HITACHI

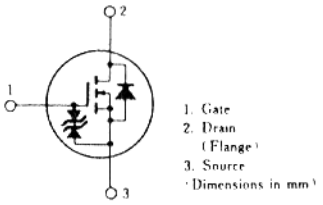
2SK1339

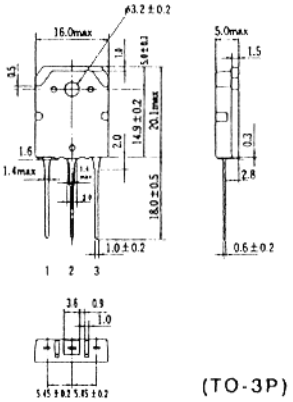
SILICON N-CHANNEL MOS FET

HIGH SPEED POWER SWITCHING

■ FEATURES

- Low On-Resistance
- High Speed Switching
- Low Drive Current
- No Secondary Breakdown
- Suitable for Switching Regulator and DC-DC Converter





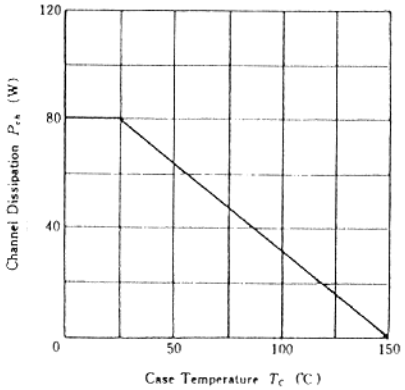
(TO-3P)

■ ABSOLUTE MAXIMUM RATINGS ($Ta = 25°C$)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	900	V
Gate-Source Voltage	V_{GSS}	±30	V
Drain Current	I_D	3	A
Drain Peak Current	$I_{D(pulse)}$*	7	A
Body-Drain Diode Reverse Drain Current	I_{DR}	3	A
Channel Dissipation	P_{ch}**	80	W
Channel Temperature	T_{ch}	150	°C
Storage Temperature	T_{stg}	−55 ~ +150	°C

*PW ≤ 10μs, duty cycle ≤ 1%
**Value at $Tc = 25°C$

POWER VS. TEMPERATURE DERATING



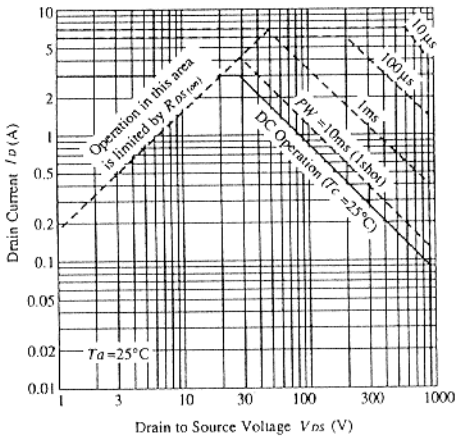
■ ELECTRICAL CHARACTERISTICS ($Ta = 25°C$)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 10mA$, $V_{GS} = 0$	900	—	—	V
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100\mu A$, $V_{DS} = 0$	±30	—	—	V
Gate-Source Leak Current	I_{GSS}	$V_{GS} = \pm 25V$, $V_{DS} = 0$	—	—	±10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 720V$, $V_{GS} = 0$	—	—	250	μA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D = 1mA$, $V_{DS} = 10V$	2.0	—	3.0	V
Static Drain-Source on State Resistance	$R_{DS(on)}$	$I_D = 1.5A$, $V_{GS} = 10V$*	—	5.0	7.0	Ω
Forward Transfer Admittance	$\|y_{fs}\|$	$I_D = 1.5A$, $V_{DS} = 20V$*	1.2	1.9	—	S
Input Capacitance	C_{iss}	$V_{DS} = 10V$, $V_{GS} = 0$, $f = 1MHz$	—	425	—	pF
Output Capacitance	C_{oss}		—	175	—	pF
Reverse Transfer Capacitance	C_{rss}		—	85	—	pF
Turn-on Delay Time	$t_{d(on)}$	$I_D = 2A$, $V_{GS} = 10V$, $R_L = 15\Omega$	—	10	—	ns
Rise Time	t_r		—	40	—	ns
Turn-off Delay Time	$t_{d(off)}$		—	50	—	ns
Fall Time	t_f		—	55	—	ns
Body-Drain Diode Forward Voltage	V_{DF}	$I_F = 3A$, $V_{GS} = 0$	—	0.9	—	V
Body-Drain Diode Reverse Recovery Time	t_{rr}	$I_F = 3A$, $V_{GS} = 0$, $di_F/dt = 100A/\mu s$	—	850	—	ns

*Pulse Test

■ See characteristic curves of 2SK1338

MAXIMUM SAFE OPERATION AREA



NORMALIZED TRANSIENT THERMAL IMPEDANCE VS. PULSE WIDTH