

描述 / Descriptions

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

特点 / Features

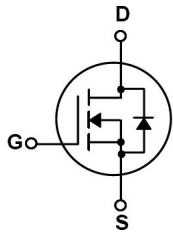
Low gate charge, low crss, fast switching.

应用 / Applications

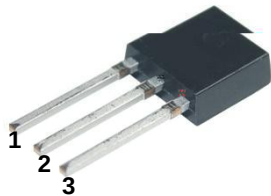
DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

等效电路 / Equivalent Circuit



引脚 / Pinning



PIN1 G PIN 2 D PIN 3 S

分类及标记 / h_{FE} Classifications & Marking

See Marking Instructions.

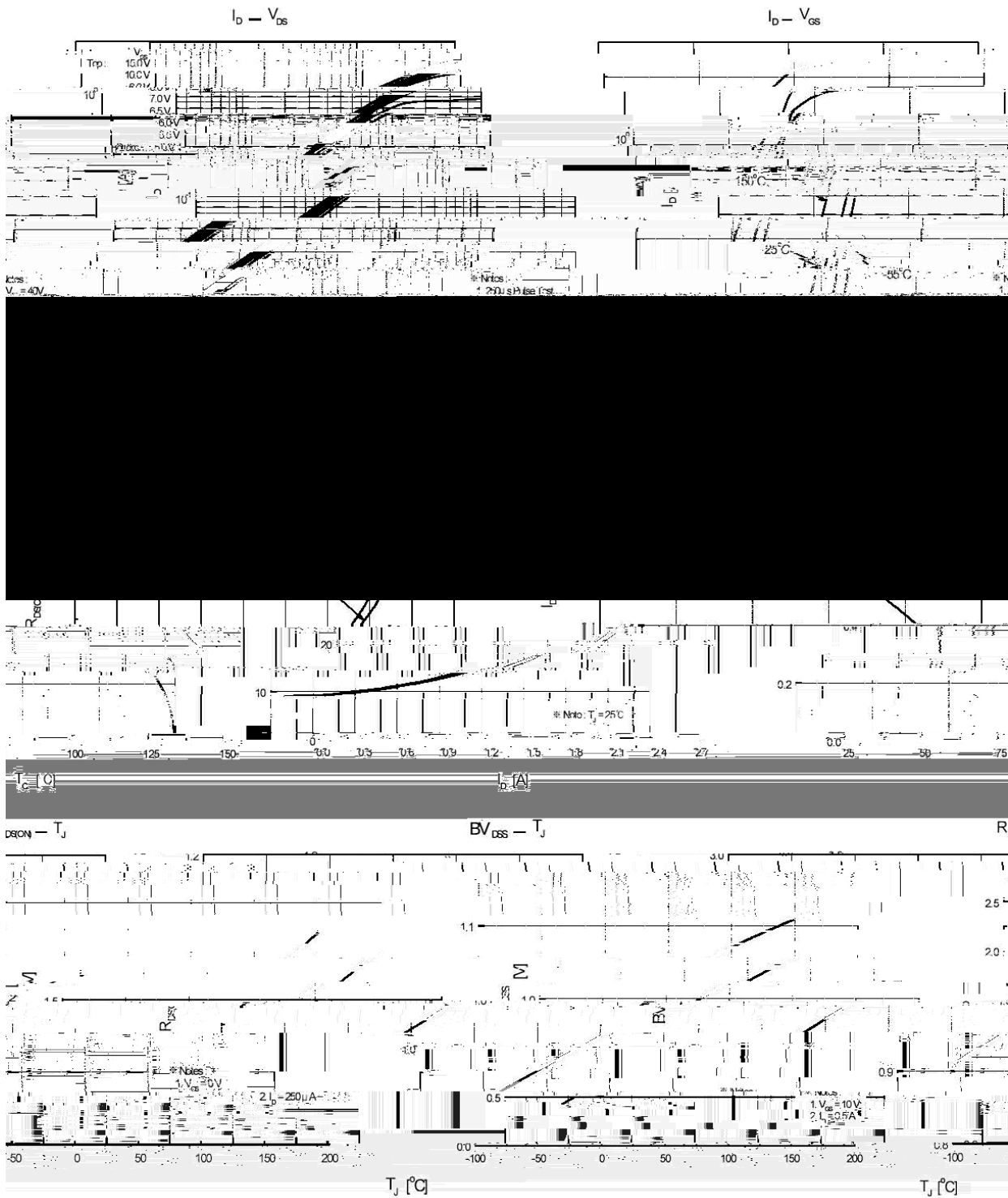
绝对最大额定值 / Absolute Maximum Ratings(Ta=25 ℃)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	600	V
Drain Current	$I_D(T_C=25\text{ }^{\circ}\text{C})$	1.0	A
Drain Current	$I_D(T_C=100\text{ }^{\circ}\text{C})$	0.6	A
Drain Current - Pulsed	I_{DM}	3.0	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	50	mJ
Repetitive Avalanche Energy	E_{AR}	2.8	mJ
Avalanche Current	I_{AR}	1.0	A
Power Dissipation	$P_D(T_C=25\text{ }^{\circ}\text{C})$	30	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

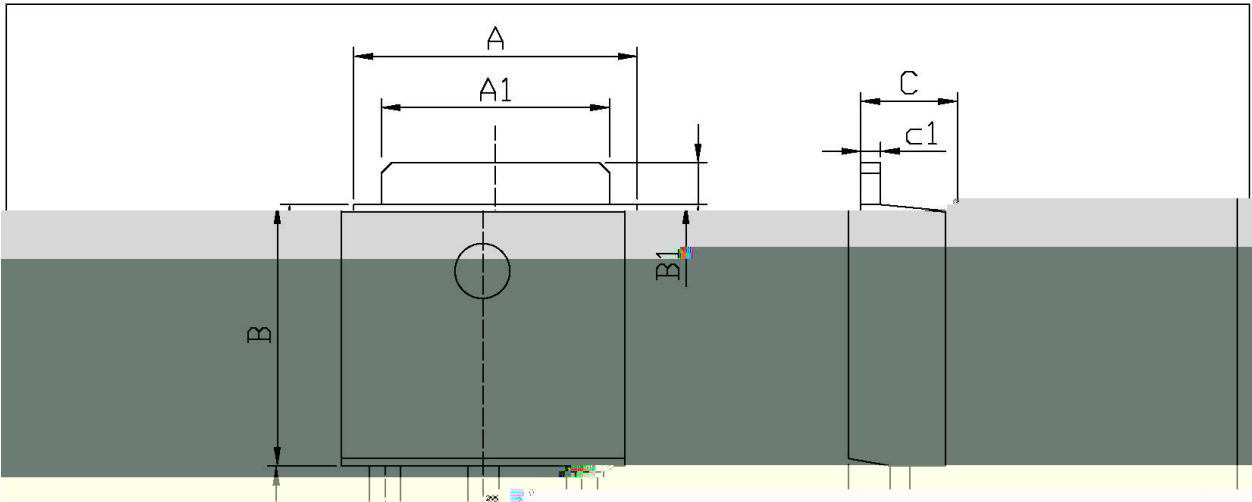
电 气 特 性 / Electrical Characteristics(Ta=25 ℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\mu A$	600			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=600V$ $V_{GS}=0V$			10	μA
		$V_{DS}=480V$ $T_C=125$			100	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	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=0.5A$		9.7	12	Ω
Forward Transconductance	g_{FS}	$V_{DS}=40V$ $I_D=0.5A$		0.97		S
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1.0A$			1.4	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		155	200	pF
Output Capacitance	C_{oss}			20	26	pF
Reverse Transfer Capacitance	C_{rss}			3.0	4.0	pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=300V$ $I_D=1.2A$ $R_G=50\Omega$		10	30	ns
Turn-On Rise Time	t_r			20	50	ns
Turn-Off Delay Time	$t_{d(off)}$			16	45	ns
Turn-Off Fall Time	t_f			25	60	ns

Electrical Characteristic Curve

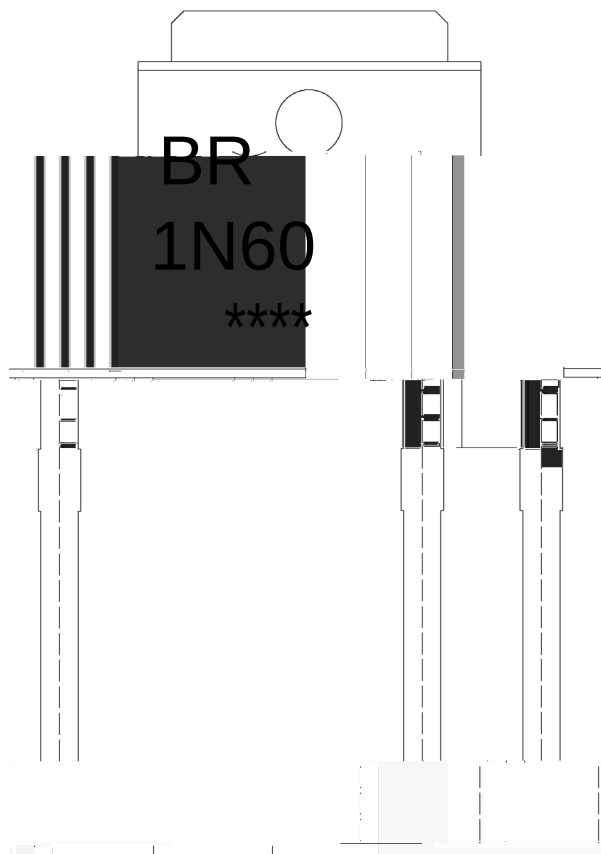


Package Dimensions



Symbol	Min	Max	Symbol	Min	Max
a	0.50	0.70	A	6.45	6.75
b	9.00	9.40	A1	5.10	5.50
c	2.65	2.85	B	5.95	6.25

4. 1N60 / Marking Instructions



BR

1N60

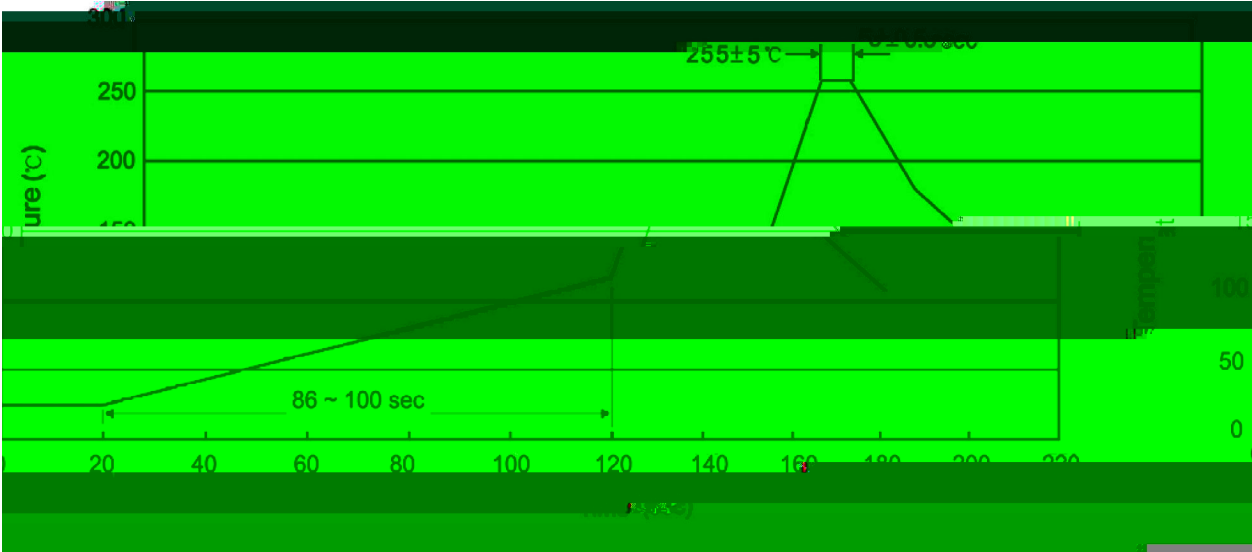
Note:

BR: Company Code

1N60: Product Type.

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

↓ \$ ¶ ŵ'E ¶ f (ŵ'ŝ) / 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. |

↓ ŵ ¶ ŵ'ŝ ¶ ¶ / Resistance to Soldering Heat Test Conditions

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

ŵ ŵ'ŝ ¶ / 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/Tube 只/套管	Units 包装数量	Dimension 包装尺寸 (unit: mm ³)
----------------------	--------------------	------------	---