

描述 / Descriptions

TO-252 塑封封装 N 沟道 MOS 场效应管。N-CHANNEL MOSFET in a TO-252 Plastic Package.

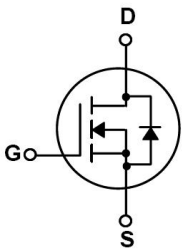
特征 / Features

低栅电荷,低反馈电容,开关速度快。
Low gate charge, low crss, fast switching.

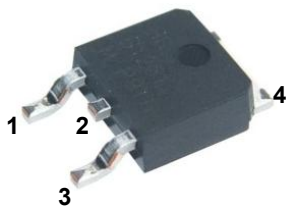
用途 / Applications

用于高功率 DC/DC 转换和功率开关。
These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1 : G PIN 2 : D PIN 3 : S PIN 4 : D

放大及印章代码 / h_{FE} Classifications & Marking

见印章说明。 See Marking Instructions.

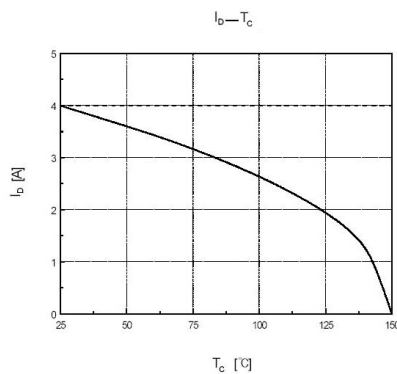
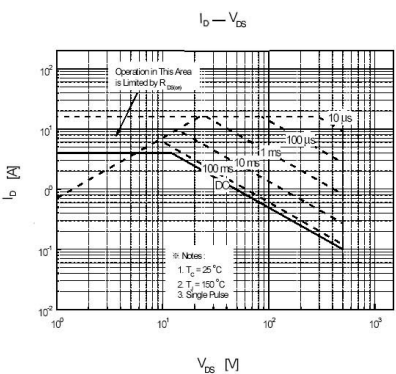
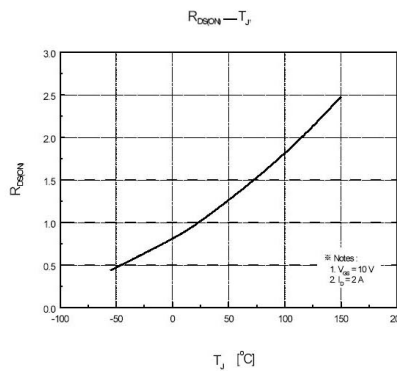
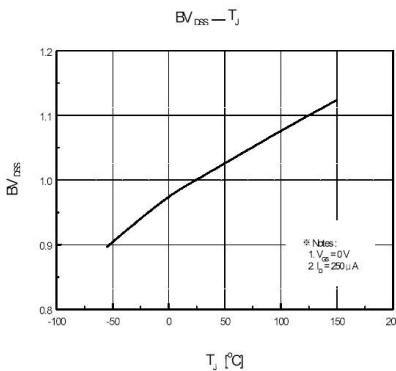
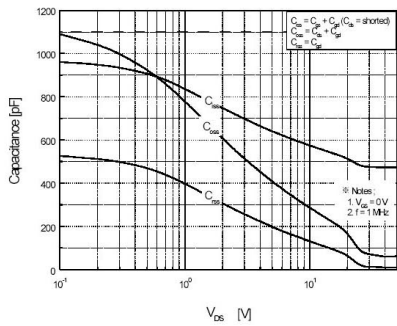
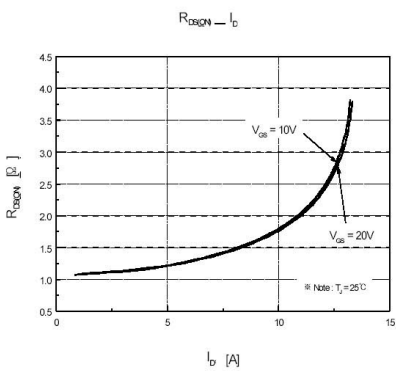
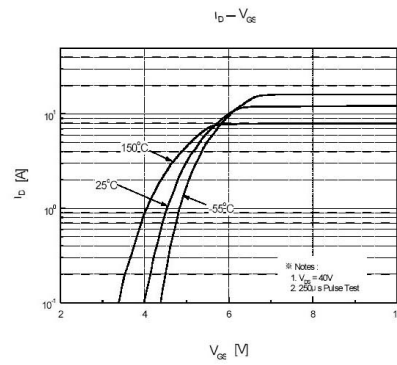
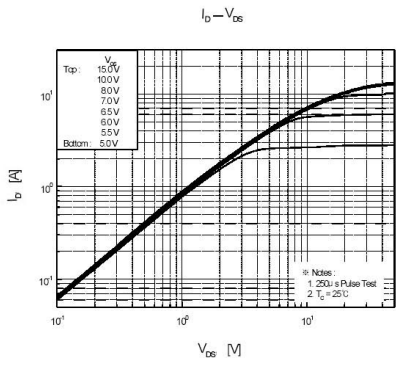
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V _{DSS}	500	V
Drain Current	I _D (Tc=25°C)	5	A
Drain Current	I _D (Tc=100°C)	2.8	A
Drain Current - Pulsed	I _{DM}	16	A
Gate-Source Voltage	V _{GSS}	±30	V
Avalanche Current	I _{AR}	4	A
Single Pulsed Avalanche Energy	E _{AS}	300	mJ
Repetitive Avalanche Energy	E _{AR}	4.8	mJ
Power Dissipation (T _A =25°C)	P _D	2.5	W
Power Dissipation (T _C =25°C)	P _D	48	W
Operating and Storage Temperature Range	T _J , T _{STG}	-55to150	°C

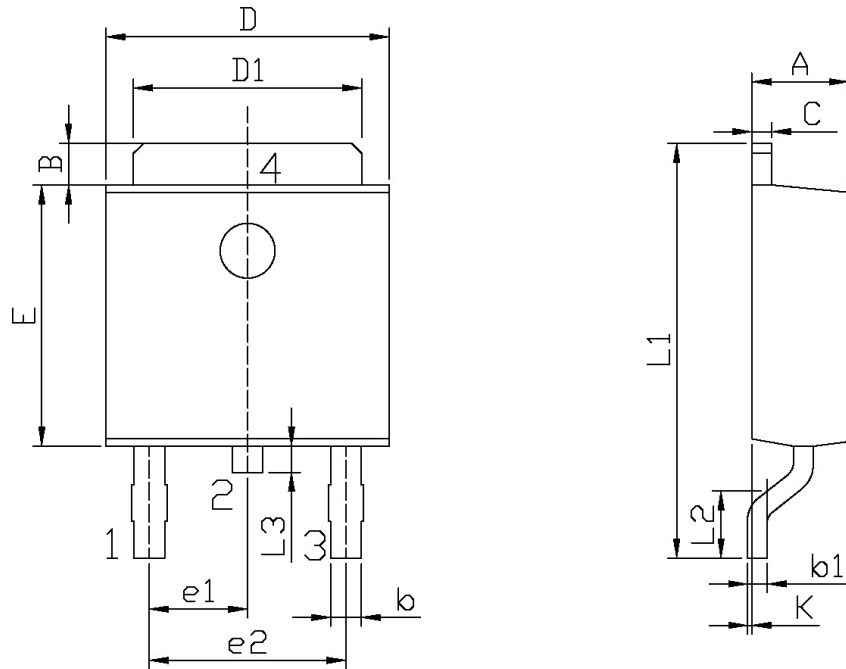
电性能参数 / Electrical Characteristics(Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250μA	500			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =500V V _{GS} =0V			1	μA
		V _{DS} =400V T _C =125°C			10	μA
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±30V V _{DS} =0V			±0.1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250μA	2		4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V I _D =2.5A		1.14	1.4	Ω
Forward Transconductance	g _{FS}	V _{DS} =40V I _D =2A		5.2		S
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _S =5A			1.4	V
Input Capacitance	C _{iss}	V _{DS} =25V V _{GS} =0V f=1MHz		480	625	pF
Output Capacitance	C _{oss}			80	105	pF
Reverse Transfer Capacitance	C _{rss}			15	20	pF
Turn-On Delay Time	t _{d(on)}	V _{DD} =250V I _D =5A R _G =25Ω		12	35	ns
Turn-On Rise Time	t _r			46	100	ns
Turn-Off Delay Time	t _{d(off)}			50	110	ns
Turn-Off Fall Time	t _f			48	105	ns

电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

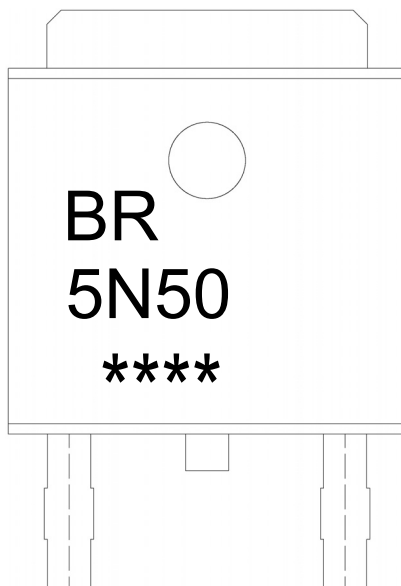


单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	2.20	2.40	E	5.95	6.25
B	0.95	1.25	e1	2.24	2.34
b	0.50	0.70	e2	4.43	4.73
b1	0.45	0.55	L1	9.45	9.95
C	0.45	0.55	L2	1.25	1.75
D	6.45	6.75	L3	0.60	0.90
D1	5.10	5.50	K	0.00	0.10

TO-252

印章说明 / Marking Instructions



说明：

BR： 为公司代码

5N50： 为型号代码

****： 为生产批号代码，随生产批号变化。

Note:

BR: Company Code

5N50: Product Type.

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

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
TO-252	2,500	2	5,000	5	25,000	13" ×16	360×360×50	385×257×392

套管包装 / 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

使用说明 / Notices

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