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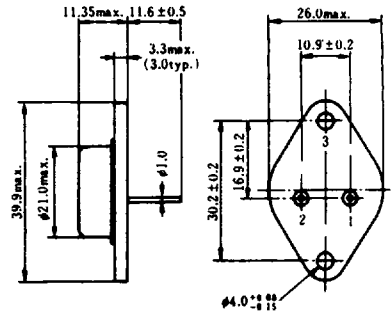
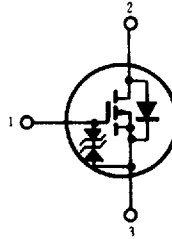
HITACHI/(OPTOELECTRONICS)

SILICON P-CHANNEL MOS FET

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

■ FEATURES

- High Speed Switching.
- High Cutoff Frequency. ($f_c=1\text{MHz}$)
- Enhancement-Mode.
- Suitable for Switching Regulator, DC-DC Converter, RF Amplifiers, and Ultrasonic Power Oscillators.



1. Gate
2. Drain
3. Source (Case)

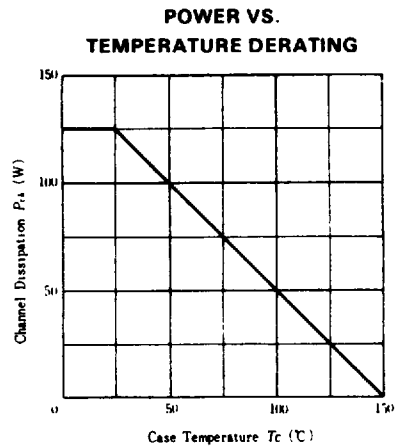
(JEDEC TO-3)

(Dimensions in mm)

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

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 ~ +150	$^\circ\text{C}$

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

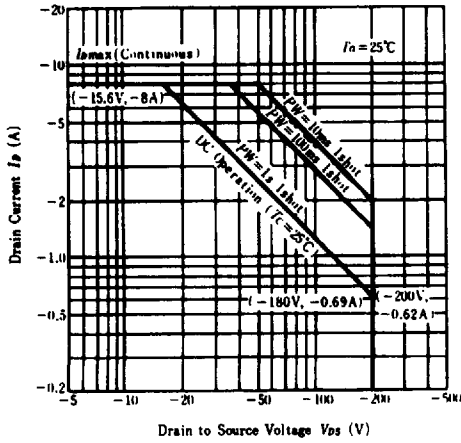


■ ELECTRICAL CHARACTERISTICS ($T_c=25^\circ\text{C}$)

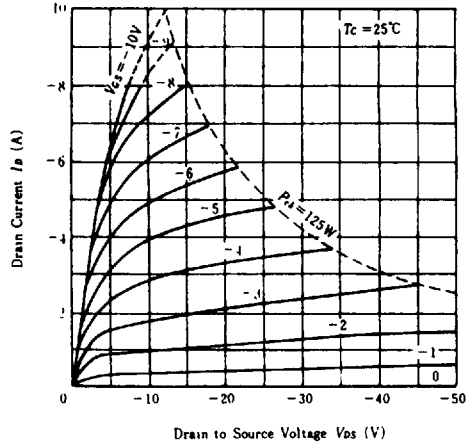
Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DS}$	$I_D=-10\text{mA}$, $V_{GS}=0$	-200	—	—	V
Gate-Source Breakdown Voltage	$V_{(BR)GS}$	$I_G=\pm 100\mu\text{A}$, $V_{DS}=0$	± 20	—	—	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-160\text{V}$, $V_{GS}=0$	—	—	-3.0	mA
Gate-Source Cutoff Voltage	V_{GSOFF}	$I_D=-100\text{mA}$, $V_{DS}=-10\text{V}$	-0.55	—	-3.0	V
Static Drain-Source on State Resistance	R_{DSON}	$I_D=-4\text{A}$, $V_{GS}=-15\text{V}$ *	—	1.0	1.5	Ω
Drain-Source Saturation Voltage	V_{DSON}	$I_D=-4\text{A}$, $V_{GS}=-15\text{V}$ *	—	-4.0	-6.0	V
Forward Transfer Admittance	$ y_{fs} $	$I_D=-3\text{A}$, $V_{DS}=-10\text{V}$ *	0.7	1.0	1.4	S
Input Capacitance	C_{iss}	$V_{GS}=5\text{V}$, $V_{DS}=-10\text{V}$, $f=1\text{MHz}$	—	1000	—	pF
Output Capacitance	C_{oss}		—	470	—	pF
Reverse Transfer Capacitance	C_{rss}	$V_{GS}=5\text{V}$, $f=1\text{MHz}$	—	60	—	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

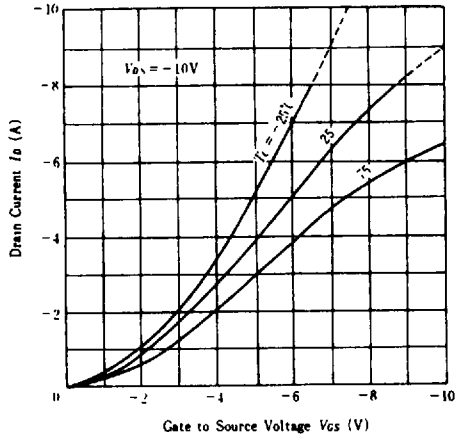
MAXIMUM SAFE OPERATION AREA



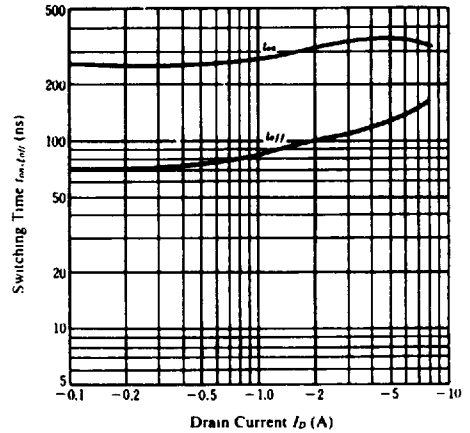
TYPICAL OUTPUT CHARACTERISTICS



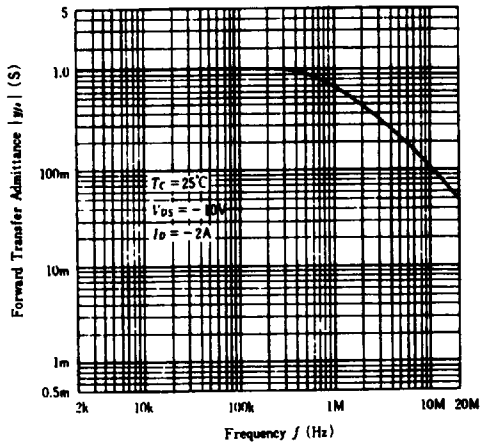
TYPICAL TRANSFER CHARACTERISTICS



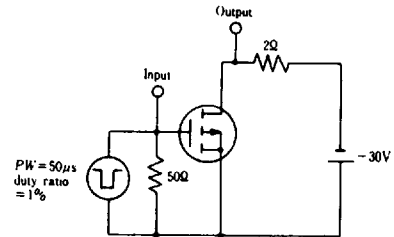
SWITCHING TIME VS. DRAIN CURRENT



FORWARD TRANSFER ADMITTANCE VS. FREQUENCY



SWITCHING TIME TEST CIRCUIT



WAVEFORMS

