LJ8N50P

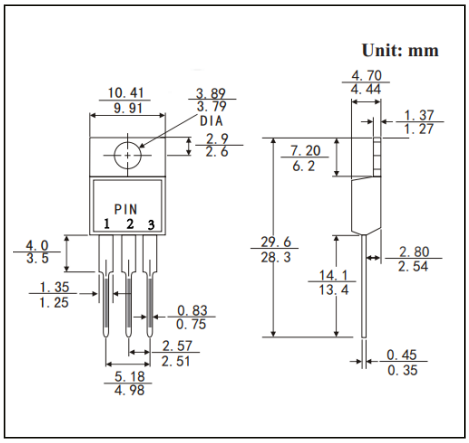
TO-220 Plastic-Encapsulate MOSFETS

FEATURE

- ●High Current Rating
- ●Lower RDS(on)
- ●Low Reverse Transfer
- ●Capacitance Fast Switching Capability
- ●Tighter VSD Specifications Avalanche Energy Specified
- ●N-Channel Powe r MOSFET

MECHANICAL DATA

- ●Case style:TO-220 molded plastic
- ●Mounting position:any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	500	V
Gate-Source Voltage	V_{GSS}	±30	
Continuous Drain Current	I_D	8	A
Pulsed Drain Current(note1)	I_{DM}	32	
Single Pulsed Avalanche Energy (note2)	E_{AS}	330	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	℃/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~+150	℃
Maximum lead temperure for soldering purposes , 1/8"from case for 5 seconds	T_L	260	

MOSFET ELECTRICAL CHARACTERISTICS T_A=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	500			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =500V, V_{GS} =0V			1	μA
Gate-body leakage curren (note3)	I_{GSS}	V_{DS} =0V, V_{GS} =±30V			±100	nA
On characteristics (note3)						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2.0	3.2	4.0	V
Static drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =4A		0.8	1.0	Ω
Dynamic characteristics (note 4)						
Input capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V,f =1MHz		795		pF
Output capacitance	C_{oss}			55		
Reverse transfer capacitance	C_{rss}			7		
Switching characteristics (note1,3 4)						
Total gate charge	Q_g	V_{DS} =400V,V_{GS} =10V,I_D =8A		15.5		nC
Gate-source charge	Q_{gs}			4.3		
Gate-drain charge	Q_{gd}			4.3		
Turn-on delay time	$t_{d(on)}$	V_{DD}=250V, V_{GS}=10V, R_G=25Ω, I_D =8A		40		ns
Turn-on rise time	t_r			15.5		
Turn-off delay time	$t_{d(off)}$			12		
Turn-off fall time	t_f			60		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note3)	V_{SD}	V_{GS} = 0V, I_S=8A			1.4	V
Maximum continuous drain-source diode forward current	I_S				8	A
Maximum pulsed drain-source diode forward current	I_{SM}				32	A

Notes :

1. Repetitive Rating : Pulse width limited by maximum junction temperature
2. L = 25mH, I_{AS} = 8A, V_{DD} = 50V, R_G = 25Ω, Starting T_J = 25°C
3. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
4. These parameters have no way to verify.

RATINGS AND CHARACTERISTIC CURVES

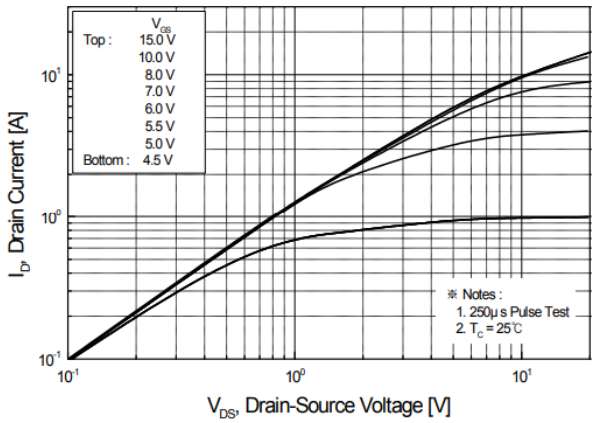


Figure 1. On-Region Characteristics

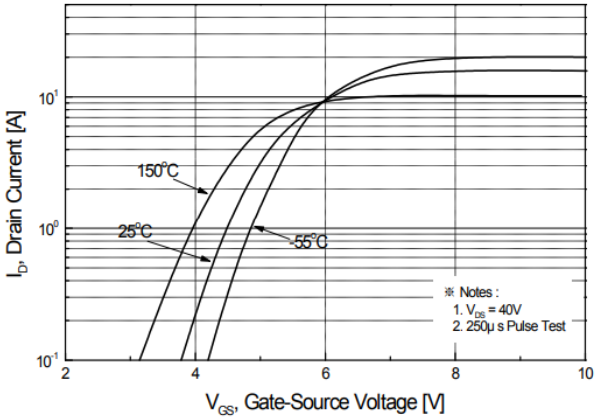


Figure 2. Transfer Characteristics

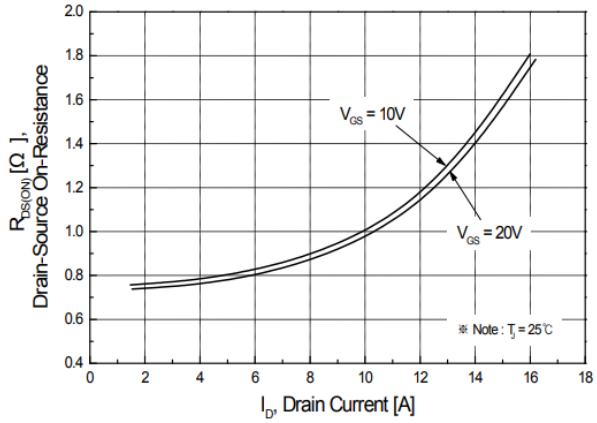


Figure 3. On-Resistance Variation vs Drain Current and Gate Voltage

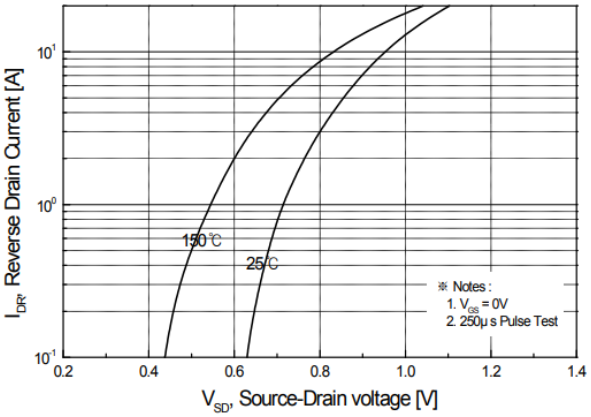


Figure 4. Body Diode Forward Voltage Variation with Source Current and Temperature

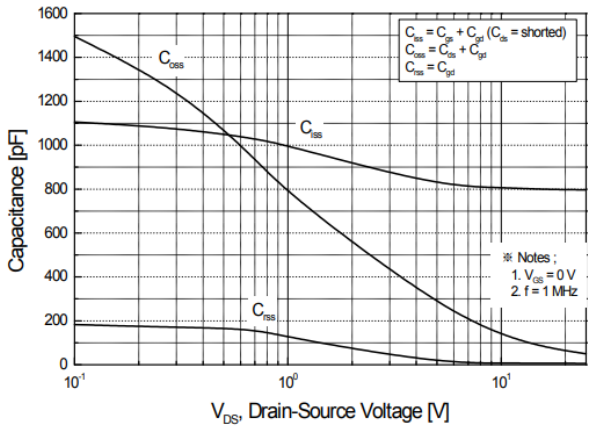


Figure 5. Capacitance Characteristics

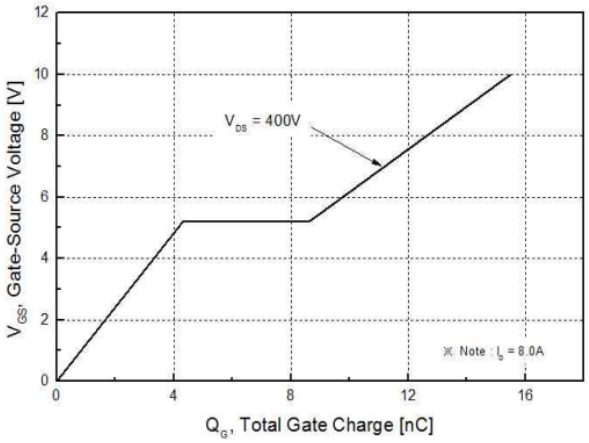


Figure 6. Gate Charge Characteristics

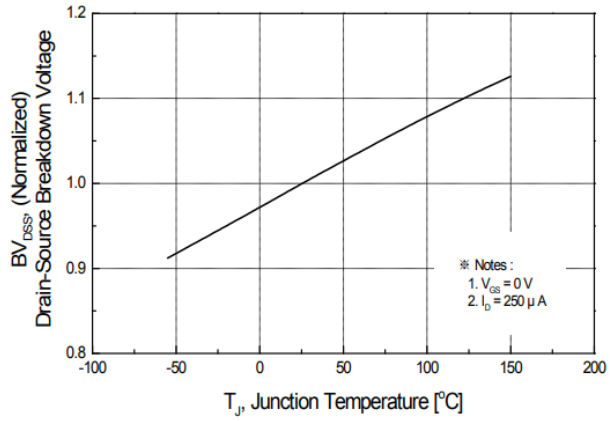


Figure 7. Breakdown Voltage Variation vs Temperature

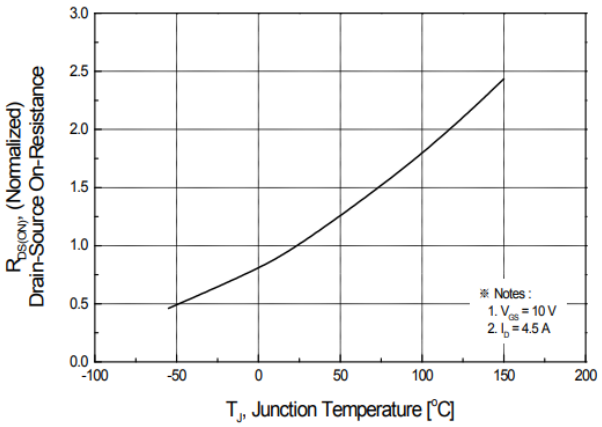


Figure 8. On-Resistance Variation vs Temperature

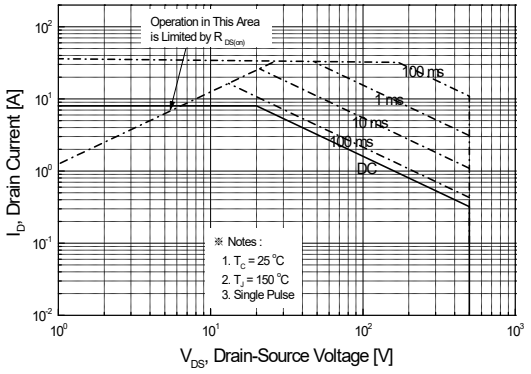


Figure 9. Maximum Safe Operating Area

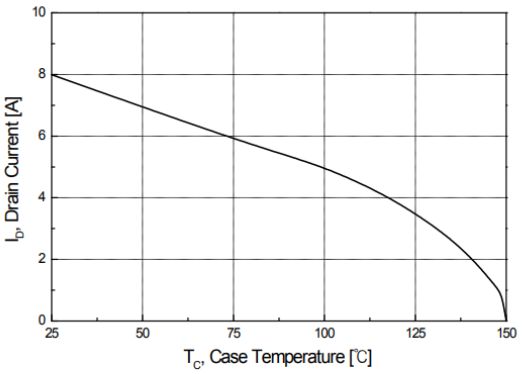


Figure 10. Maximum Drain Current vs Case Temperature

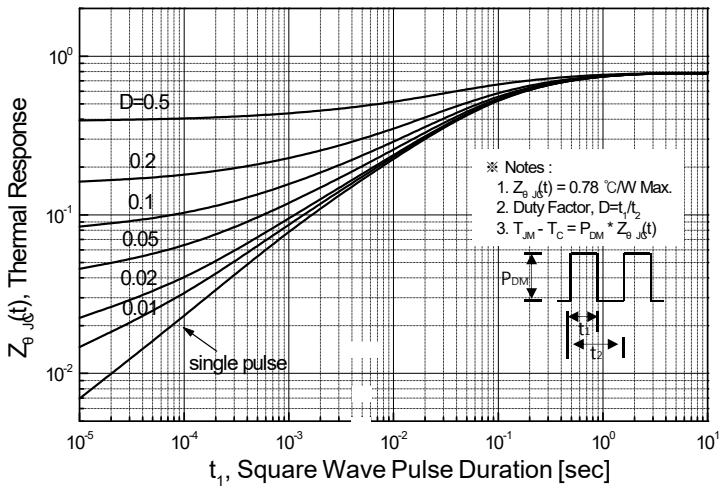
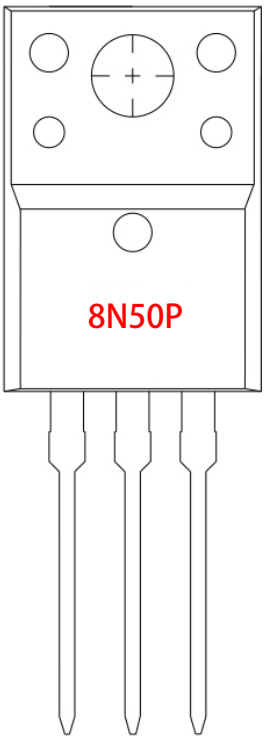


Figure 11. Transient Thermal Response Curve

Marking



Packing Information

Package	Tube (mm)	QTY/Tube (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	QTY/Carton (Kpcs)
TO-220	535*32.8*7	0.05	560*162*37	1.0	575*210*185	5.0