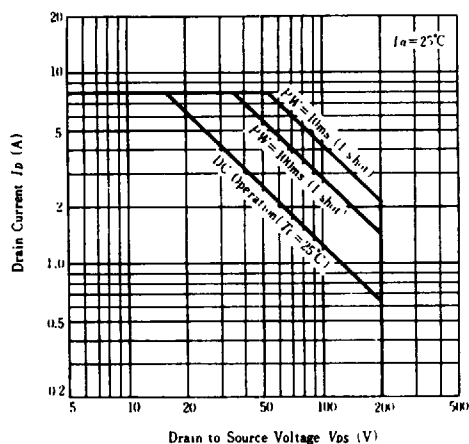


■ ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

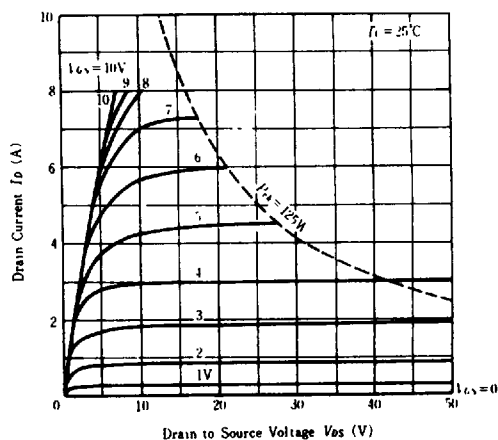
Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DS}$	$I_D=10\text{mA}$, $V_{GS}=0$	200	—	—	V
Gate-Source Breakdown Voltage	$V_{(BR)GS}$	$I_G=\pm 100\mu\text{A}$, $V_{DS}=0$	± 20	—	—	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=160\text{V}$, $V_{GS}=0$	—	—	3.0	mA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D=100\text{mA}$, $V_{DS}=10\text{V}$	0.55	—	3.0	V
Static Drain-Source On State Resistance	$R_{DS(on)}$	$I_D=4\text{A}$, $V_{GS}=15\text{V}^*$	—	1.0	1.5	Ω
Drain-Source Saturation Voltage	$V_{DS(on)}$	$I_D=4\text{A}$, $V_{GS}=15\text{V}^*$	—	—	6.0	V
Forward Transfer Admittance	$ y_f $	$I_D=3\text{A}$, $V_{DS}=10\text{V}^*$	0.7	—	1.4	S
Input Capacitance	C_{iss}	$V_{GS}=-5\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$	—	700	—	pF
Output Capacitance	C_{oss}		—	400	—	pF
Turn-on Time	t_{on}	$I_D=2\text{A}$, $V_{GS}=15\text{V}$, $R_L=15\Omega$	—	60	—	ns
Turn-off Time	t_{off}		—	200	—	ns

*Pulse Test

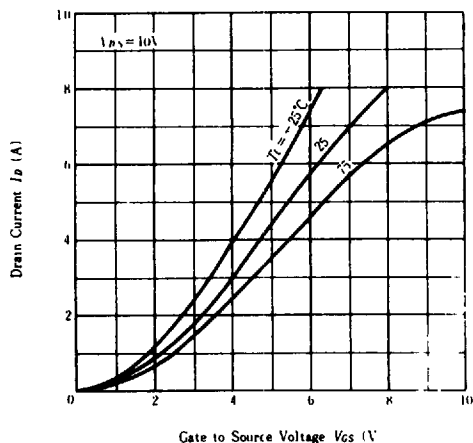
MAXIMUM SAFE OPERATION AREA



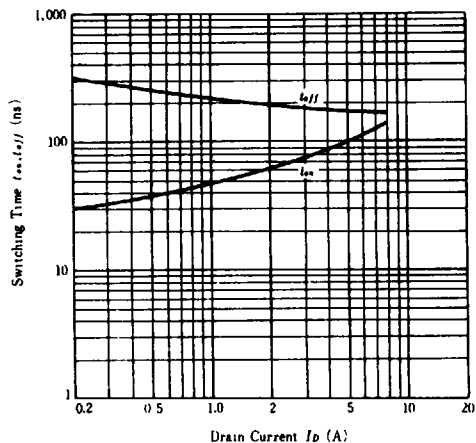
TYPICAL OUTPUT CHARACTERISTICS



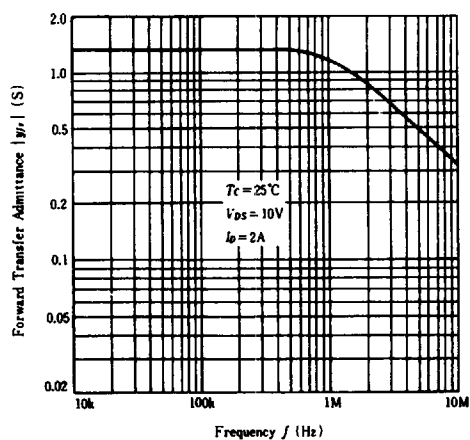
TYPICAL TRANSFER CHARACTERISTICS



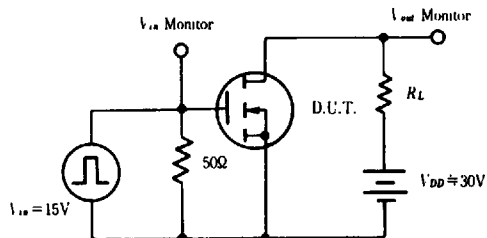
SWITCHING TIME VS. DRAIN CURRENT



FORWARD TRANSFER ADMITTANCE VS. FREQUENCY



SWITCHING TIME TEST CIRCUIT



WAVEFORMS

