

2SK259H, 2SK260H

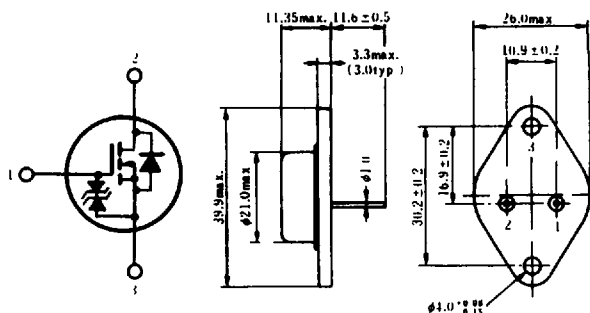
SILICON N-CHANNEL MOS FET

HITACHI/(OPTOELECTRONICS)

HIGH SPEED POWER SWITCHING, HIGH FREQUENCY POWER AMPLIFIER

■ FEATURES

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



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

(JEDEC TO-3)

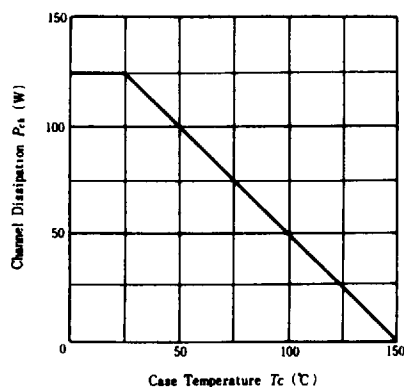
(Dimensions in mm)

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

Item	Symbol	Rating		Unit
		2SK259(Ⓜ)	2SK260(Ⓜ)	
Drain-Source Voltage	V_{DS}	350	400	V
Gate-Source Voltage	V_{GS}	± 20		V
Drain Current	I_D	5		A
Drain Peak Current	$I_{D(peak)}$	10		A
Body-Drain Diode Reverse Drain Current	I_{DR}	5		A
Channel Dissipation	P_{ch}^*	125		W
Channel Temperature	T_{ch}	150		°C
Storage Temperature	T_{stg}	-65 ~ +150		°C

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

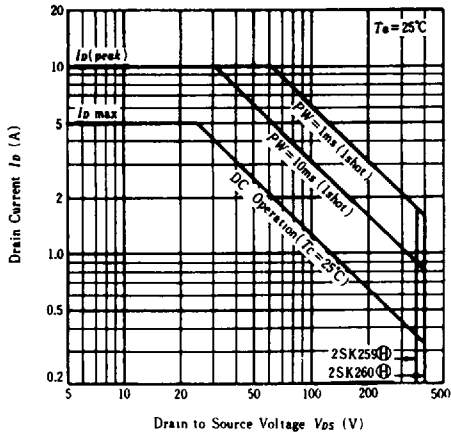
POWER VS. TEMPERATURE DERATING



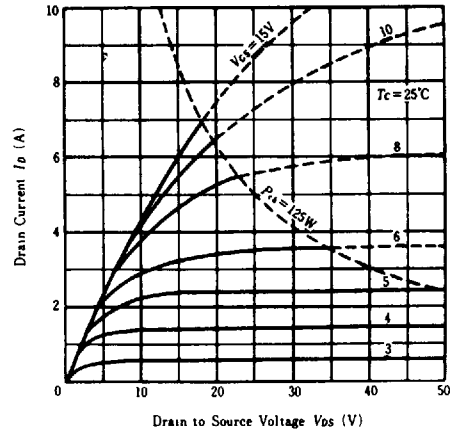
■ ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	2SK259④	$I_D=10\text{mA}, V_{GS}=0$	350	—	—	V
	2SK260④		400	—	—	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	2SK259④	$V_{DS}=280\text{V}, V_{GS}=0$	—	—	1.0	mA
	2SK260④	$V_{DS}=320\text{V}, V_{GS}=0$				
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D=10\text{mA}, V_{DS}=10\text{V}$	0.4	—	3.0	V
Static Drain-Source On State Resistance	$R_{DS(on)}$	$I_D=3\text{A}, V_{GS}=15\text{V}^*$	—	2.5	3.0	Ω
Drain-Source Saturation Voltage	$V_{DS(sat)}$	$I_D=3\text{A}, V_{GS}=15\text{V}^*$	—	7.5	9.5	V
Forward Transfer Admittance	$ y_f $	$I_D=3\text{A}, V_{DS}=20\text{V}^*$	0.6	1.0	—	S
Input Capacitance	C_{iss}	$V_{GS}=-5\text{V}, V_{DS}=10\text{V}, f=1\text{MHz}$	—	800	—	pF
Output Capacitance	C_{oss}		—	350	—	pF
Reverse Transfer Capacitance	C_{rss}	$V_{GD}=-5\text{V}, f=1\text{MHz}$	—	15	—	pF
Turn-on Time	t_{on}	$I_D=2\text{A}, V_{GS}=15\text{V}$	—	25	—	ns
Turn-off Time	t_{off}		—	140	—	ns

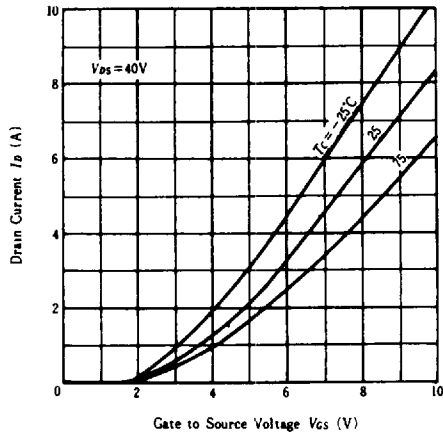
MAXIMUM SAFE OPERATION AREA



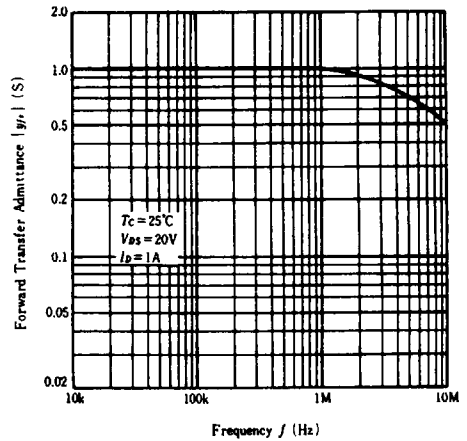
TYPICAL OUTPUT CHARACTERISTICS



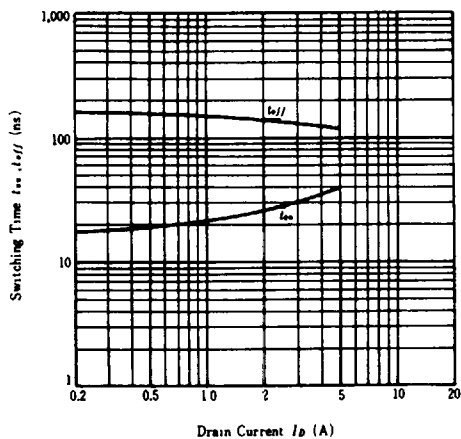
TYPICAL TRANSFER CHARACTERISTICS



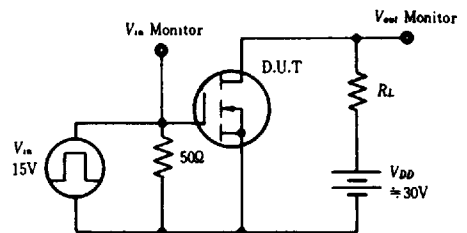
FORWARD TRANSFER ADMITTANCE VS. FREQUENCY



SWITCHING TIME VS DRAIN CURRENT



SWITCHING TIME TEST CIRCUIT



WAVEFORMS

