

BRCS040N03DP

Rev.A Dec. -2021

/ Descriptions

TO-252 N MOS

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

/ Features

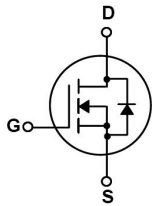
Low gate charge, low crss, fast switching, HF Product.

/ Applications

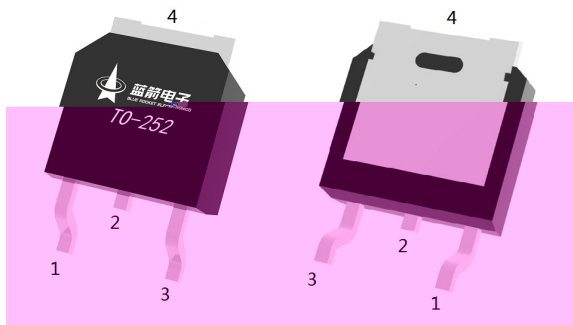
DC/DC

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_{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 to ambient $t \leq 10\text{s}$
 $R_{\theta JA}$

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/W34.86 s70 10862

/ 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			3.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V \quad V_{DS}=15V$ $R_L=0.75 \quad R_{GEN}=3$		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

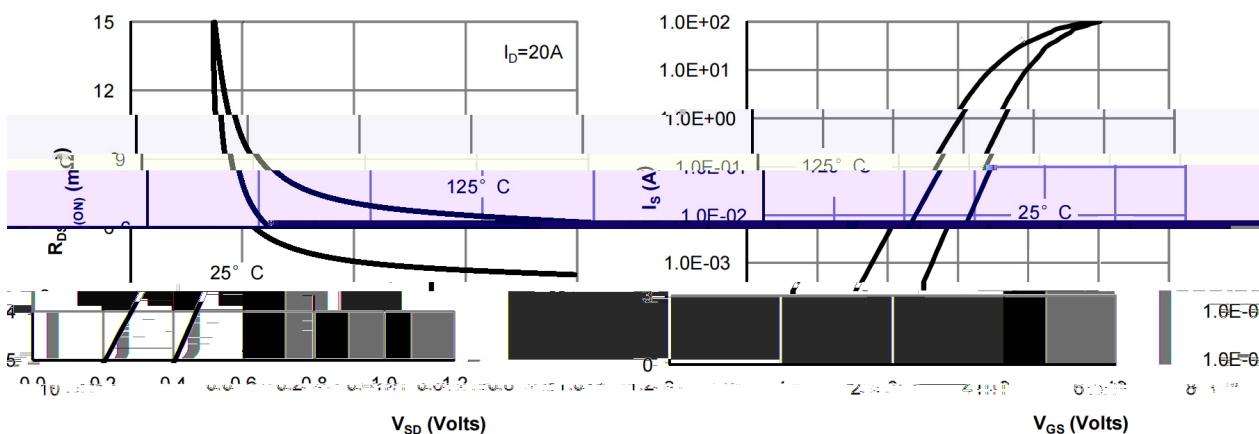
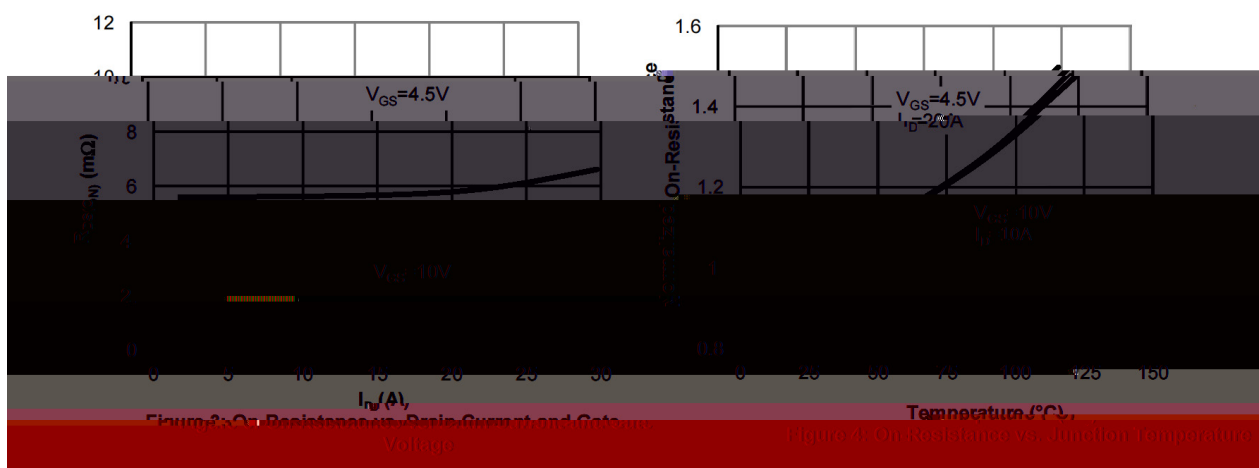
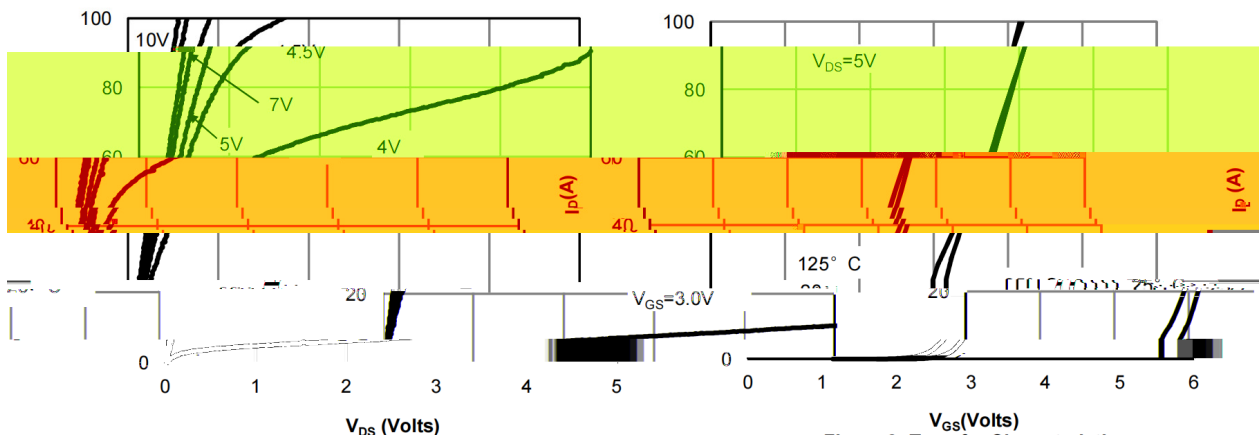


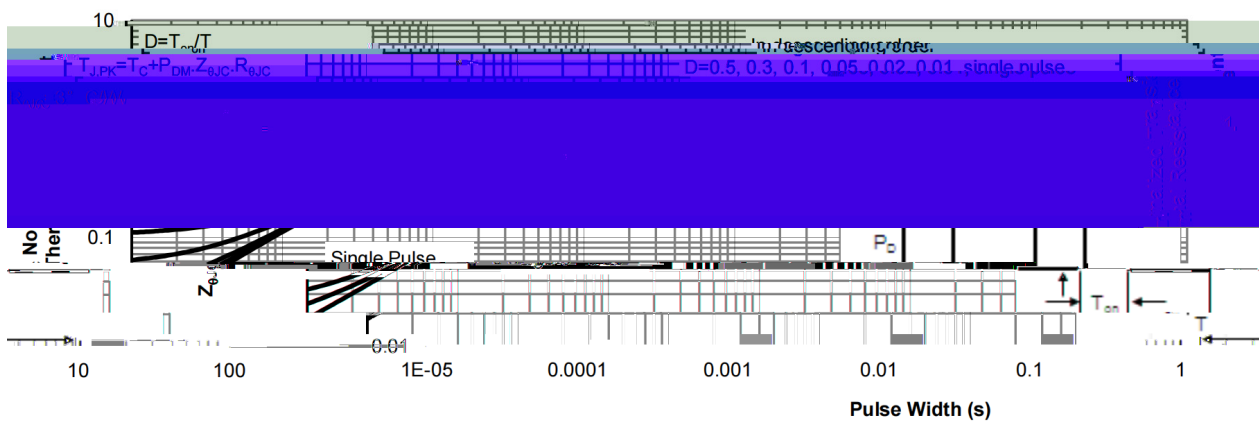
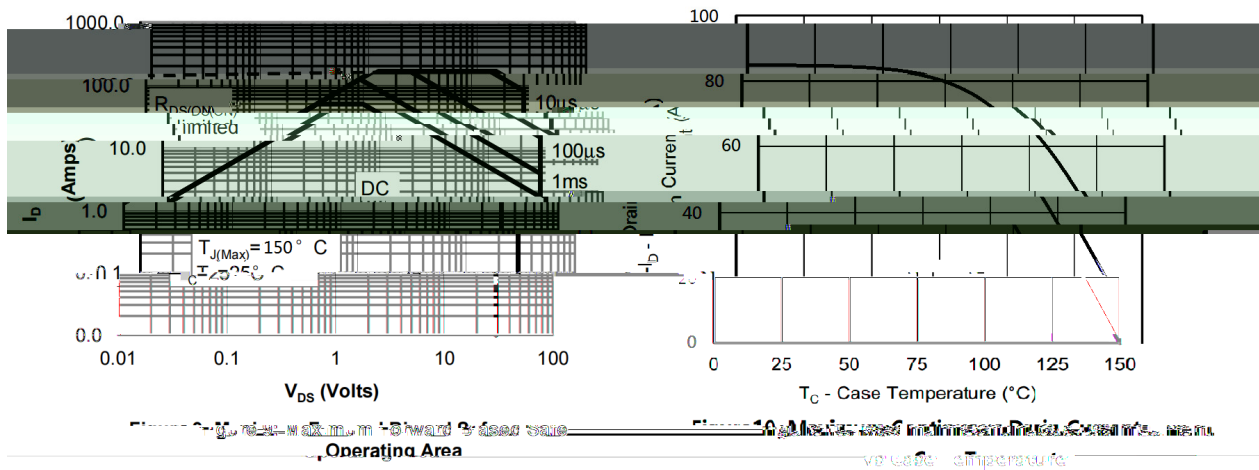
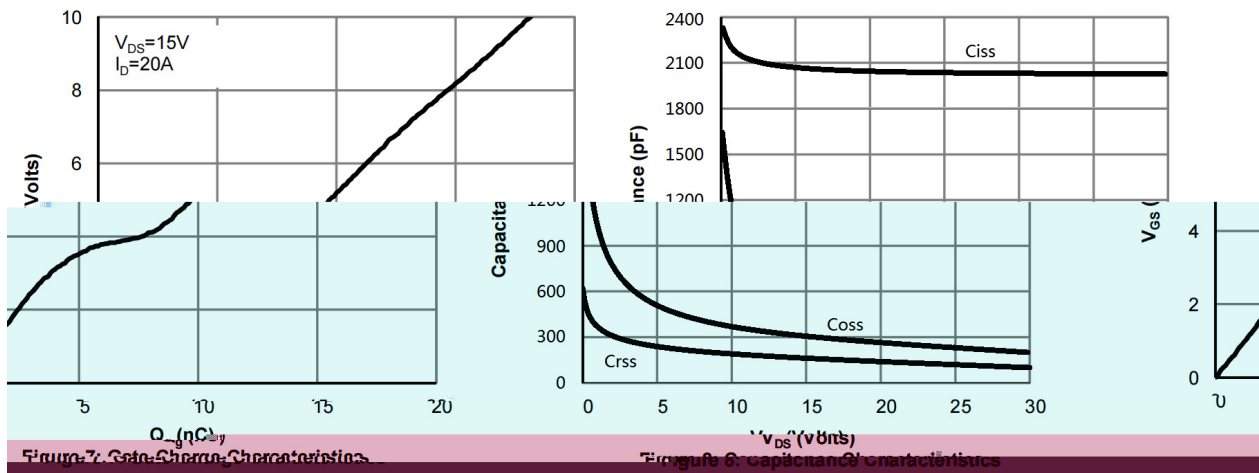
Figure 5

Figure 6: Body-Diode Characteristics

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

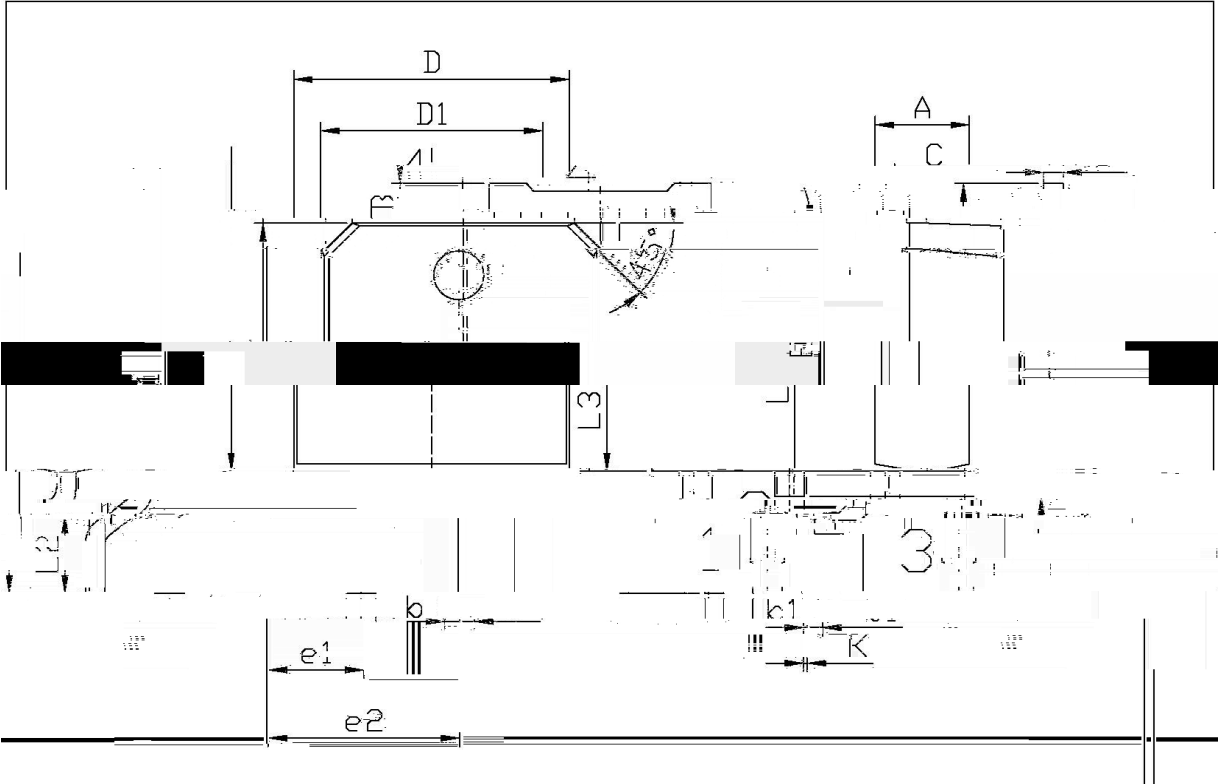


/ Electrical Characteristic Curve



/ Package Dimensions

TO-252#



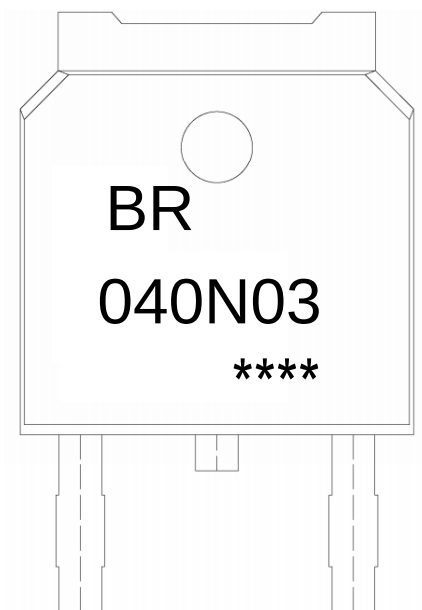
单位：mm

Dimensions In Millimeters			Dimensions In Millimeters		
Symbol	Min	Max	Symbol	Min	Max
E	5.95	6.25	A	2.20	2.40
e1	2.24	2.34	B	0.95	1.25
e2	4.13	4.72	b	0.70	0.90
L2	0.55	0.85	L3	0.45	0.55
L3	0.60	0.90	D	6.45	6.75
K	0.00	0.10	D1	5.10	

TO-252



/ Marking Instructions



BR

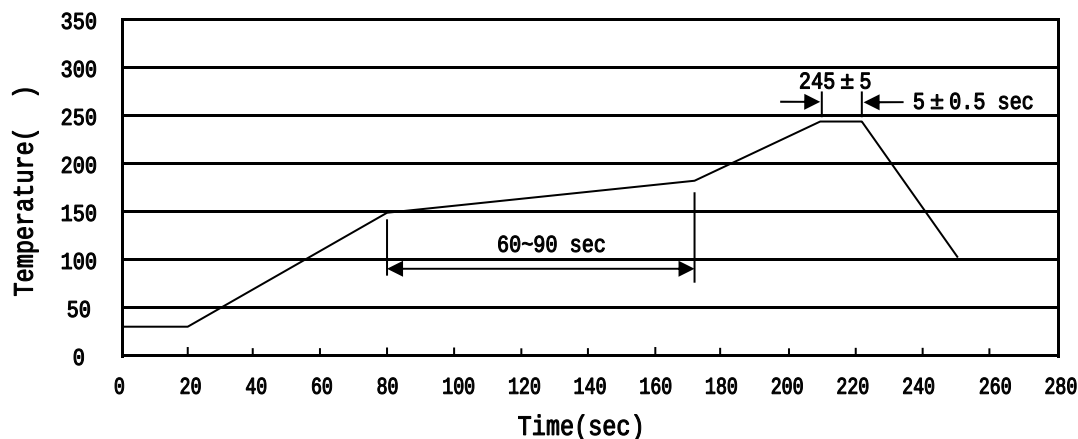
040N03

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

/ Resistance to Soldering Heat Test Conditions

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