

/ Descriptions

TO-251 N MOS N-CHANNEL MOSFET in a TO-251 Plastic Package.

/ Features

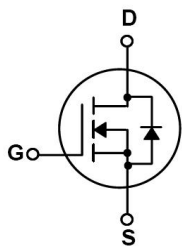
/ /
Low gate charge, low crss, fast switching.

/ Applications

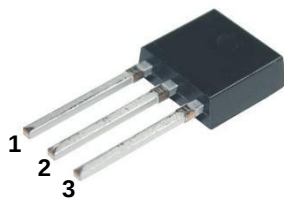
GF2GF

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

/ h_{FE} Classifications & Marking

See Marking Instructions.

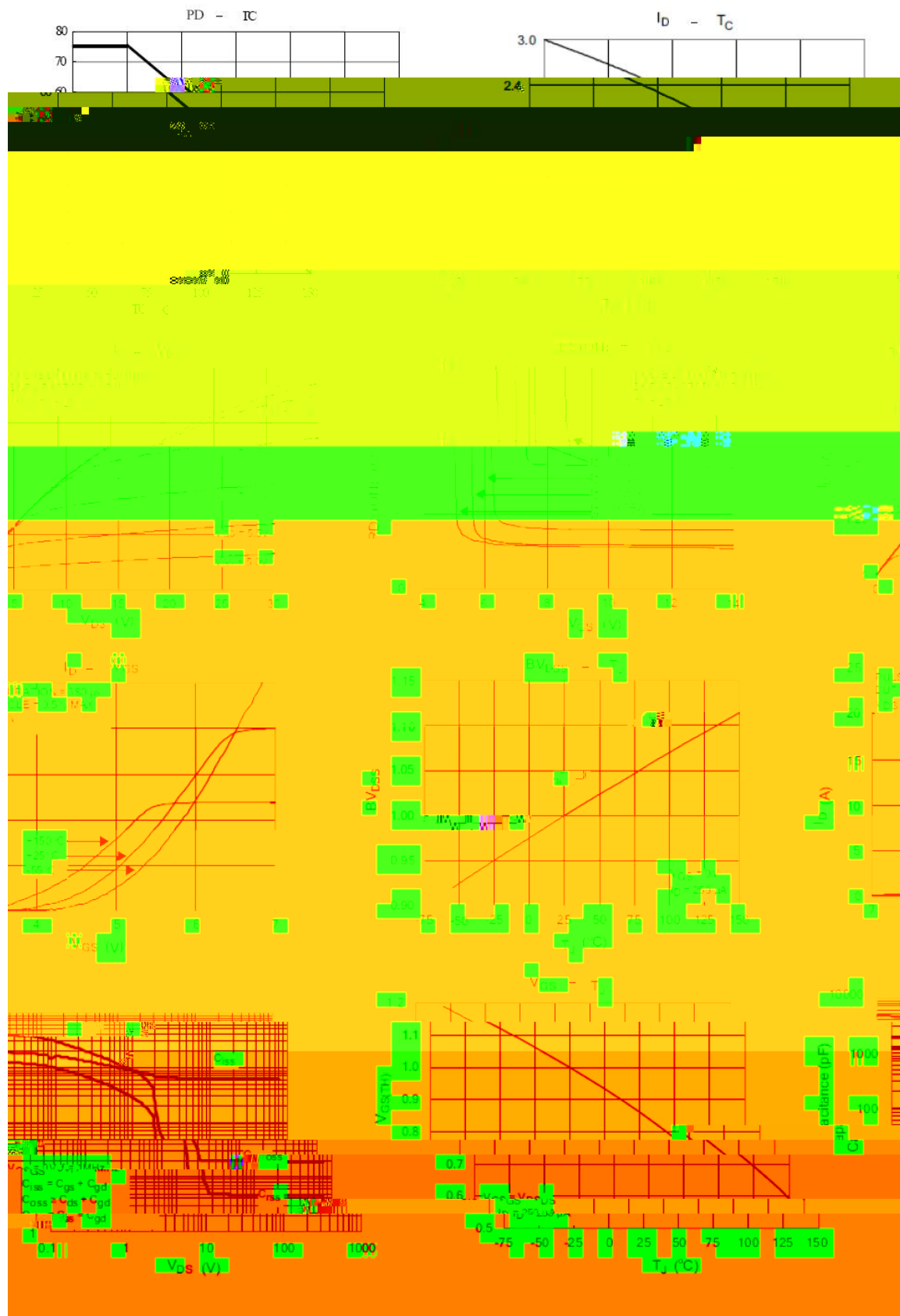
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	800	V
Drain Current	$I_{D(TC=25)}$	3.0	A
Drain Current	$I_{D(TC=100)}$	1.9	A
Drain Current - Pulsed	I_{DM}	12	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	120	mJ
Repetitive Avalanche Energy	E_{AR}	12	mJ
Avalanche Current	I_{AR}	1.5	A
Power Dissipation	$P_{D(TC=25)}$	75	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

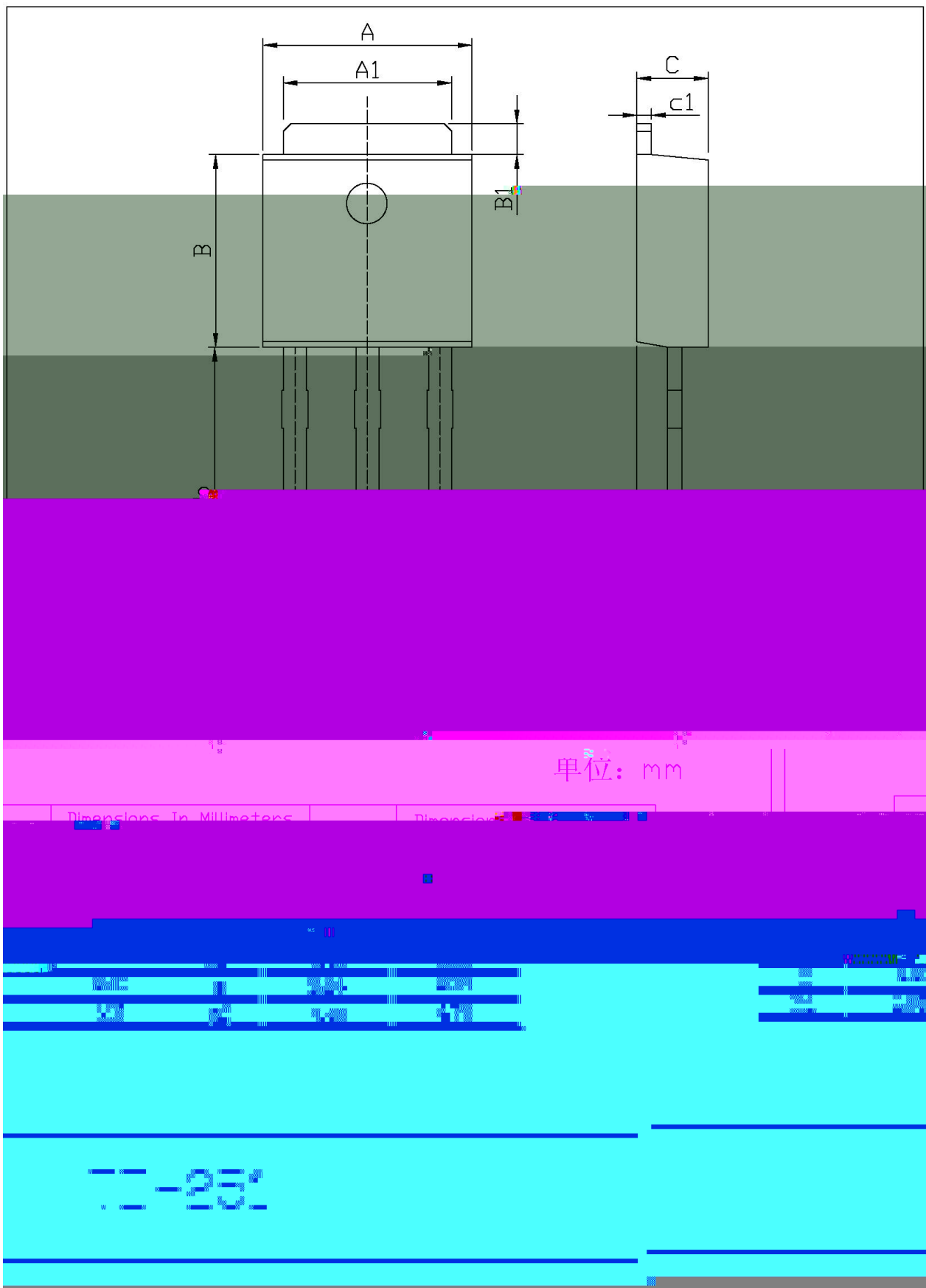
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	800			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=800V$ $V_{GS}=0V$			25	μA
		$V_{DS}=640V$ $V_{GS}=0V$			250	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.0		4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=1.5A$		4.0	4.8	Ω
Forward Transconductance	g_{FS}	$V_{DS}=15V$ $I_D=1.5A$		5.5		S
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=3.0A$			1.5	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		660		pF
Output Capacitance	C_{oss}			50		pF
Reverse Transfer Capacitance	C_{rss}			7		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=400V$ $I_D=3.0A$ $V_{GS}=10V$ $R_G=12\Omega$		16		ns
Turn-On Rise Time	t_r			15		ns
Turn-Off Delay Time	$t_{d(off)}$			40		ns
Turn-Off Fall Time	t_f			20		ns

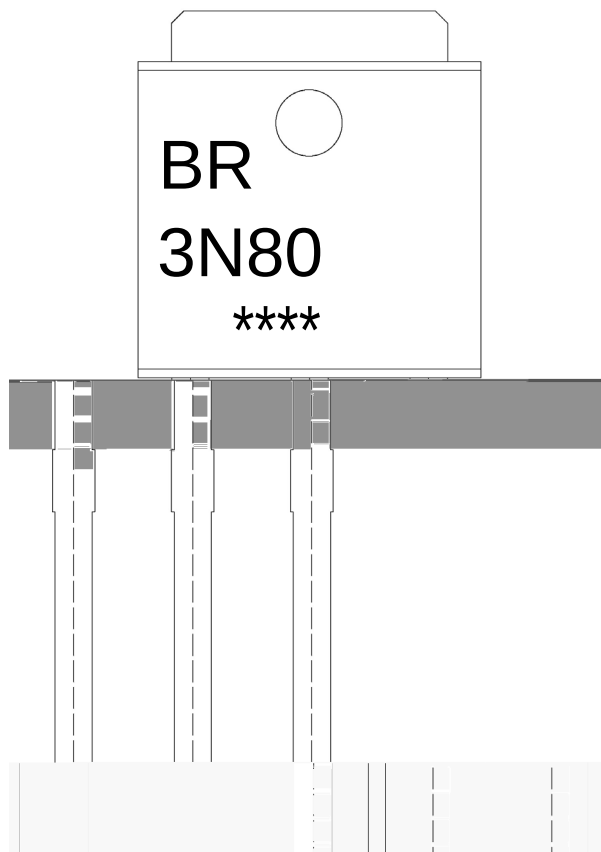
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

6Q ; 3

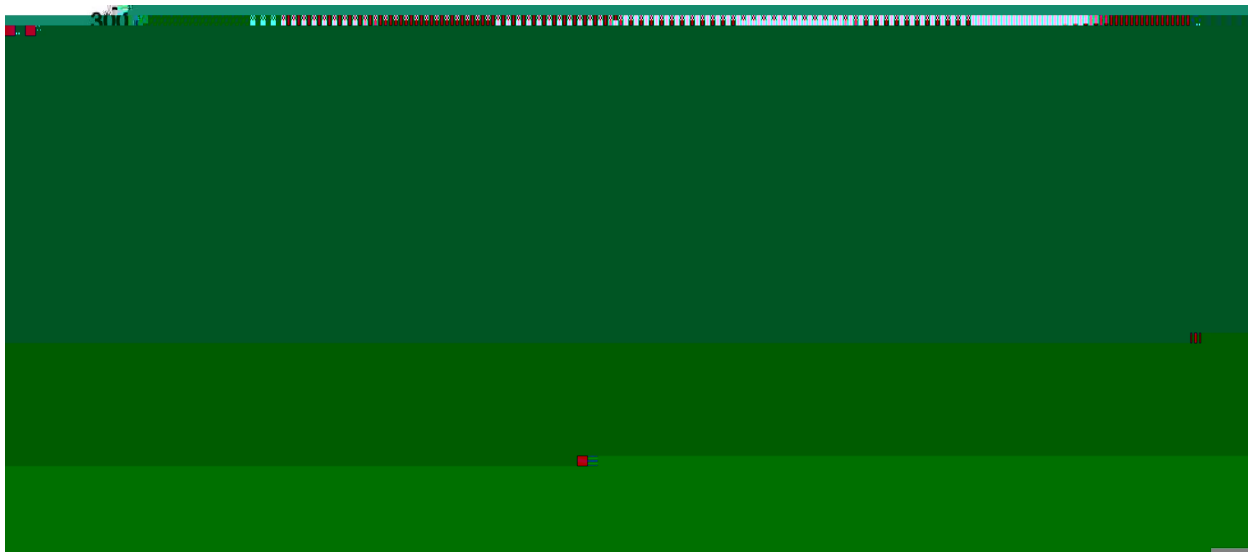
Note:

BR: Company Code

3N80: Product Type.

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

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-----|------|----|----------|---|
| 1 | 25 | 150% | 60 | 90sec; | 1.Preheating:25~150%, Time:60~90sec. |
| 2 | 255 | ±5% | 5 | ±0.5sec; | 2.Peak Temp.:255 ±5%, Duration:5 ±0.5sec. |
| 3 | | | 2 | 10%/sec. | 3. Cooling Speed: 2~10%/sec. |

/ Resistance to Soldering Heat Test Conditions

270 ±5% 10 ±1 sec. Temp.:270±5 Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量					Dimension 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	Bag 袋	Inner Box 盒	Outer Box 箱
TO-251	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195

/ 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