

BRCS040N03DP

Rev.A Dec. -2021

/ Descriptions

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

/ Features

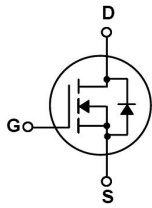
Low gate charge, low crss, fast switching, HF Product.

/ Applications

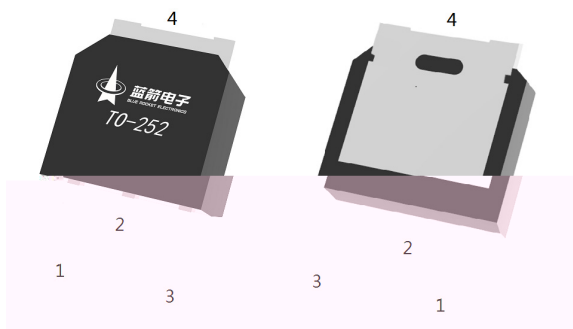
DC/DC

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.

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Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	30	V
Drain Current	$I_D(T_C=25^\circ C)$	85	A
Peak Drain Current	I_{DM}	280	A
Gate-Source Voltage	V_{GSS}	20	V
Avalanche Current	I_{AS}	26	A
Single Pulsed Avalanche Energy	E_{AS}	354	mJ
Total Power Dissipation	$P_D(T_C=25^\circ C)$	100	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

Thermal resistance, junction to ambient $t \leq 10s$

R_{JA}

20

%

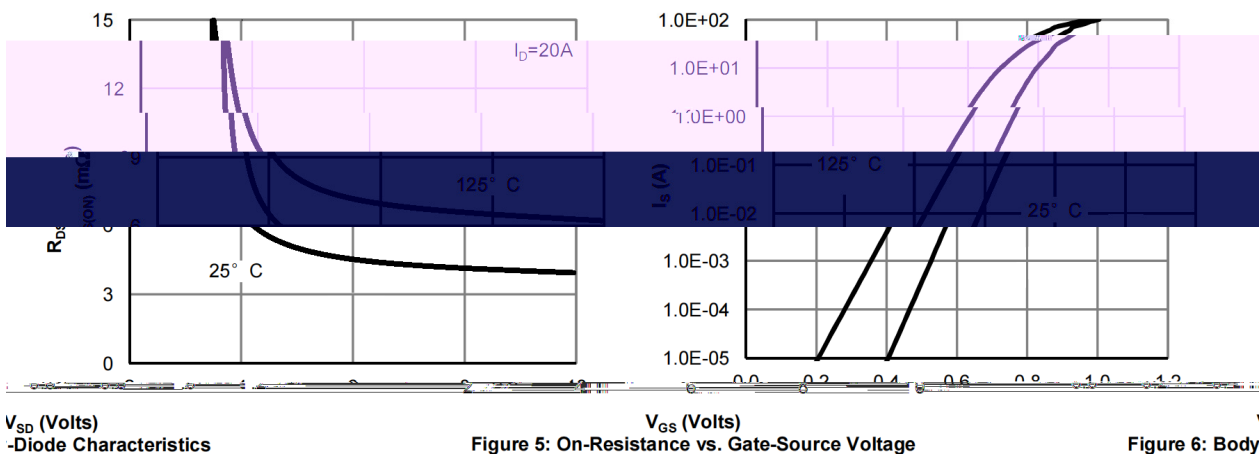
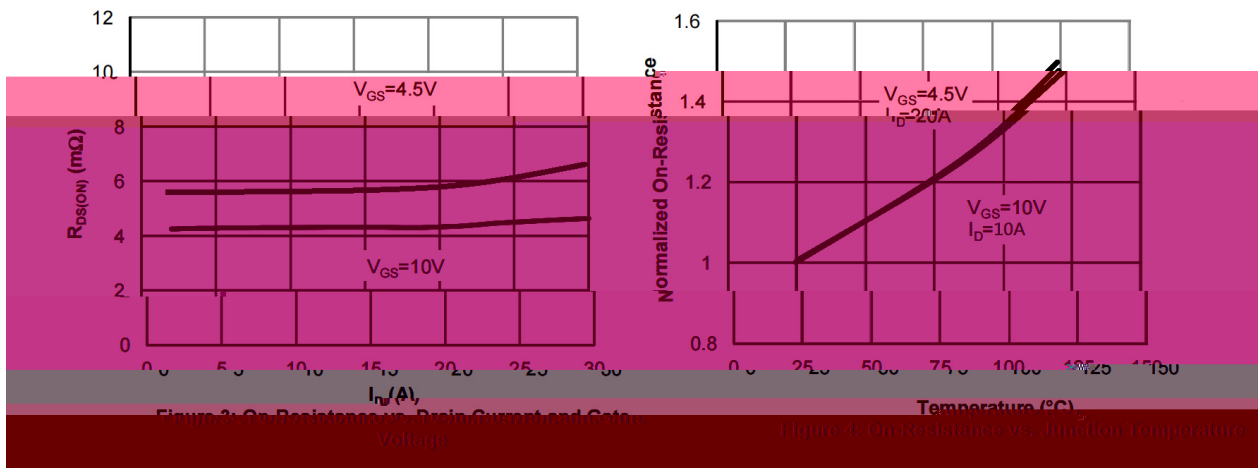
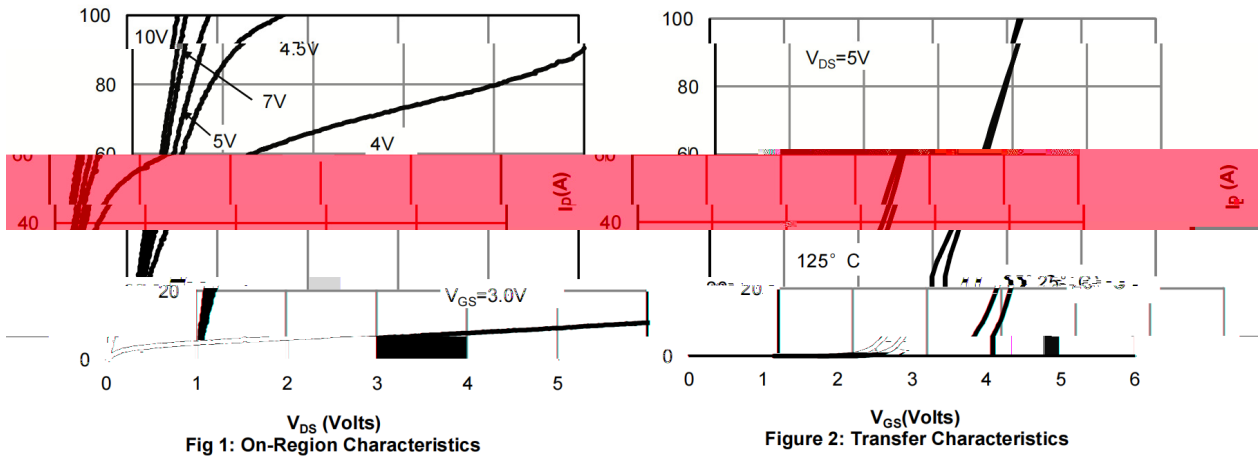
W/°C

W. 0 Tr .410.5 351

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V,$ $I_D=20A$ $V_{DS}=15V,$		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	$t_{d(on)}$	$V_{GS}=10V$ $R_L=0.75$ $V_{DS}=15V$ $R_{GEN}=3$		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



/ Electrical Characteristic Curve

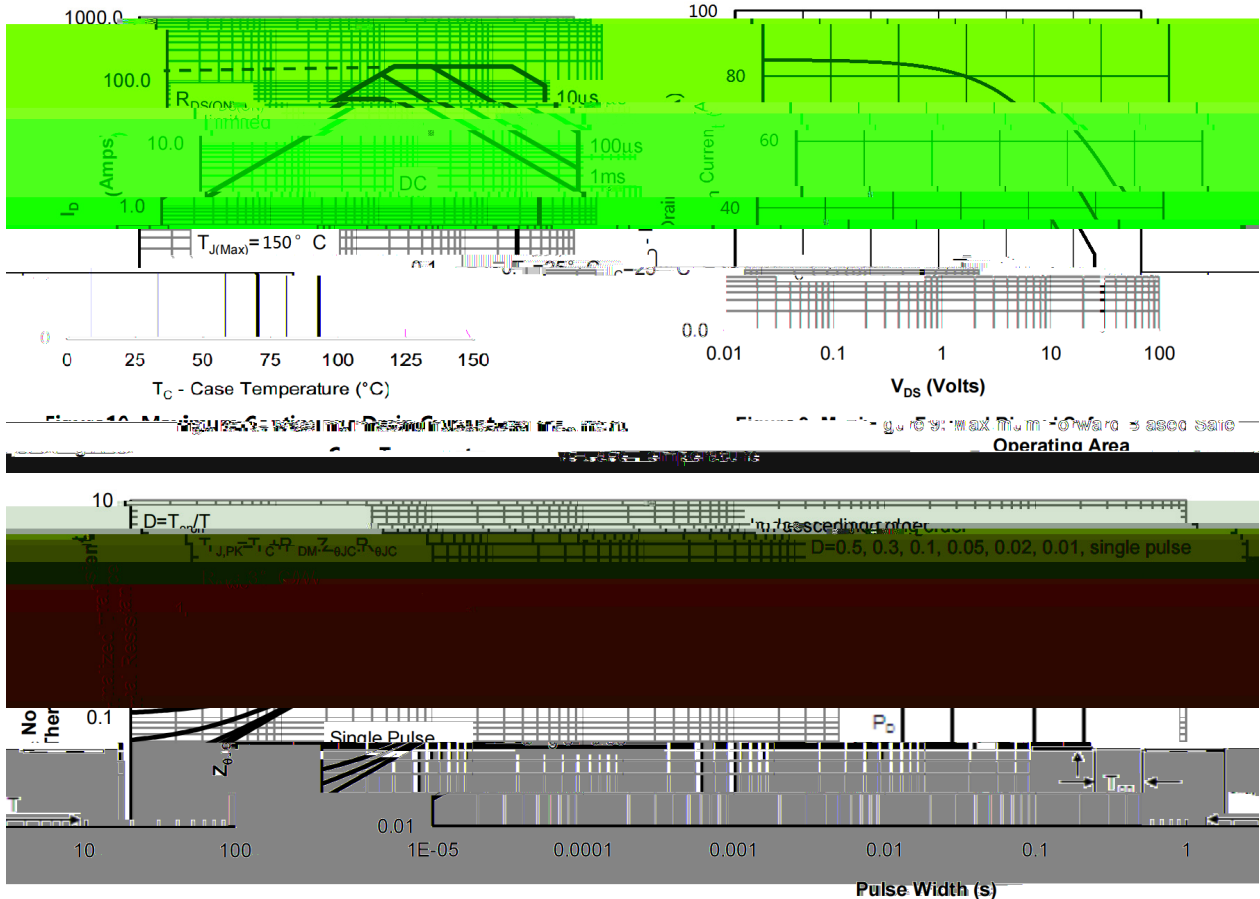
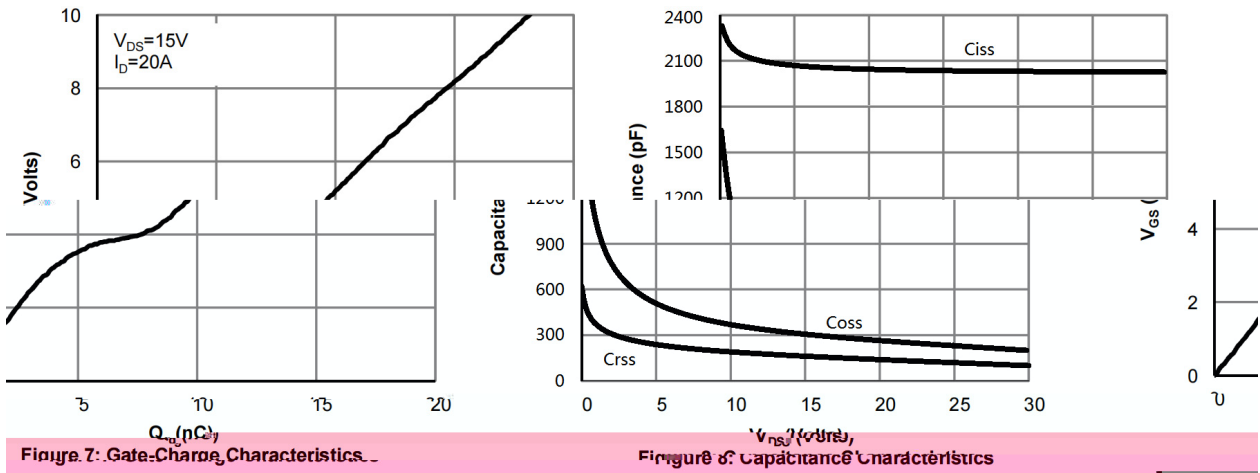
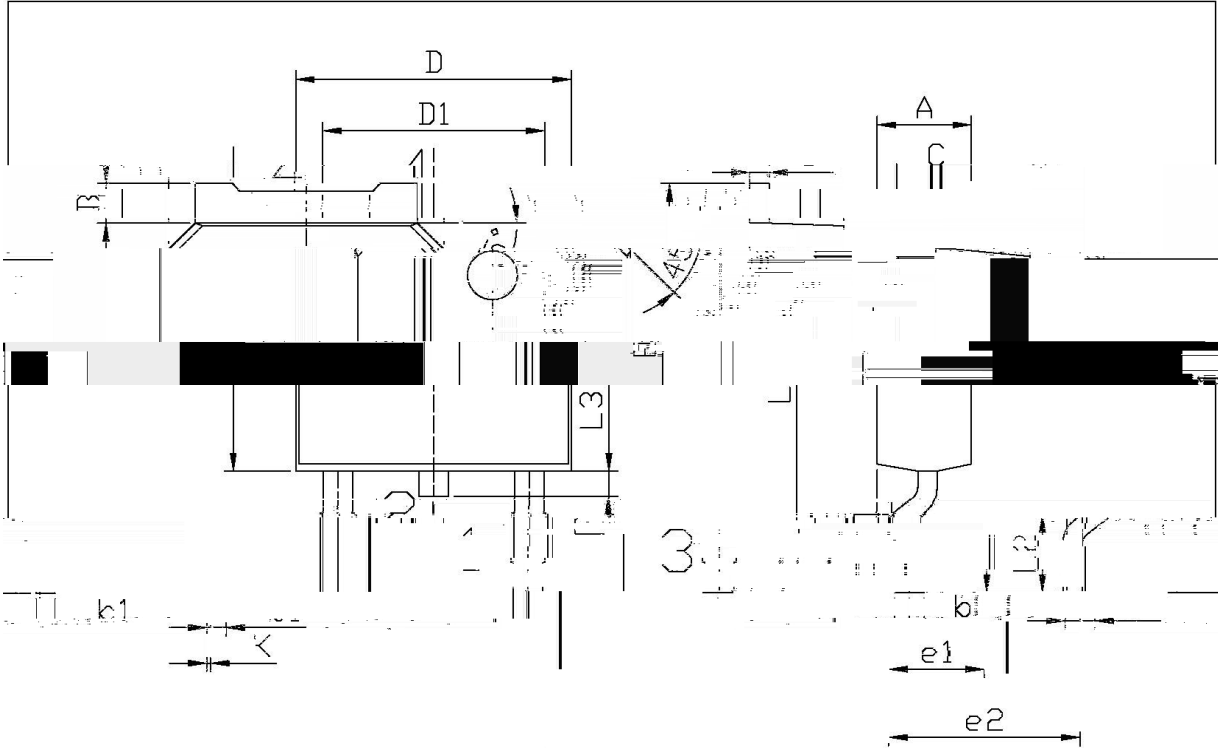


Figure 11: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions

TO-252#

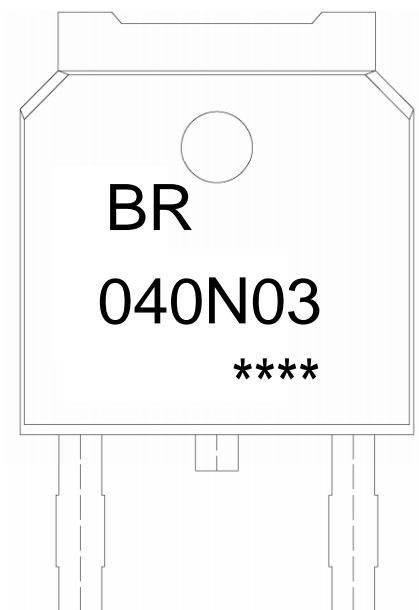


单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min.	Max.		Min.	Max.
A	2.20	2.40	E	5.50	5.90
B	0.95	1.25	e1	2.20	2.50
C	0.70	0.90	e2	4.30	4.70
D	6.45	6.75	L1	9.85	10.15
D1	6.45	6.75	L2	1.70	2.00
E	5.50	5.90	L3	0.45	0.55
e1	2.20	2.50	b1	0.45	0.55
e2	4.30	4.70	b	0.70	0.90
L1	9.85	10.15	k	0.60	0.90
L2	1.70	2.00	k	0.60	0.90
L3	0.45	0.55			

TO-252

/ Marking Instructions



BR

040N03

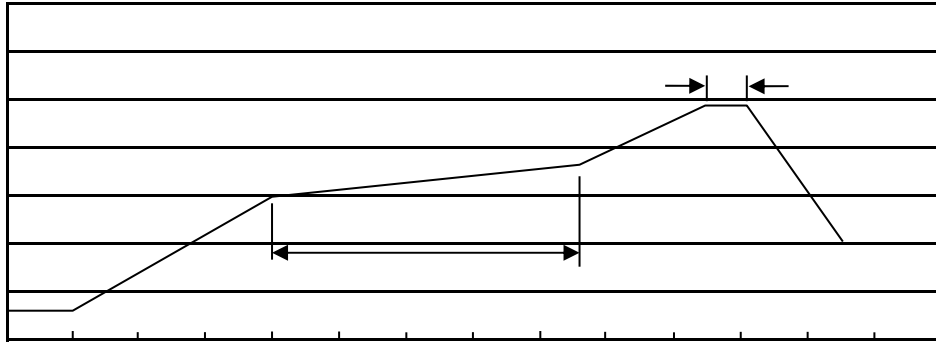
Note:

BR: Company Code

040N03: Product Type

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

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



Note:

- | | | | |
|---|---------|-----------|---|
| 1 | 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 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