

/ Descriptions

TO-252 N MOS

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

/ Features

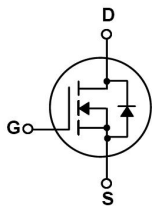
Low gate charge, low crss, fast switching, HF Product.

/ Applications

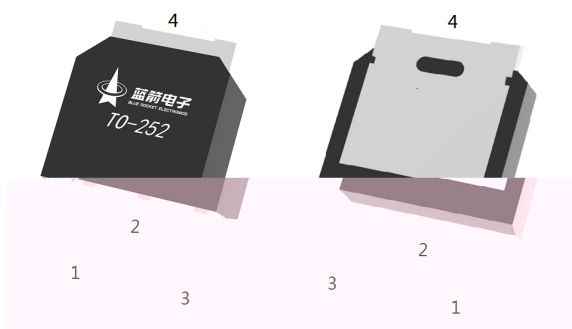
DC/DC

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

/ Equivalent Circuit



/ Pinning



PIN1 G

PIN 2 D

PIN 3 S

PIN 4 D

/ Marking

See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	85	A
Peak Drain Current	I_{DM}	280	A
Gate-Source Voltage	V_{GS}	20	V
Avalanche Current	I_{AS}	26	A
Single Pulsed Avalanche Energy	E_{AS}	354	mJ
Total Power Dissipation	$P_D(T_c=25^\circ\text{C})$	100	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Thermal resistance, junction - ambient	$R_{\theta JA}$	20	
$t \leq 10\text{s}$			

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V, \quad V_{DS}=15V, \quad I_D=20A$		18		nC
Total Gate Charge	$Q_{g(4.5V)}$			8.8		
Gate Source Charge	Q_{gs}			4.1		
Gate Drain Charge	Q_{gd}			3.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V \quad V_{DS}=15V$ $R_L=0.75\Omega \quad R_{GEN}=3\Omega$		7.3		ns
Turn-On Rise Time	t_r			10.5		ns
Turn-Off Delay Time	$t_{d(off)}$			21.8		ns
Turn-Off Fall Time	t_f			5		ns

/ Electrical Characteristic Curve

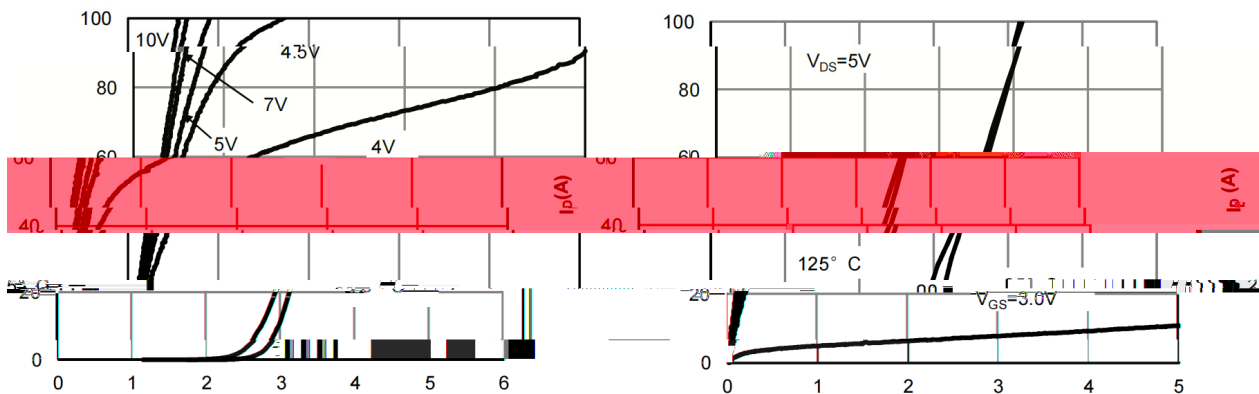


Figure 2: Transfer Characteristics

Fig 1: On-Region Characteristics

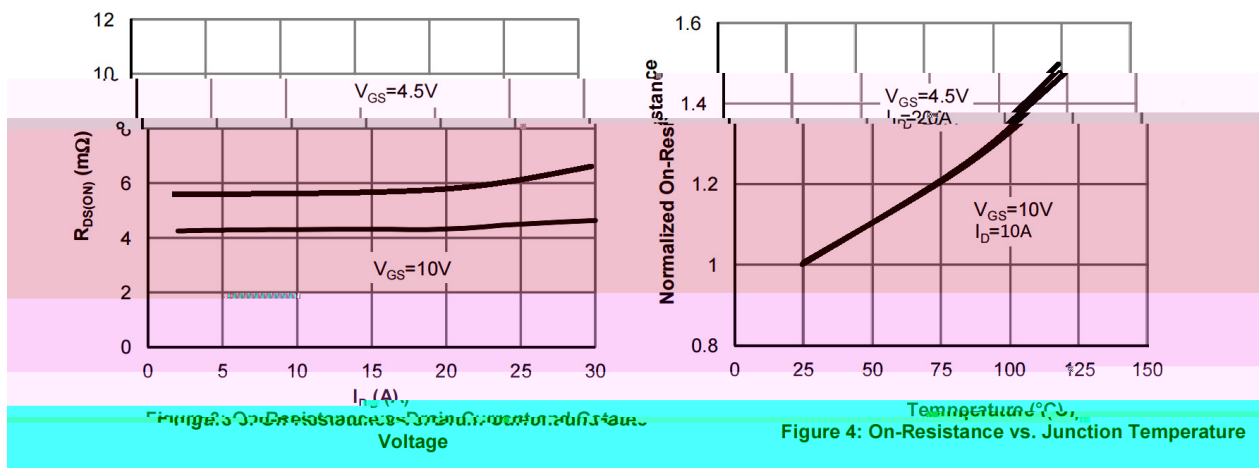
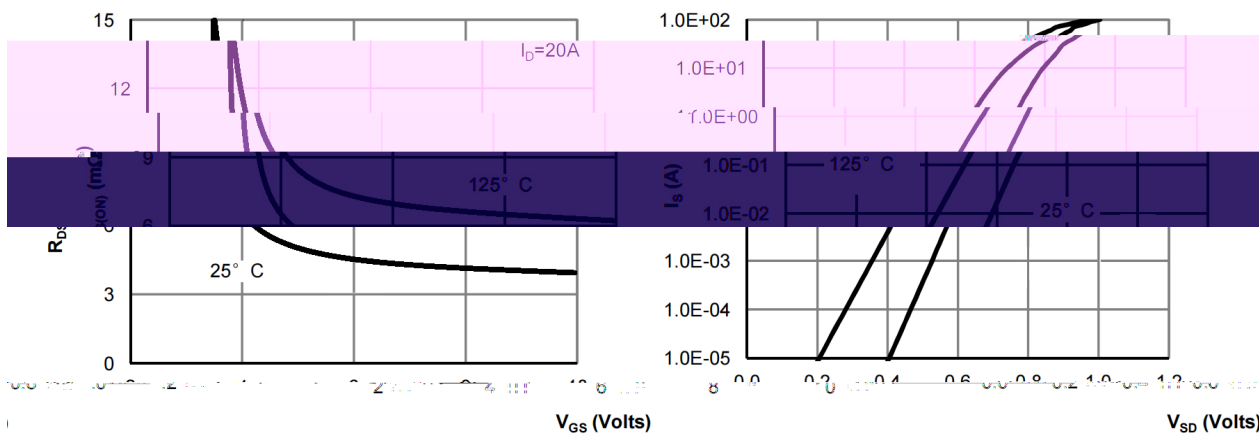


Figure 3: On-Resistance vs. Drain Current

Figure 4: On-Resistance vs. Junction Temperature



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

Figure 6: Body-Diode Ch

/ Electrical Characteristic Curve

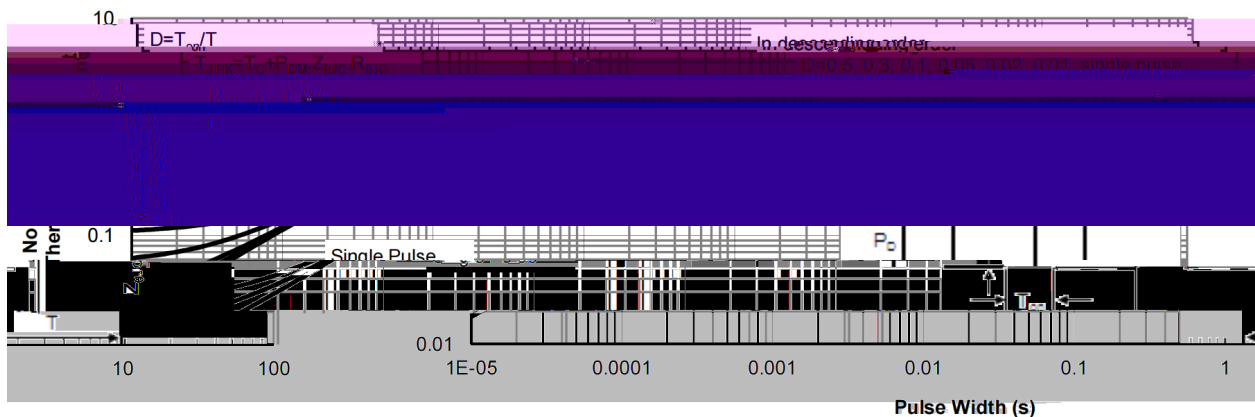
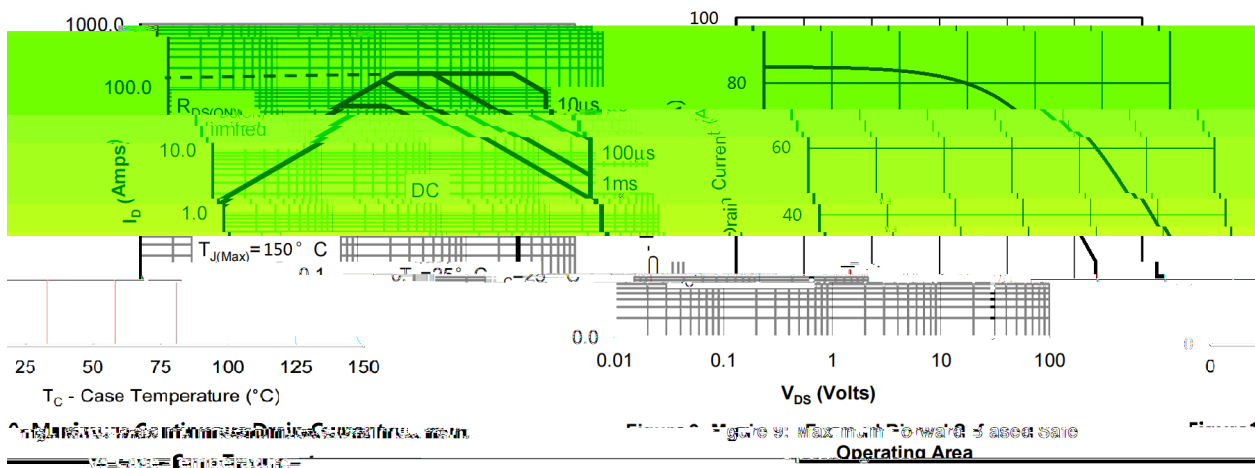
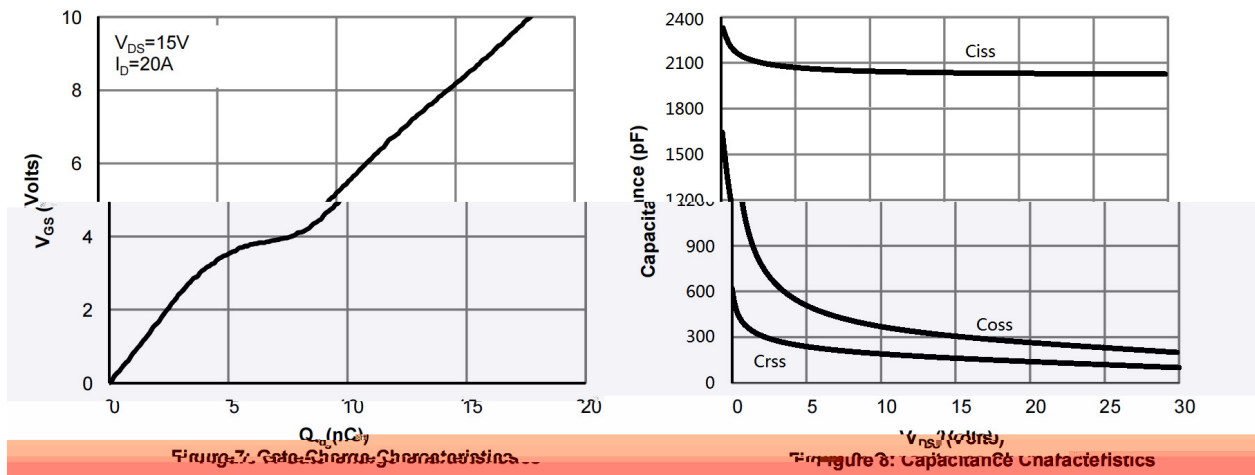
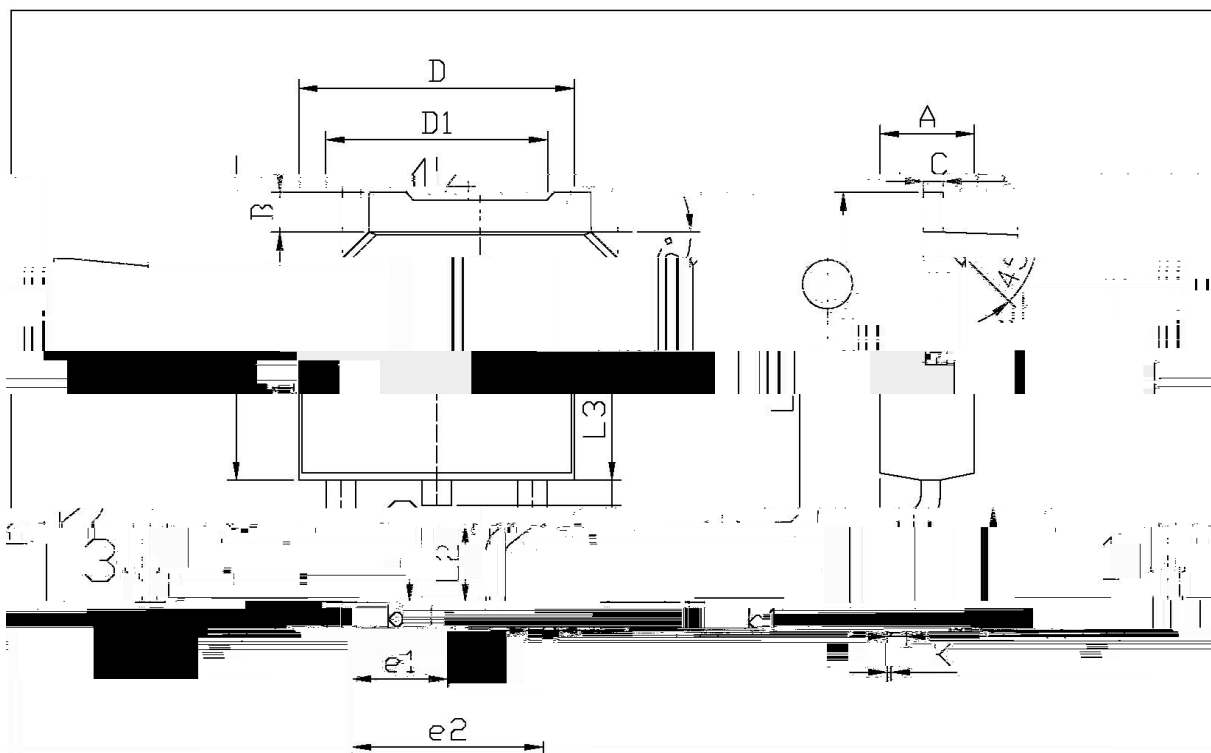


Figure 11: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions

TO-252#

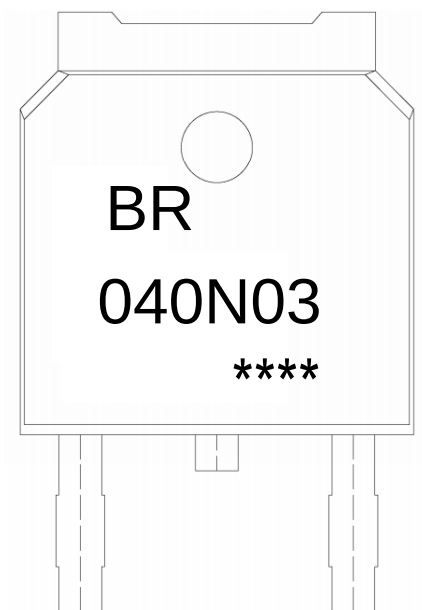


单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
F	5.95	6.25	A	2.20	2.40
e1	2.24	2.34	B	0.95	
e2	4.43	4.73	b	0.40	
D1	9.85	10.35	b1	0.45	
L3	0.45	0.55	L	1.70	2.00
L3	0.60	0.90	L	6.45	
L3	5.10	5.50	L	6.10	

TO-252

/ Marking Instructions



BR

040N03

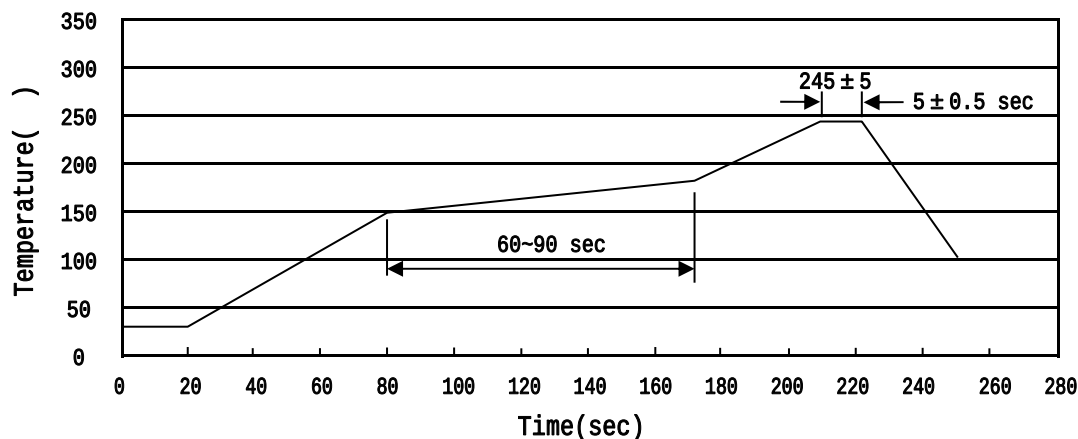
Note:

BR: Company Code

040N03: Product Type

****: Lot No. Code, code change with Lot No

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



Note:

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

/ Resistance to Soldering Heat Test Conditions

260±5 °C, 10±1 sec., Temp.: 260±5 °C, Time: 10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
TO-252	2,500	2	5,000	6	30,000	13 × 16	360×360×50	380×335×366

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices