

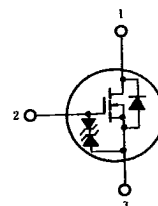
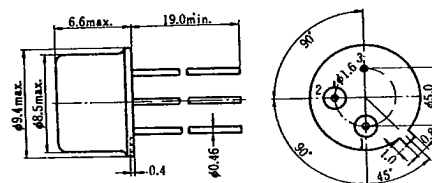
2SK196H

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.



1. Drain
2. Gate
3. Source
(Case)
(Dimensions in mm)

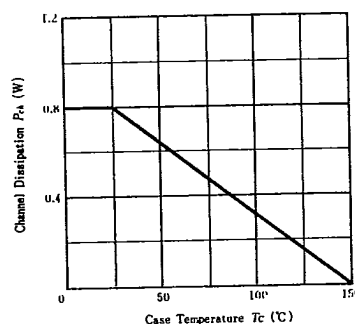
(JEDEC TO-39)

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

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	160	V
Gate-Source Voltage	V_{GS}	± 14	V
Drain Current	I_D	500	mA
Body-Drain Diode Reverse Drain Current	I_{DR}	500	mA
Channel Dissipation	P_{ch}	0.8	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

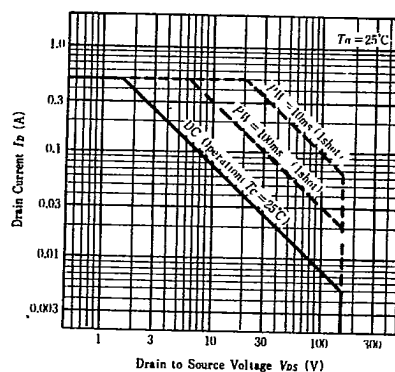


■ ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

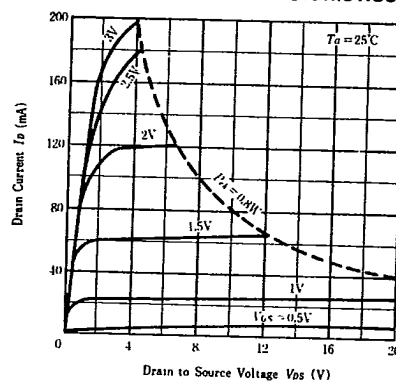
Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DS}$	$I_D=10\text{mA}$, $V_{GS}=0$	160	—	—	V
Gate-Source Breakdown Voltage	$V_{(BR)GS}$	$I_G=\pm 10\mu\text{A}$, $V_{DS}=0$	± 14	—	—	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=120\text{V}$, $V_{GS}=0$	—	—	2.0	mA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D=10\text{mA}$, $V_{DS}=10\text{V}$	0.2	—	2.0	V
Static Drain-Source on State Resistance	$R_{DS(on)}$	$I_D=200\text{mA}$, $V_{GS}=10\text{V}^*$	—	8	15	Ω
Drain-Source Saturation Voltage	$V_{DS(on)}$	$I_D=200\text{mA}$, $V_{GS}=10\text{V}^*$	—	—	3.0	V
Forward Transfer Admittance	$ y_{fs} $	$I_D=200\text{mA}$, $V_{DS}=10\text{V}^*$	50	—	—	mS
Input Capacitance	C_{iss}	$V_{DS}=10\text{V}$, $I_D=10\text{mA}$, $f=1\text{MHz}$	—	90	—	pF
Output Capacitance	C_{oss}	$V_{DS}=10\text{V}$, $I_D=10\text{mA}$, $f=1\text{MHz}$	—	60	—	pF
Turn-on Time	t_{on}	$V_{GS}=10\text{V}$, $I_D=20\text{mA}$	—	20	—	ns
Turn-off Time	t_{off}	$R_L=150\Omega$	—	30	—	ns

*Pulse Test

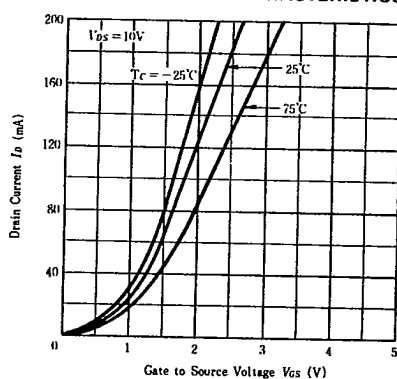
MAXIMUM SAFE OPERATION AREA



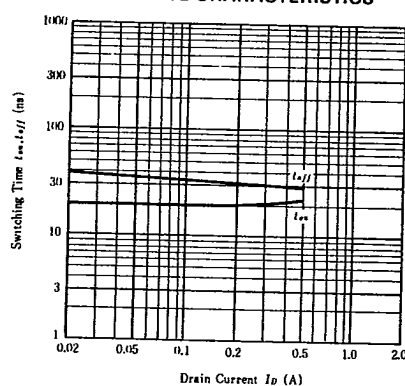
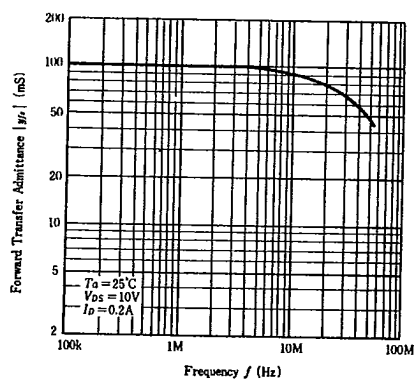
TYPICAL OUTPUT CHARACTERISTICS



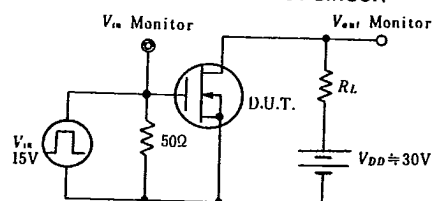
TYPICAL TRANSFER CHARACTERISTICS



SWITCHING CHARACTERISTICS

FORWARD TRANSFER ADMITTANCE
VS. FREQUENCY

SWITCHING TIME TEST CIRCUIT



WAVEFORMS

