

**/ Descriptions**

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

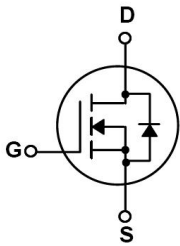
**/ Features**

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

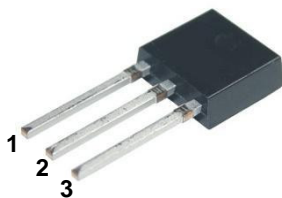
**/ Applications**

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<sub>FE</sub> Classifications & Marking**

See Marking Instructions.

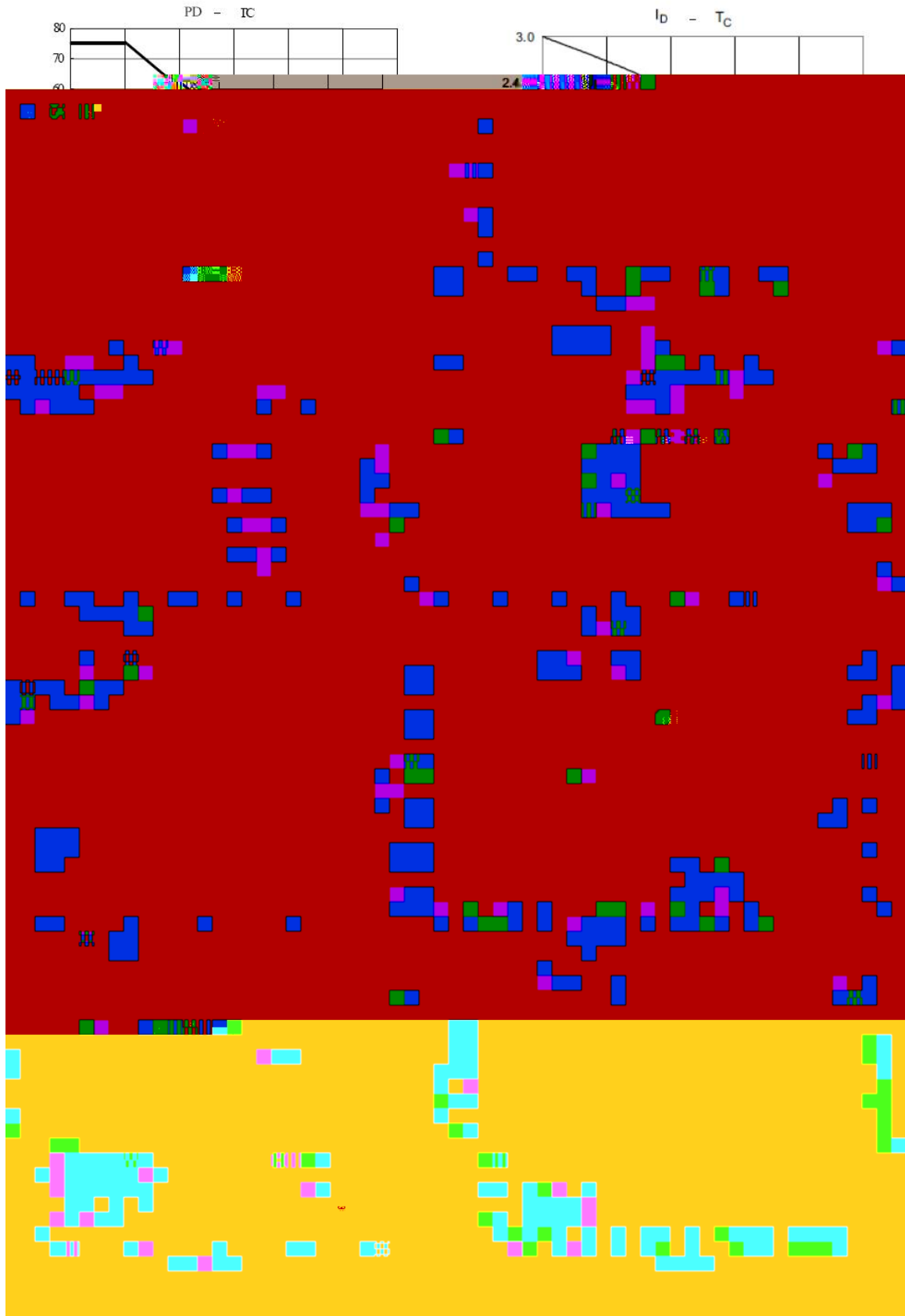
**/ Absolute Maximum Ratings(Ta=25 )**

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	

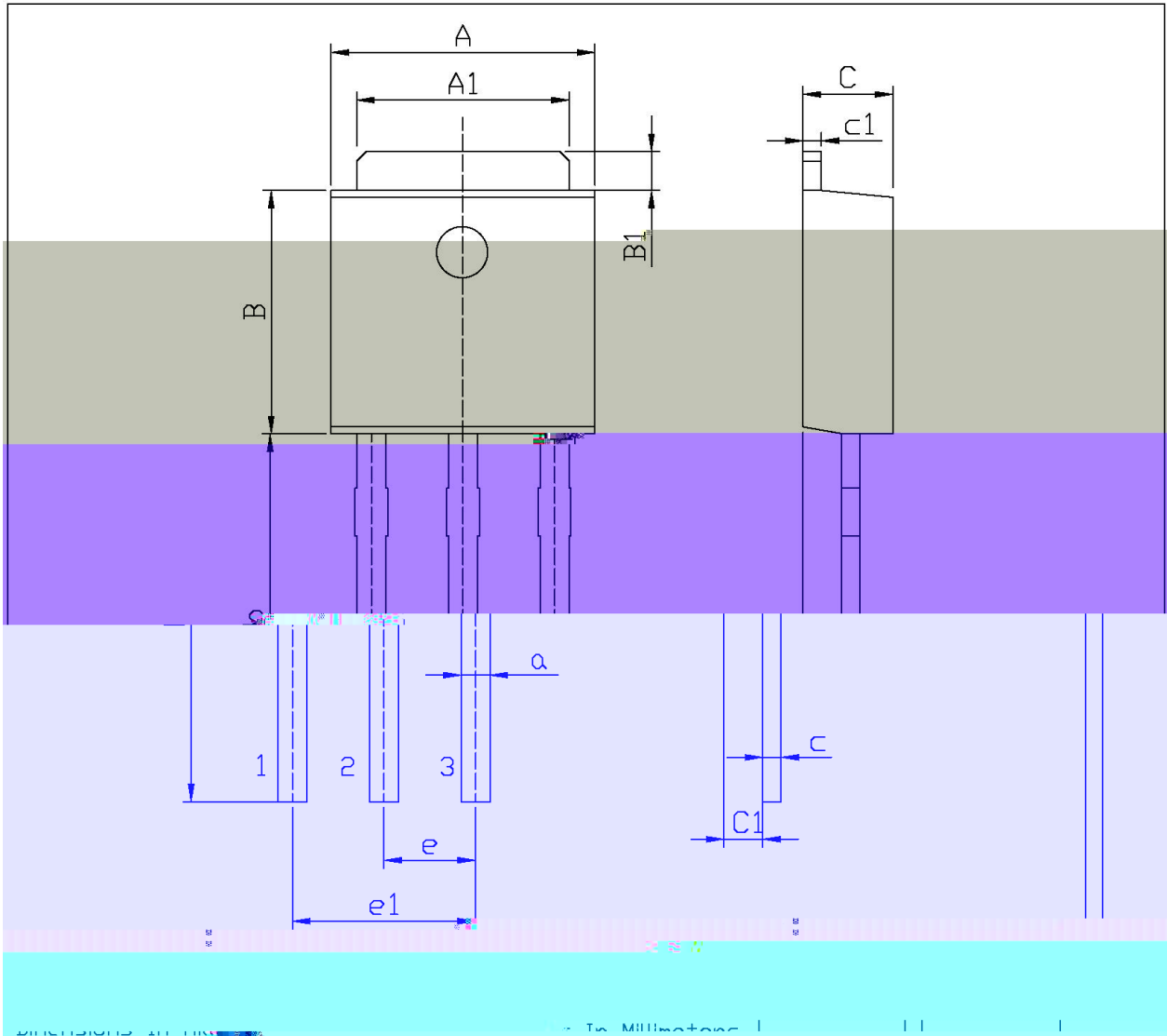
**/ Electrical Characteristics(Ta=25 )**

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	$\mu A$
		$V_{DS}=640V$ $V_{GS}=0V$			250	$\mu A$
Gate-Body Leakage Current Forward	$I_{GSS}$	$V_{GS}=\pm 30V$ $V_{DS}=0V$			±0.1	$\mu A$
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	$\Omega$
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**

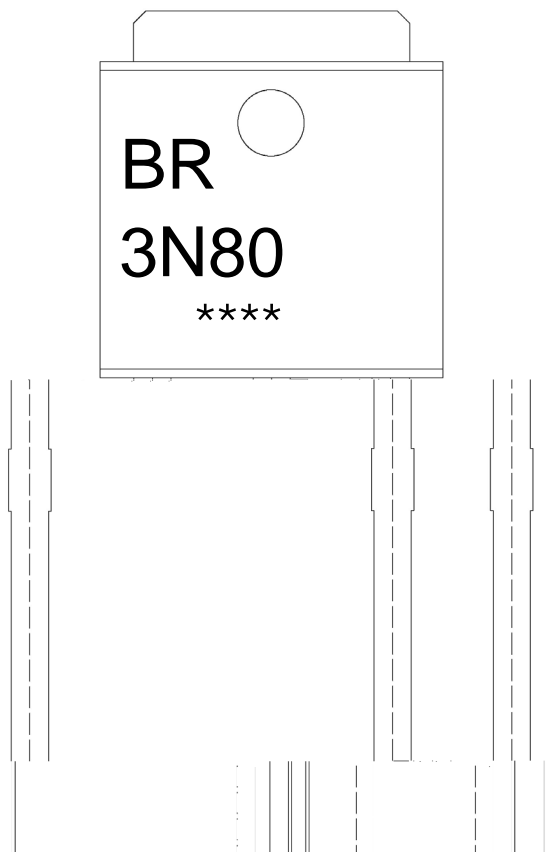


Dimensions are in millimeters

Symbol	Value	Symbol	Value	Symbol	Value
A	5.00	a	0.40	A1	3.40
B	5.95	c	0.55	B1	0.55
B1	0.95	c1	0.45	C	0.55
C	2.20	e	2.24	C1	2.34
C1	0.95	e1	4.43		

**TO-251**

**/ Marking Instructions**



BR

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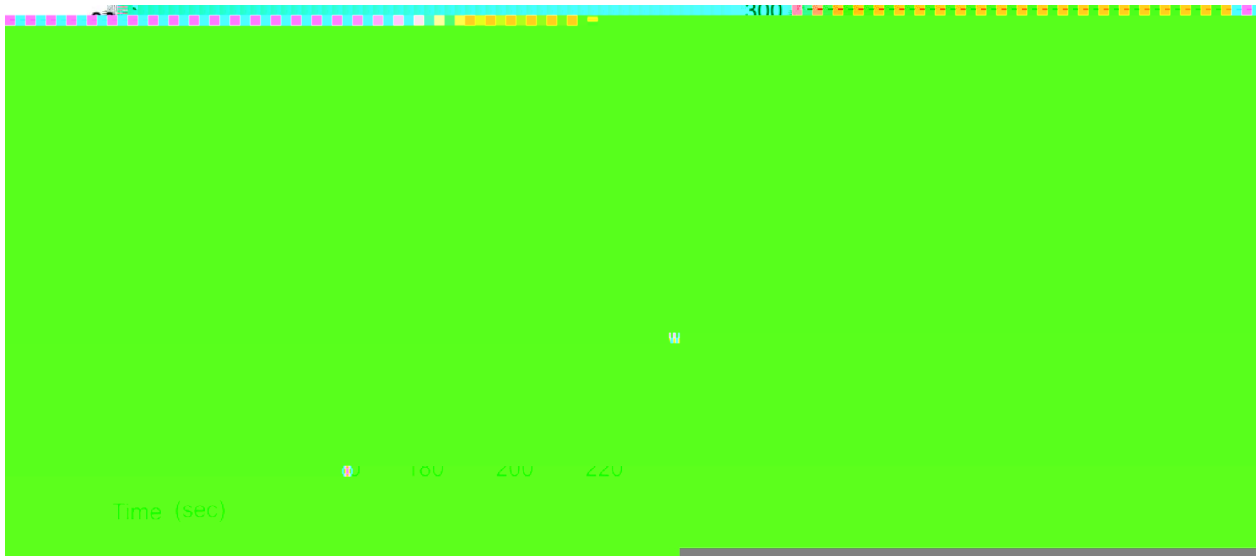
Note:

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 <sup>3</sup> )		
	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 <sup>3</sup> )		
	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