/ Revised record

A	2021-12-11	ALL	BRD100N03 Ver.D TO-252#		

/ Descriptions

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

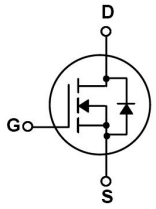
/ Features

, ,
Low gate charge, low crss, fast switching. Halogen-free 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

/ h_{FE} Classifications & Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Drain Current		I_D(Tc=25℃)	100	A
Peak Drain Current		I_{DM}	350	A
Gate-Source Voltage		V_{GSS}	±20	V
Avalanche Current		I_{AS}	30	A
Single Pulsed Avalanche Energy		E_{AS}	360	mJ
Total Power Dissipation		P_D(Tc=25℃)	100	W
Junction and Storage Temperature Range		T_J,T_{STG}	-55 to 150	℃
Thermal resistance, junction - ambient	t ⩽ 10s	$R_{\theta JA}$	20	℃/W
	Steady-State		50	
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	1.8	

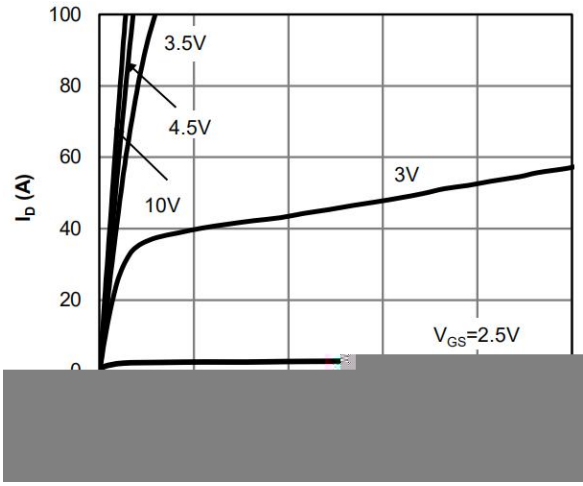
/ Electrical Characteristics(Ta=25)

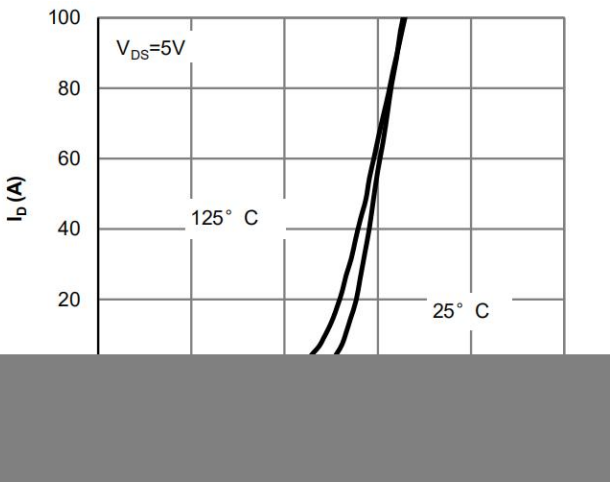
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	BV_{DSS}	V_{GS}=0V	I_D=250μA	30	32		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V	V_{GS}=0V			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V	V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	1.0	1.7	3.0	V
Forward On Voltage	V_{SD}	I_S=20A	V_{GS}=0V			1.2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V	I_D=50A		2.8	3.8	mΩ
		V_{GS}=4.5V	I_D=40A		4.0	7.0	mΩ
Gate resistance	R_g	V_{GS}=0V f=1MHz	V_{DS}=0V		1.8		Ω
Input Capacitance	C_{iss}	V_{GS}=0V V_{DS}=25V	f=1.0MHz		2500		pF
Output Capacitance	C_{oss}				310		pF
Reverse Transfer Capacitance	C_{rss}				275		pF

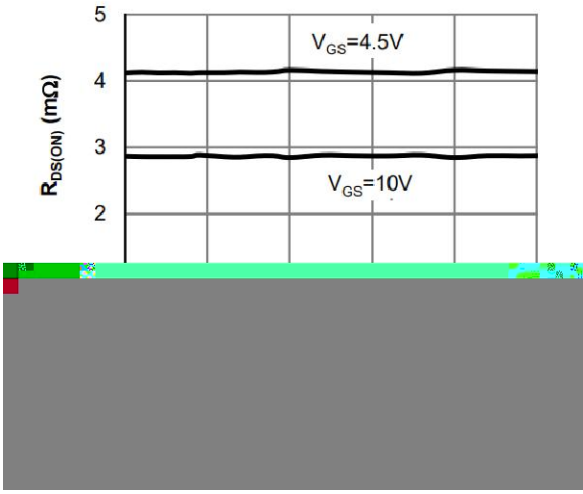
/ Electrical Characteristics(Ta=25)

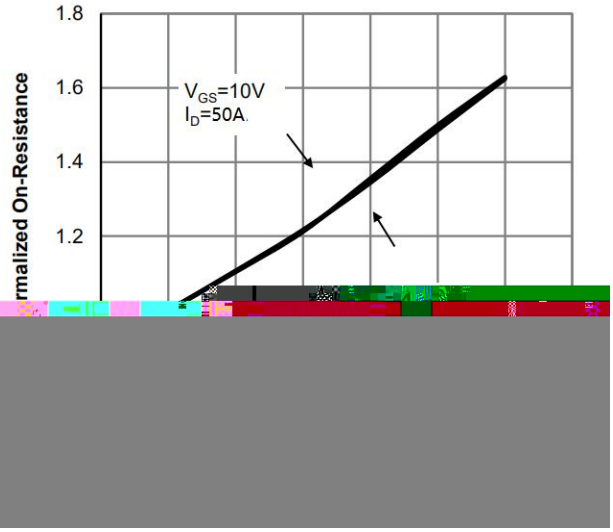
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V, V_{DS}=15V, I_D=20A		80		nC
Total Gate Charge	$Q_{g(4.5V)}$			35		
Gate Source Charge	Q_{gs}			13		
Gate Drain Charge	Q_{gd}			13		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=15V I_D=1A R_{GEN}=6Ω V_{GS}=10V		25.7	50	ns
Turn-On Rise Time	t_r			10	20	ns
Turn-Off Delay Time	$t_{d(off)}$			128	200	ns
Turn-Off Fall Time	t_f			34	70	ns

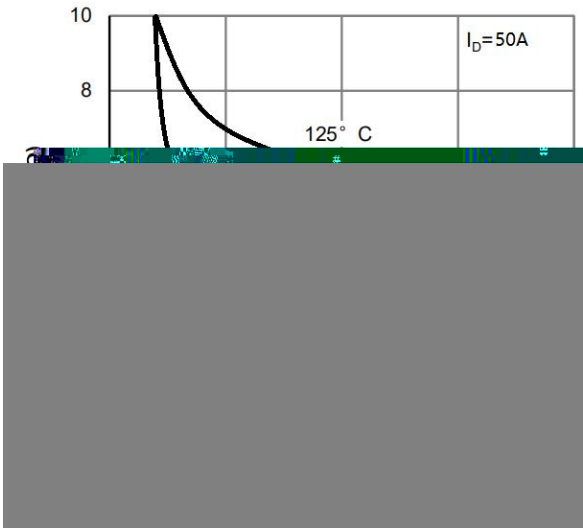
/ Electrical Characteristic Curve

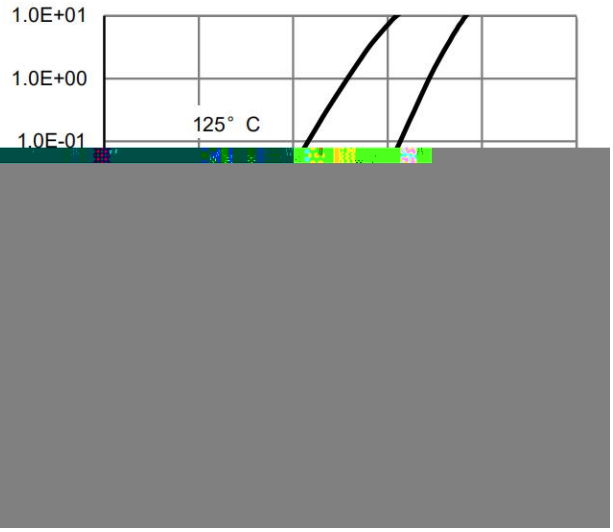




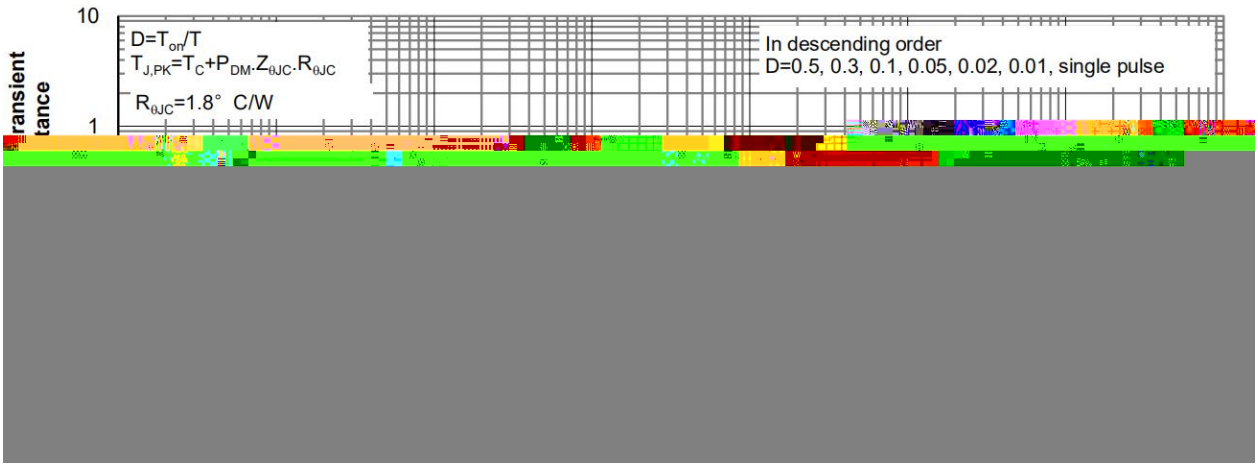




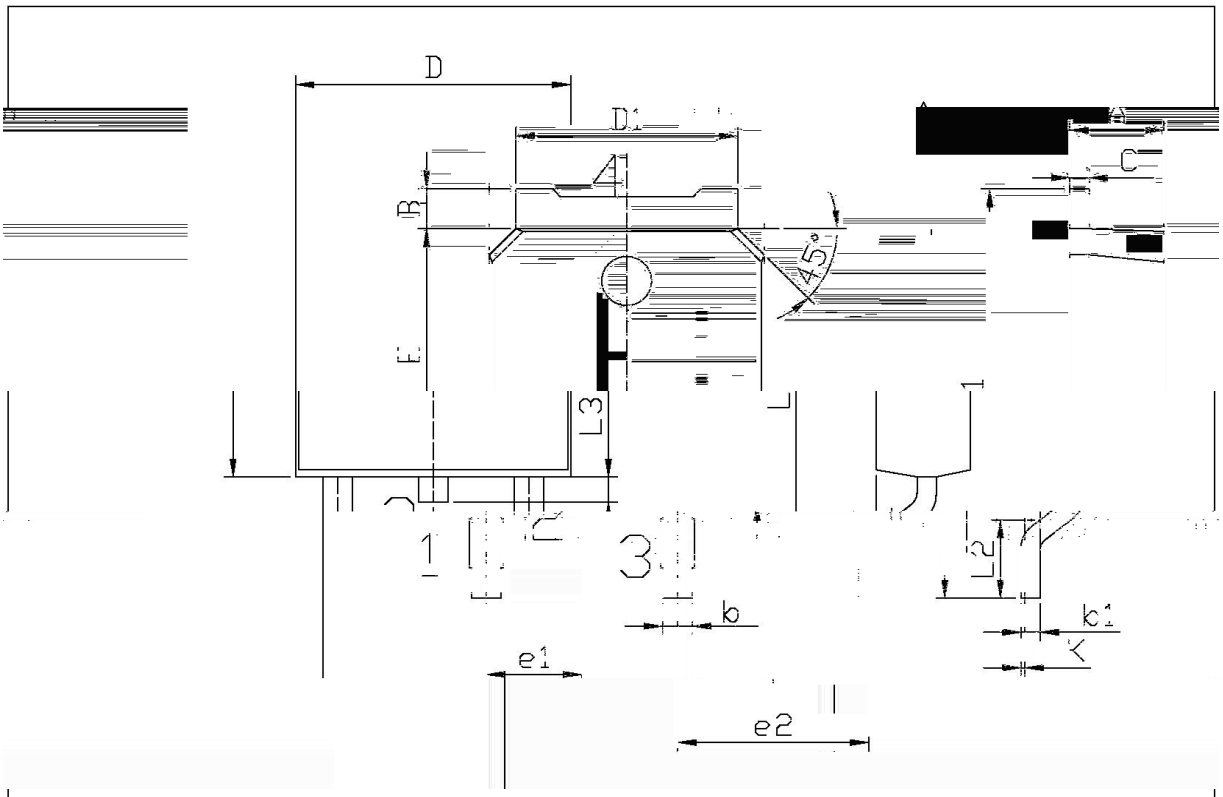




/ Electrical Characteristic Curve



/ Package Dimensions

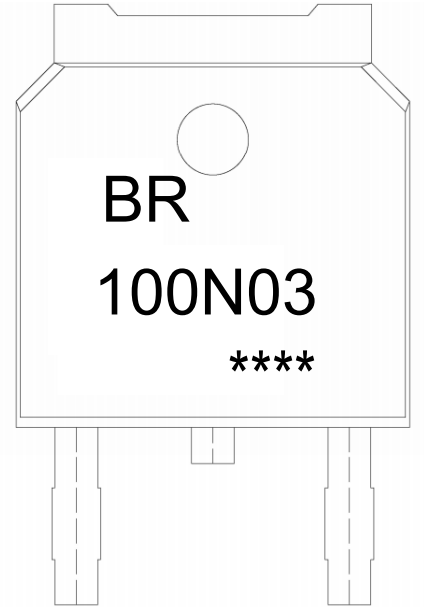


单位：mm

Symbol	Min	Max	Symbol	Min	Max
A	2.40		A		2.20
B	5.95	6.25	B		0.95
e1	2.24	2.34			
e2	4.50	4.70			
L	9.85				
L1	0.45	0.55	L1	0.35	
C	1.70	2.00	C	0.45	0.55
L2	1.25		L2		
L3	0.60	0.90	D	6.45	
E	6.75				

TO-252

/ Marking Instructions



BR

100N03

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Note:

BR:	Company Code
100N03:	Product Type.
****:	Lot No. Code, code change with Lot No.

( ) / Temperature Profi IR Reflow Soldering(Pb-Free)

N

1	150 180	60 90sec;	1.I	ing:150~180℃, Time:60~90sec.
2	245±5	5±0.5sec;	2.P	mp.:245±5℃, Duration:5±0.5sec.
3	2	10℃/sec.	3. C	Speed: 2~10℃/sec.

/ Resistance to Soldering Heat Test ions

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

/ Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量					mension 包装尺寸 (unit: mm^3)	
	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Inner Box 盒	Outer Box 箱
TO-252	2,500	2	5,000	6	30,000	360×360×50	380×335×366

/ TUBE

Package Type 封装形式	Units 包装数量					ion 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	Inner Box 盒	Outer Box 箱
TO-251/252	75	48	3,600	5	18,000		