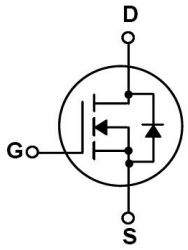
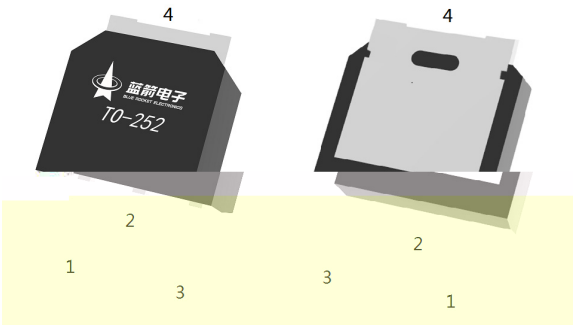
TO-252 N

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

Low $R_{DS(on)}$,low gate charge, low C_{rss}, fast switching, HF Product.

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products, Meet the stringent requirements of automotive applications.





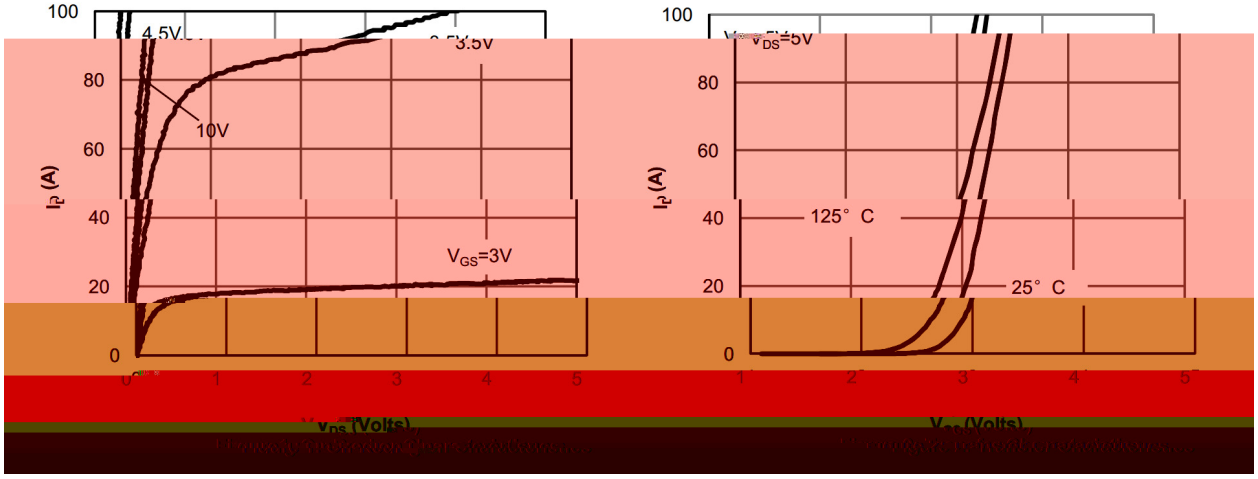
PIN1 G PIN 2 D PIN 3 S PIN 4 D

See Marking Instructions.

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	40	V
Drain Current		I_D(Tc=25)	150	A
Drain Current - Pulsed		I_{DM}	304	A
Gate-Source Voltage		V_{GS}	± 20	V
Avalanche Current		I_{AS}	33	A
Single Pulsed Avalanche Energy(L=0.5mH)		E_{AS}	435	mJ
Power Dissipation		P_D(Tc=25)	120	W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	
Thermal Resistance-Junction to Ambient	t ≤ 10s	$R_{\theta JA}$	20	/W
	Steady-State		50	
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	1.04	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250 A	40			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=40V V_{GS}=0V			1.0	A
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250 A	1.0	1.7	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=20A		2.5	3.0	m
		V_{GS}=4.5V I_D=10A		3.1	5.0	
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=1A			1.4	V
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V, f=1MHz		1.16		
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		9600		pF
Output Capacitance	C_{oss}			740		
Reverse Transfer Capacitance	C_{rss}			650		
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V, V_{DS}=20V, I_D=20A		51		nC
Total Gate Charge	$Q_{g(4.5V)}$			23		
Gate Source Charge	Q_{gs}			13.2		
Gate Drain Charge	Q_{gd}			3.1		

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=20V R_L=1Ω R_{GEN}=3Ω		11		ns
Turn-On Rise Time	t_r			11		
Turn-Off Delay Time	$t_{d(off)}$			40		
Turn-Off Fall Time	t_f			10		



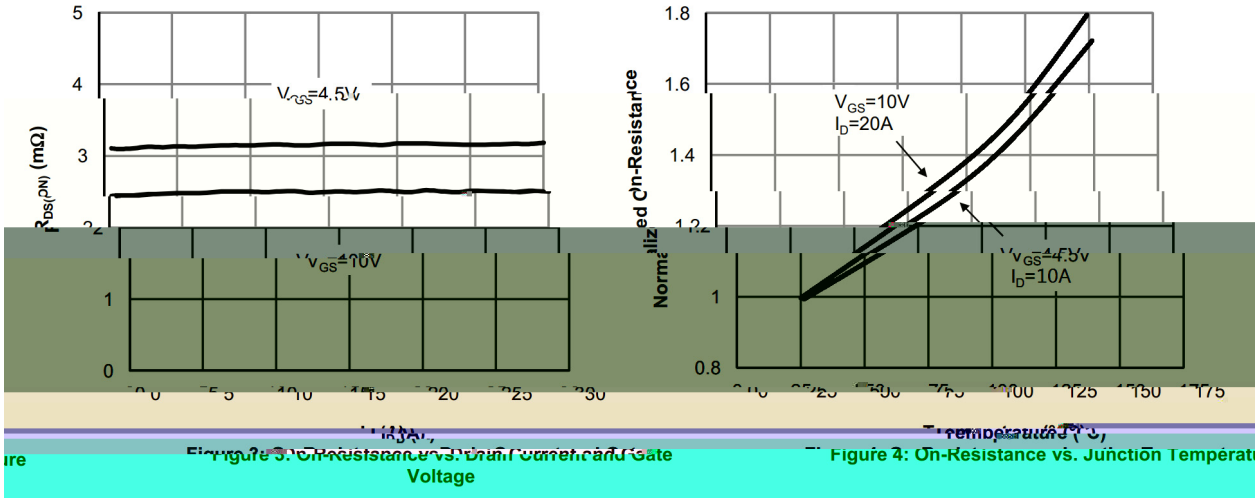


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

Figure 4: On-Resistance vs. Junction Temperature

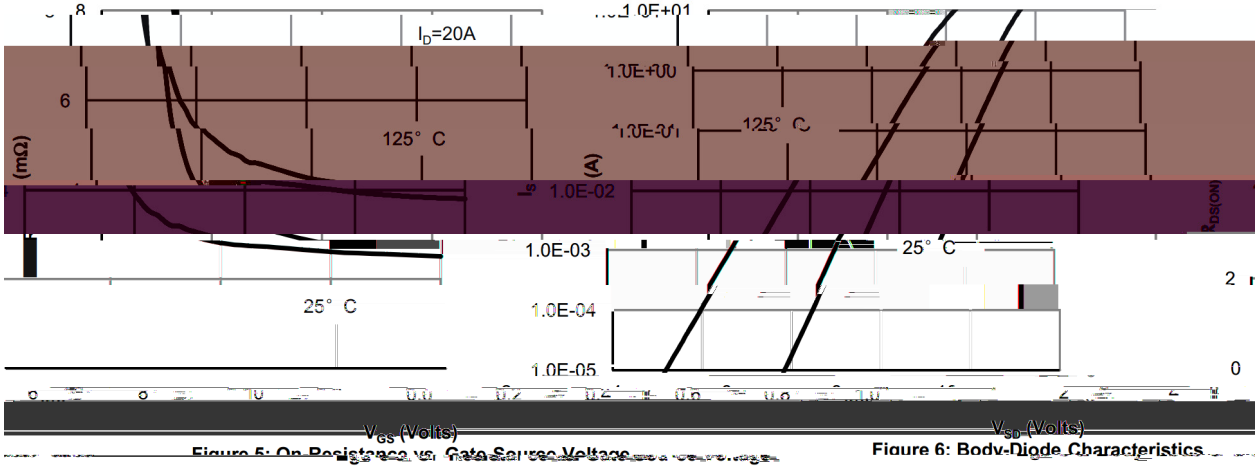


Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

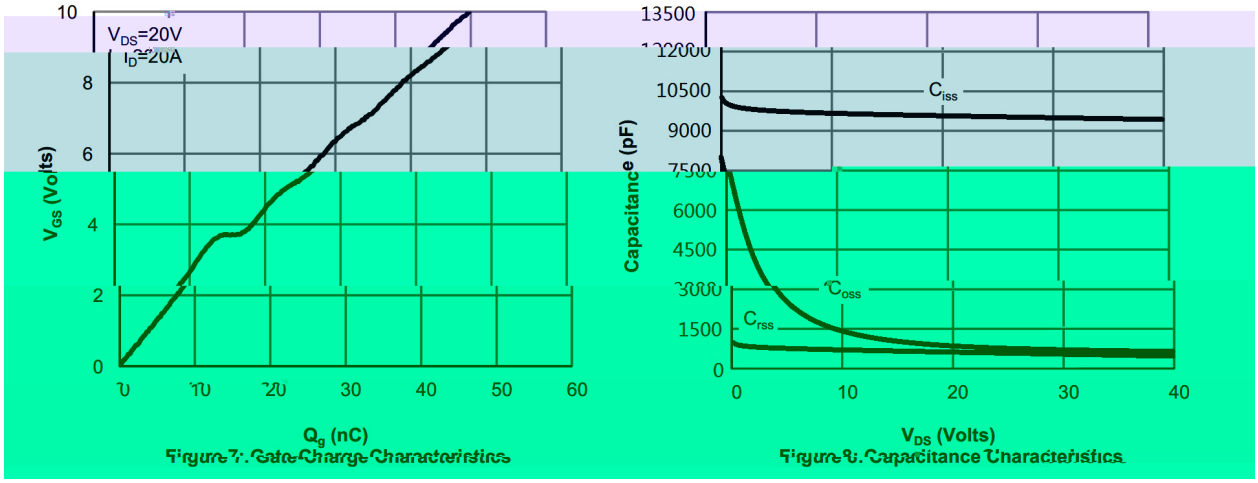


Figure 7: Gate Charge Characteristics

Figure 8: Capacitance Characteristics

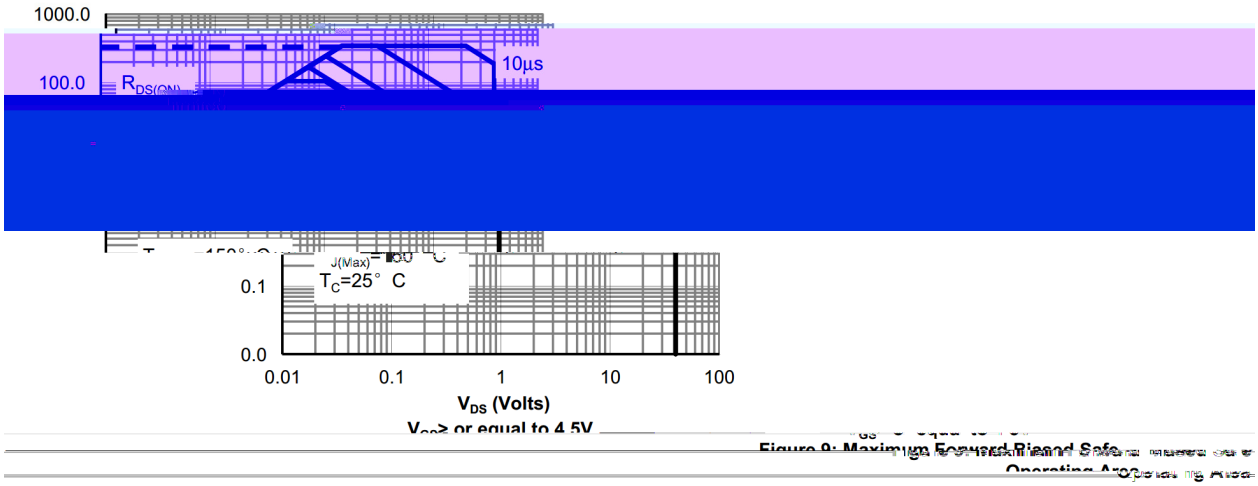
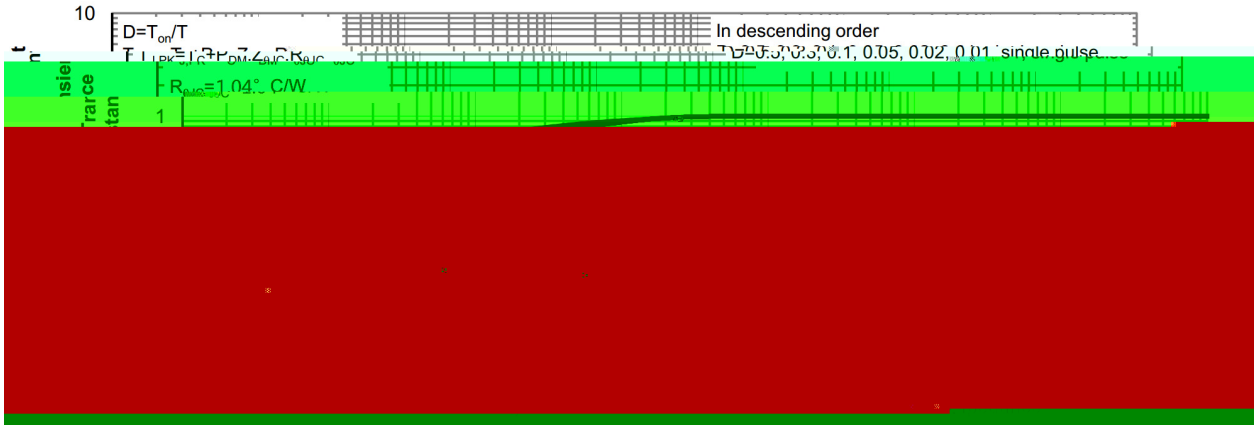
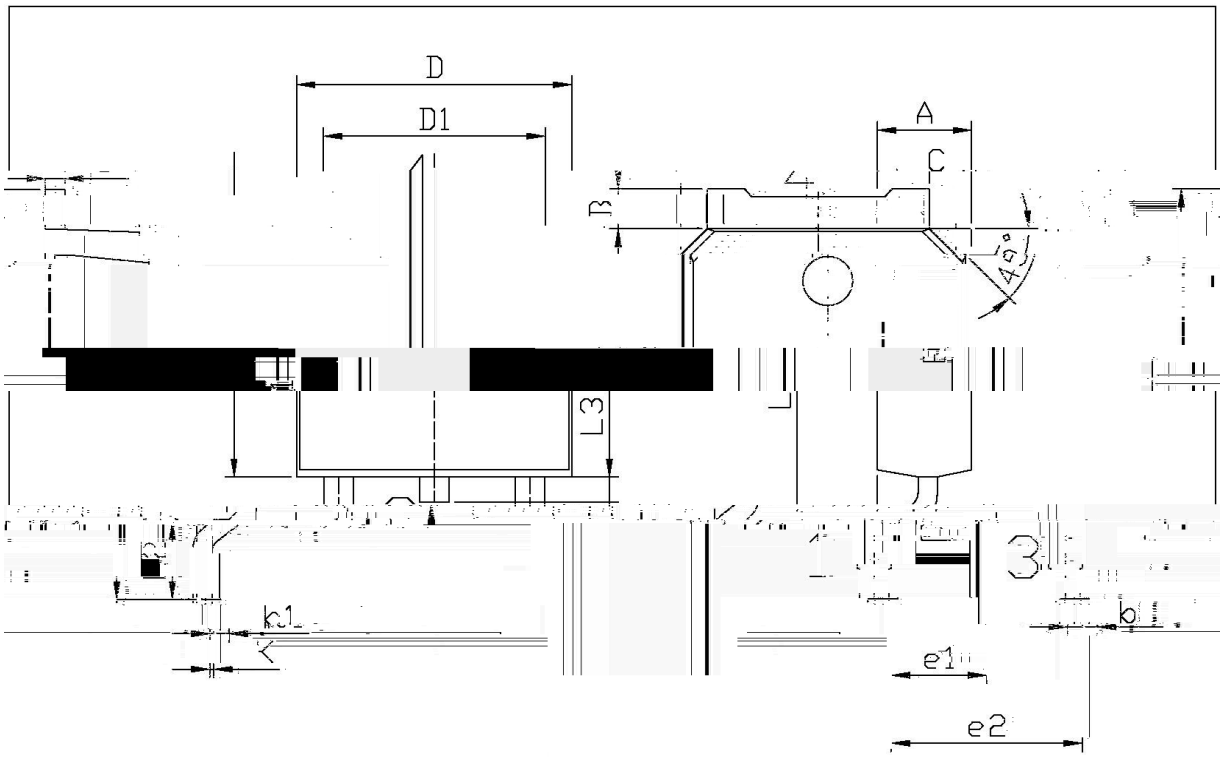


Figure 9: Maximum Forward Biased Safe Operating Area

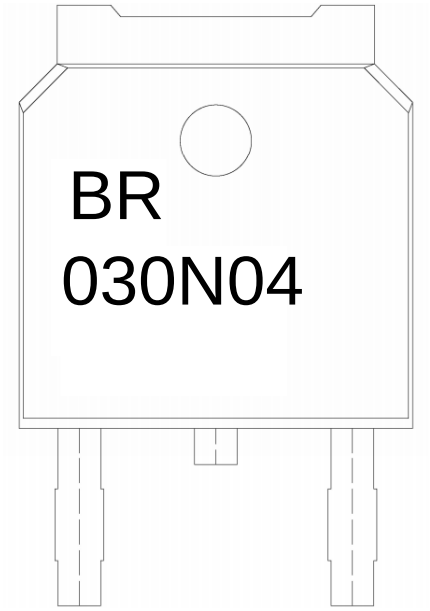




单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max.		Min	Max
	5.95	6.25		2.20	2.40
	2.24	2.34	B	0.95	1.25
0.55	L1	9.85	10.35	b1	0.45
		0.45	0.55		
	6.75	L3	0.60	0.90	

TO-252



BR

030N04

Note:

BR:	Company Code
030N04:	Product Type Code
****:	Lot No. Code, code change with Lot No

	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.

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

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