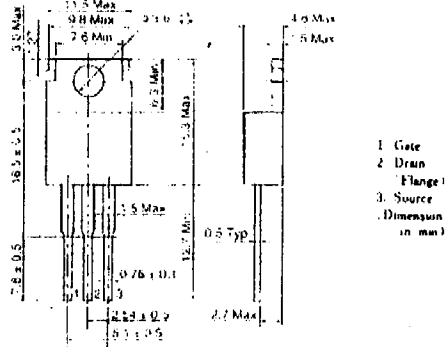
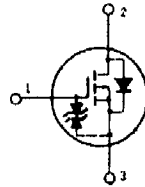


2SJ173

SILICON P-CHANNEL MOS FET
HIGH SPEED POWER SWITCHING

■ FEATURES

- Low On-Resistance
- High Speed Switching
- Low Drive Current
- 4 V Gate Drive Device
 - Can be driven from 5 V source
- Suitable for Motor Drive, DC-DC Converter, Power Switch and Solenoid Drive



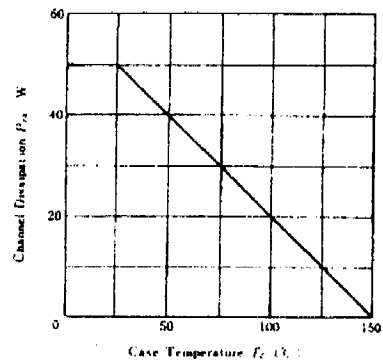
(JEDEC TO-220AB)

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

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current	I_D	15	A
Drain Peak Current	$I_{D,peak}^*$	60	A
Body-Drain Diode Reverse Current	I_{BR}	15	A
Channel Dissipation	P_{ch}^{**}	50	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 - +150	$^\circ\text{C}$

* PW ≤ 10 μs, duty cycle ≤ 1%
** 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	$V_{DS(BR)}$	$I_D = -10\text{mA}, V_{GS} = 0$	60			V
Gate-Source Breakdown Voltage	$V_{GS(BR)}$	$I_D = -100\mu\text{A}, V_{DS} = 0$	±20			V
Gate-Source Leak Current	I_{GS}	$V_{GS} = \pm 16\text{V}, V_{DS} = 0$			±10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -50\text{V}, V_{GS} = 0$			250	μA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D = -1\text{mA}, V_{DS} = -10\text{V}$	1.0		2.0	V
Static Drain-Source on State Resistance	$R_{DS(on)}$	$I_D = -8\text{A}, V_{GS} = -10\text{V}^*$		0.09	0.11	Ω
		$I_D = -8\text{A}, V_{GS} = -4\text{V}^*$		0.13	0.17	
Forward Transfer Admittance	y_{fs}	$I_D = -8\text{A}, V_{DS} = -10\text{V}^*$	6.0	9.5		S
Input Capacitance	C_{iss}			1400		μF
Output Capacitance	C_{oss}	$V_{DS} = -10\text{V}, V_{GS} = 0, f = 1\text{MHz}$		720		μF
Reverse Transfer Capacitance	C_{rss}			220		μF
Turn-on Delay Time	t_{on}			15		ns
Rise Time	t_r			120		ns
Turn-off Delay Time	t_{off}	$I_D = -8\text{A}, V_{GS} = -10\text{V}, R_{\theta} = 3.75\Omega$		220		ns
Fall Time	t_f			160		ns
Body-Drain Diode Forward Voltage	V_{DF}	$I_D = -15\text{A}, V_{GS} = 0$		1.2		V
Body-Drain Diode Reverse Recovery Time	t_{rr}	$I_D = -15\text{A}, V_{GS} = 0, di/dt = 50\text{A}/\mu\text{s}$		230		ns

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

