N TO-252

N-CHANNEL MOSFET in a TO-252 Plastic Package.

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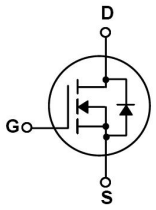
Low gate charge, low crss, fast switching, HF Product.

DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.



/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain Current	I_D(Tc=25)	100	A
Peak Drain Current	I_{DM}	380	A
Gate-Source Voltage	V_{GSS}	±20	V
Single Pulsed Avalanche Energy	E_{AS}	602	mJ
Avalanche Current	I_{AS}	38.9	A
Total Power Dissipation	P_D(Tc=25)	60	W
Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 150	℃
Thermal Resistance-Junction to Case	R JC	2.1	/W
Thermal Resistance-Junction to Ambient	R JA	62.5	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V V_{GS}=0V			1	μA
		V_{DS}=60V V_{GS}=0V T_J=125℃			10	μA
Gate-Body leakage current	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	2	2.6	4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V I_D=50A		5.9	7	m

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Diode Forward Voltage	V_{SD}	I_S=1A V_{GS}=0V		0.6	1.2	V
Input Capacitance	C_{iss}	V_{GS}=0V V_{DS}=25V, f=1.0MHz		4920		pF
Output Capacitance	C_{oss}			295		
Reverse Transfer Capacitance	C_{rss}			133		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V, f=1MHz		1.2		Ω
Total Gate Charge	Qg(10V)	V_{GS}=10V V_{DS}=30V I_D=50A		53	75	nC
Total Gate Charge	Q_g(4.5V)			22	31	
Gate Source Charge	Q_{gs}			17		
Gate Drain Charge	Q_{gd}			5		
Turn-On DelayTime	$t_{D(on)}$	V_{DD}=30V I_D=50A V_{GS}=10V R_G=2.5Ω		18		ns
Turn-On Rise Time	tr			20		
Turn-Off DelayTime	t_D(off)			33		
Turn-Off Fall Time	tf			4		

A. The value of R_{qJA} is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C. The Power dissipation PDSM is based on R_{qJA} and the maximum

qJA

/ Electrical Characteristic Curve

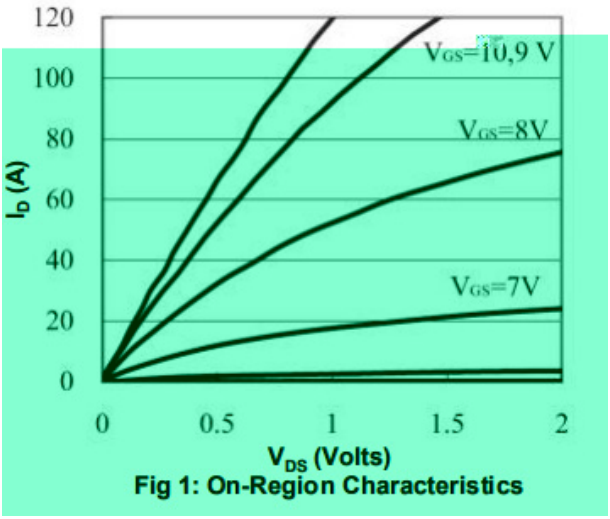


Fig 1: On-Region Characteristics

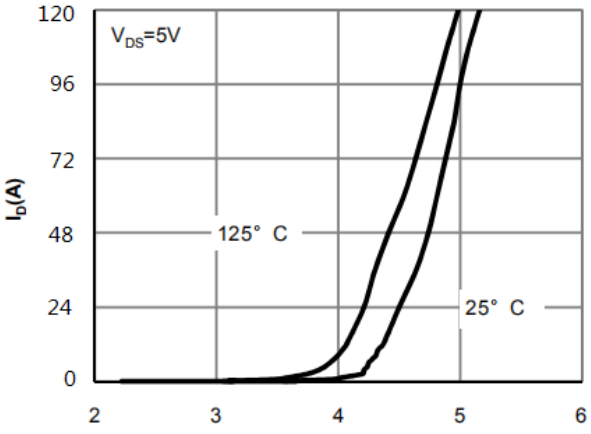


Figure 2: Transfer Characteristics

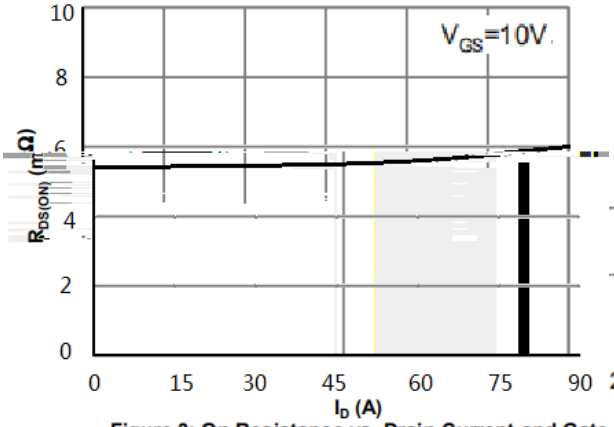


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

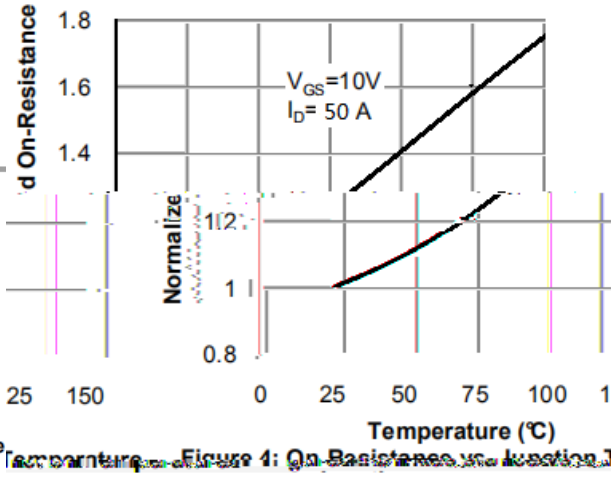
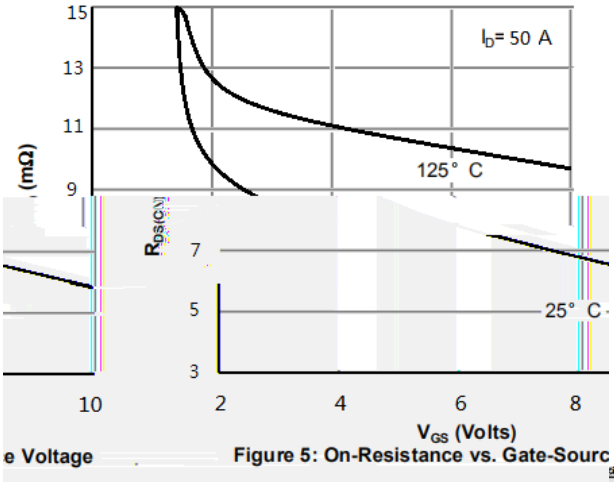


Figure 4: On-Resistance vs. Junction Temperature



e Voltage

Figure 5: On-Resistance vs. Gate-Source

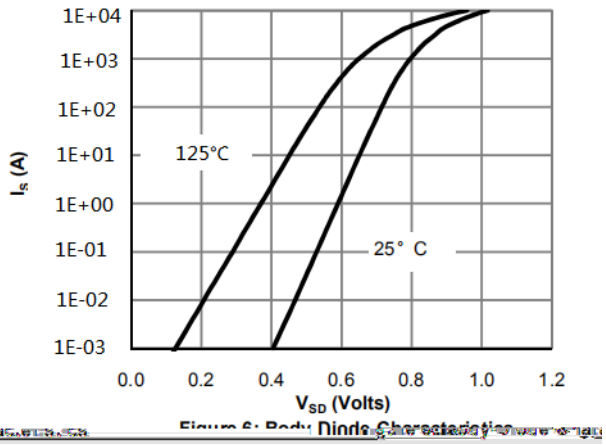


Figure 6: Body Diode Characteristics

/ Electrical Characteristic Curve

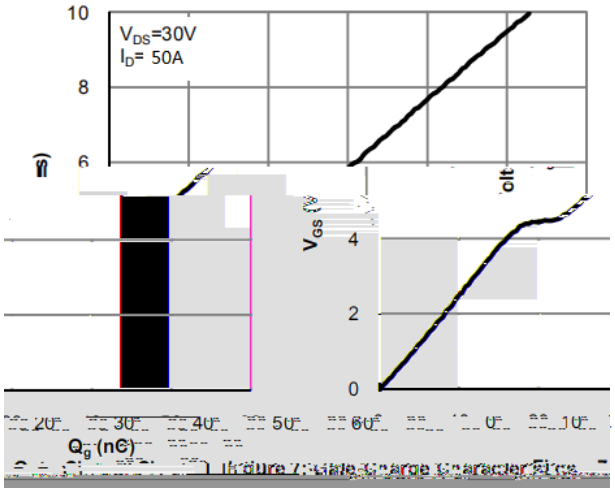


Figure 7: Gate Charge Characteristics

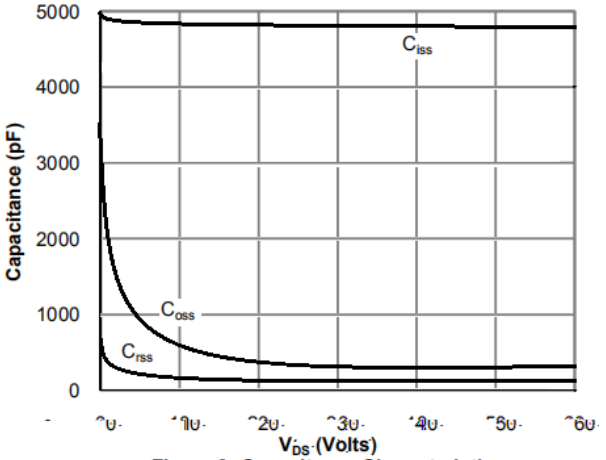


Figure 8: Capacitance Characteristics

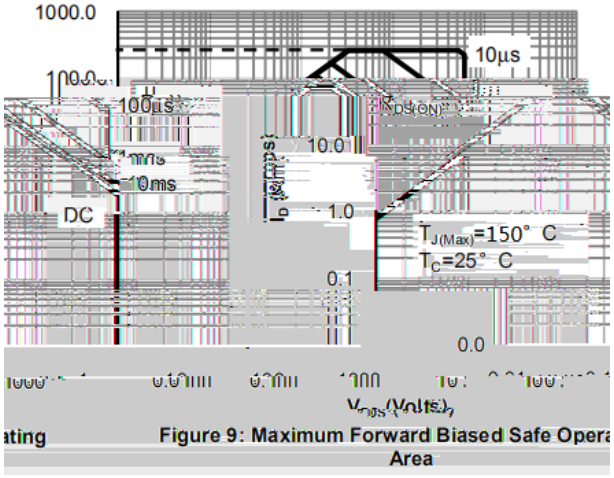


Figure 9: Maximum Forward Biased Safe Operating Area

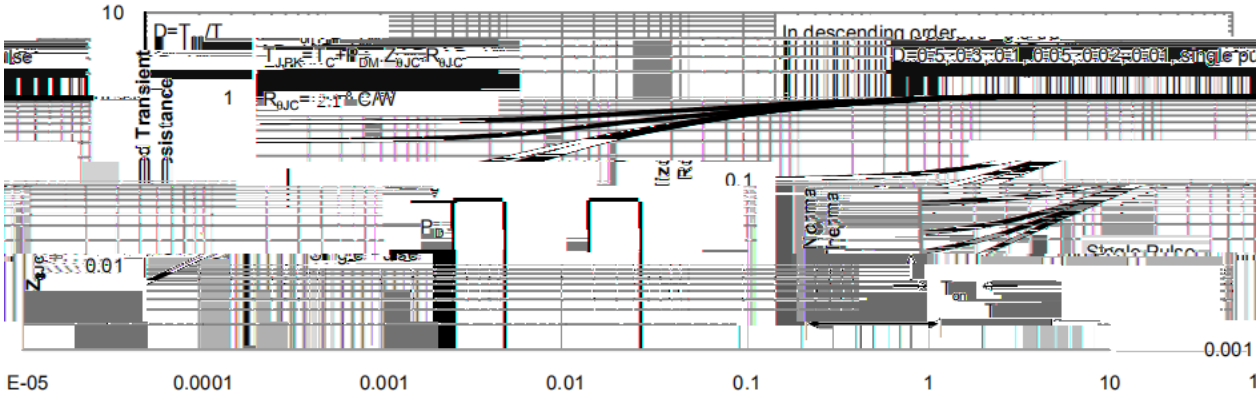
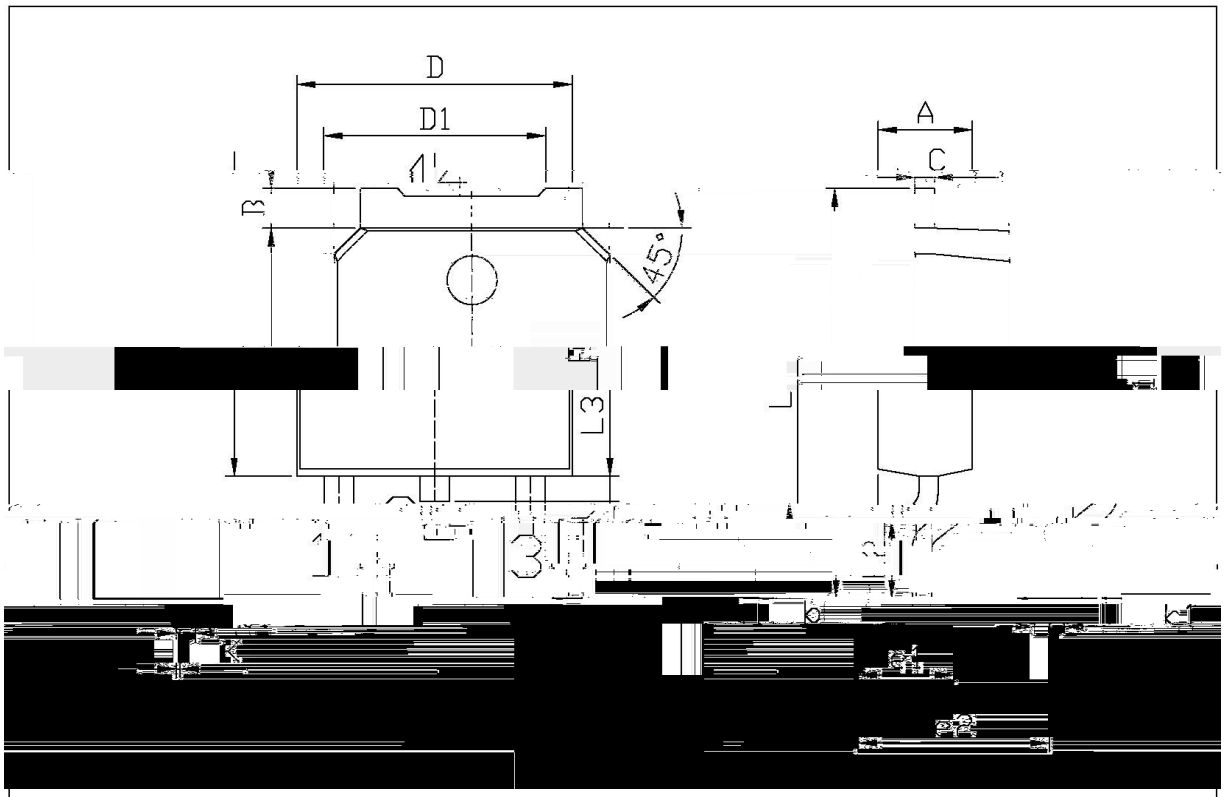


Figure 10 : Normalized Maximum Transient Thermal Impedance

/ Package Dimensions

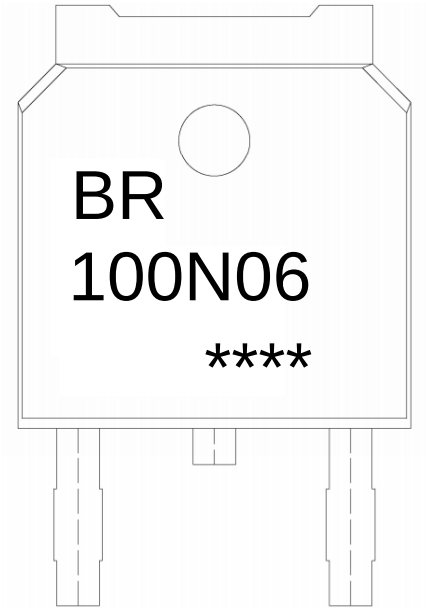


单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max.		Min	Max
5.95	6.25		A	2.20	2.40
2.24	2.34		B	0.95	1.25
			b	0.70	
L1	9.85	10.35	b1	0.45	0.55
	0.45				
0.60	0.90		D	6.45	6.75
			J1		

TO-252

/ Marking Instructions



BR

100N06

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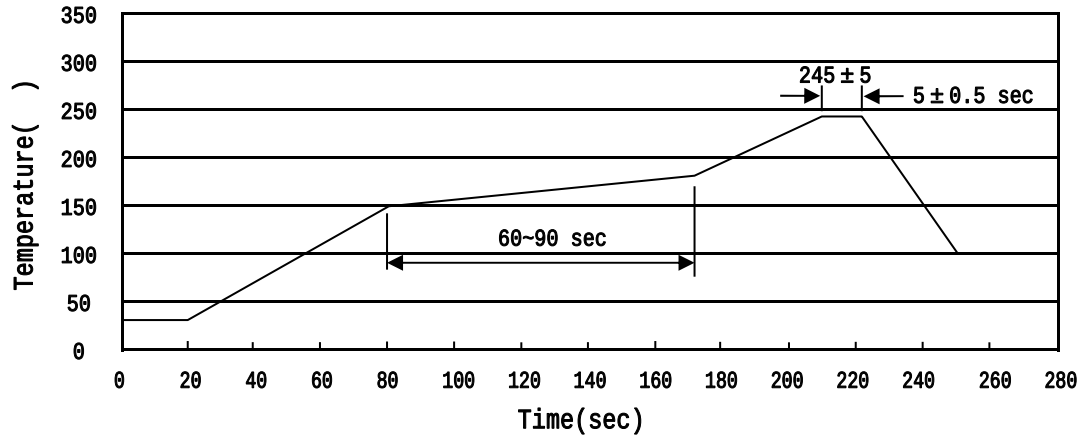
Note:

BR:	Company Code
100N06:	Product Type Code
****:	Lot No. Code, code change with Lot No

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

1	150 180 60 90sec;	1.Preheating:150~180 , Time:60~90sec.
2	245±5 5±0.5sec;	2.Peak Temp.:245±5 , Duration:5±0.5sec.
3	2 10 /sec.	3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5	10±1 sec.	Temp.:260±5℃	Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension		(unit mm³)
TO-252	2,500	2	5,000	6	30,000	13 ×16	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension		(unit mm³)
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices