

BRD5N50F

Rev.A Apr.-2024

/ Descriptions

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

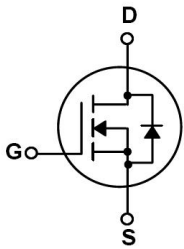
/ Features

$V_{DS}=500V$ $I_D=5A$
 $R_{DS(ON)}@10V \leq 1.7$ (Typ. 1.3)
Fast Switching.
HF Product.

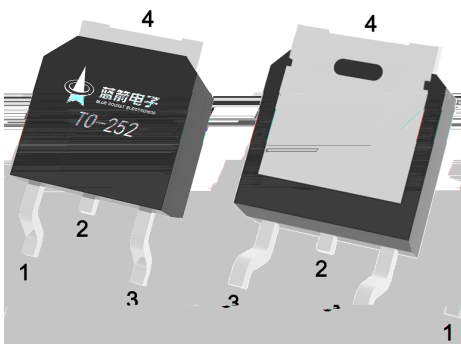
/ Applications

These devices are well suited for power switch circuit of adaptor and charger, intergrate fast recovery diode.

/ Equivalent Circuit



/ Pinning



PIN 1 G PIN 2 D PIN 3 S PIN 4 D

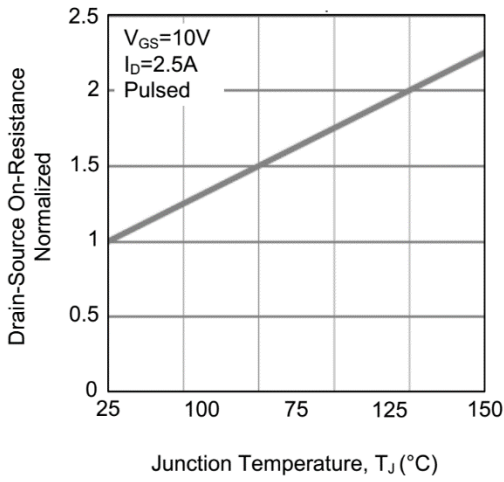
/ Marking

See Marking Instructions.

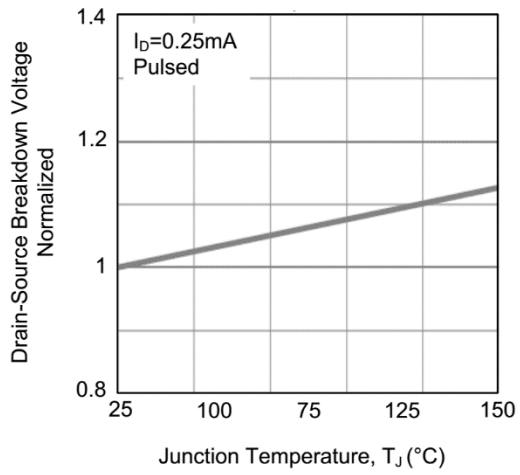
电性能参数 / Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=100V$ $I_D=5.0A$ $V_{GS}=10V$ $R_G=25$		7.5		ns
Turn-On Rise Time	t_r			18		
Turn-Off Delay Time	$t_{d(off)}$			38.6		
Turn-Off Fall Time	t_f			23.4		
Maximum Continuous Drain-Source Diode Forward Current	I_S				5	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}				10	A
Reverse Recovery Time	t_{rr}	$V_{GS}=0V$ $I_S=5.0A$ $dI_F/dt=100 A/s$		95		ns
Reverse Recovery Charge	Q_{rr}			1.75		μC

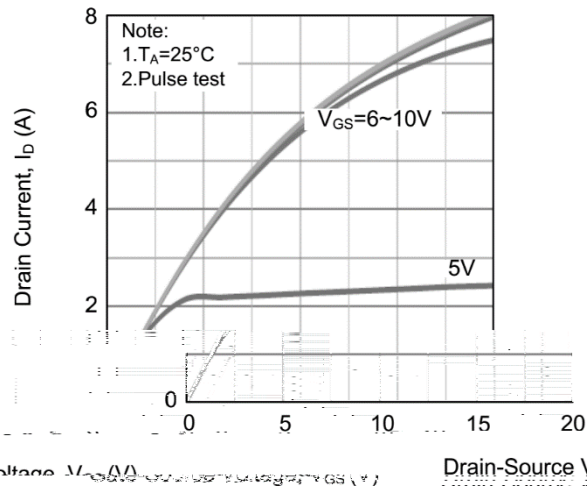
/ Electrical Characteristic Curve



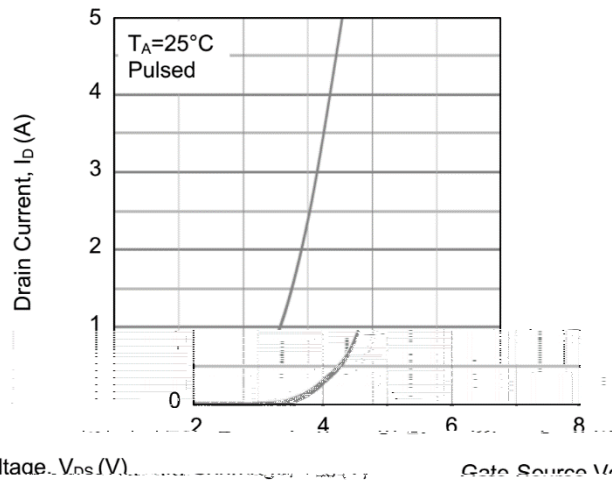
1. Drain-Source On-Resistance vs. Junction Temperature



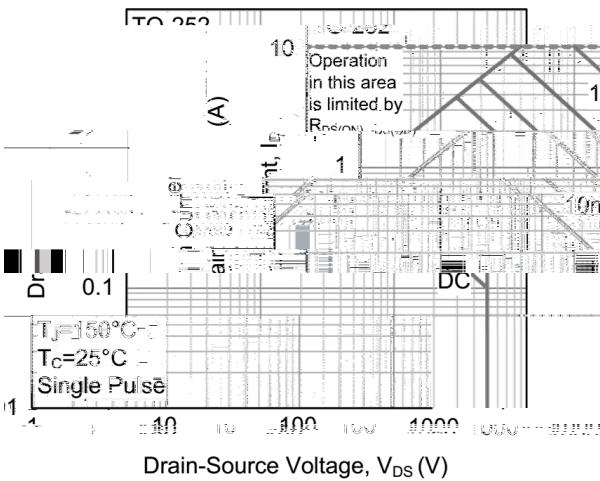
2. Breakdown Voltage vs. Junction Temperature



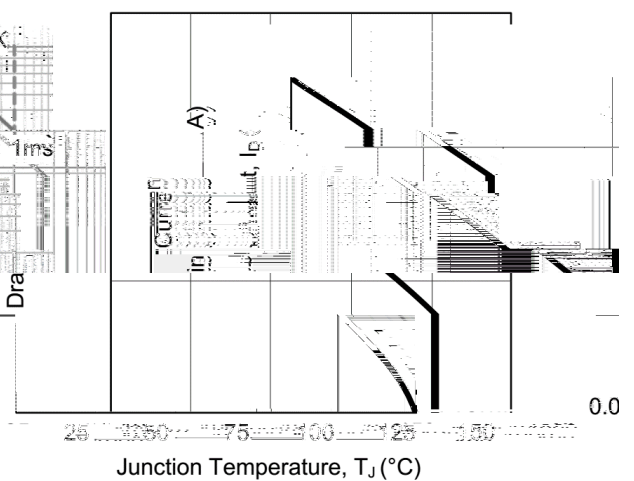
4. Drain Current vs. Gate-Source Voltage



3. Drain Current vs. Drain-Source Voltage

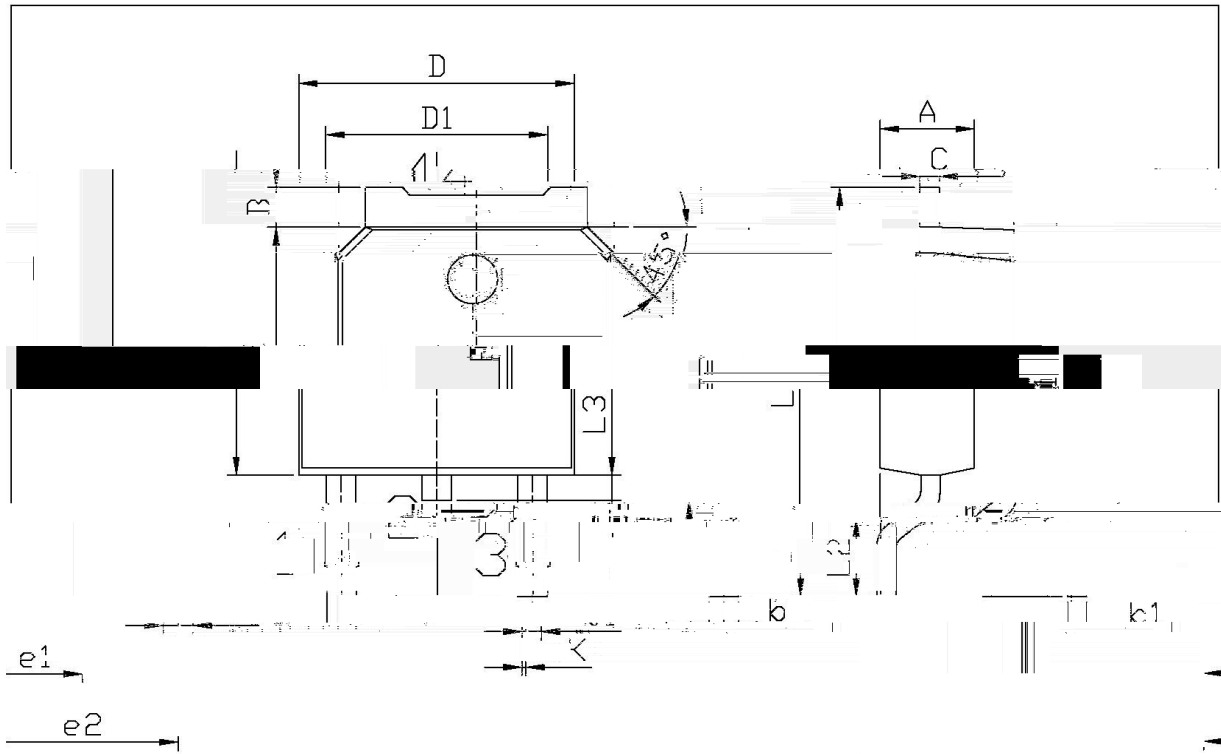


5. Safe Operating Area



6. Drain Current vs. Junction Temperature

/ Package Dimensions

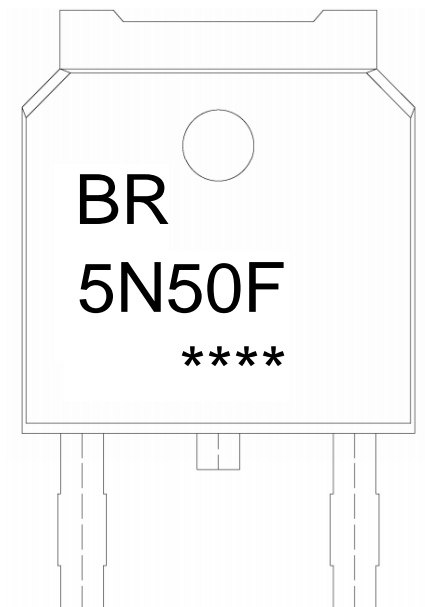


单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	1.25	2.20	B	2.40	5.95
B	0.95	0.95	e1	1.25	2.24
b	0.70	0.70	e2	0.60	4.63
b1	0.45	0.45	L1	0.55	9.85
C	0.45	0.55	L2	1.70	2.00
D	6.45	6.75	D3	0.60	0.90
D1	5.10	5.50	K	0.60	0.10

TO-252

/ Marking Instructions



BR

5N50F

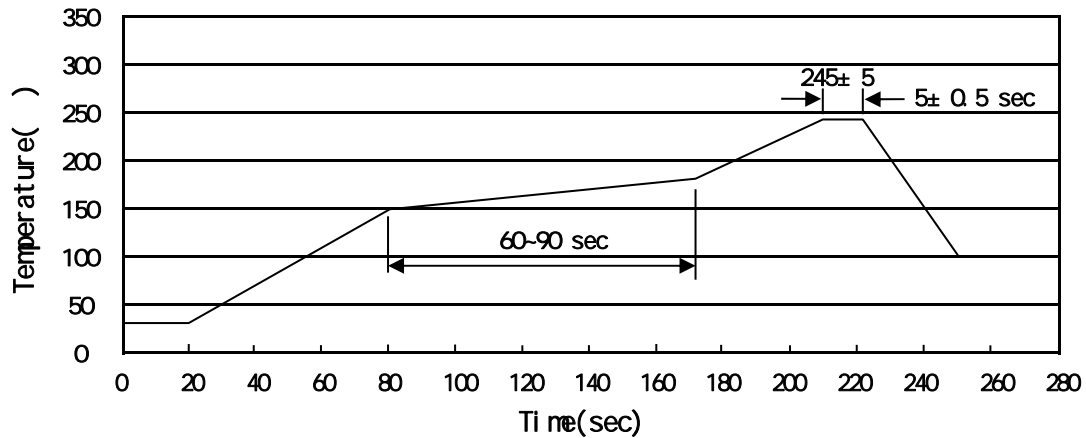
Note:

BR: Company Code

5N50F: Product Type Code

****: 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	Units					Dimension (unit mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
TO-252	2,500	2	5,000	6	30,000	13" x16	360x360x50	380x335x366

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-251/252	75	48	3,600	5	18,000	526x20.5x5.25	555x164x50	575x290x180

/ Notices