

描述 / Descriptions

TO-220F 塑封封装 N 沟道 MOS 场效应管。N-CHANNEL MOSFET in a TO-220F Plastic Package.

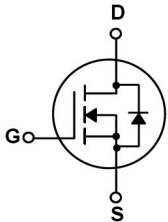
特征 / Features

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

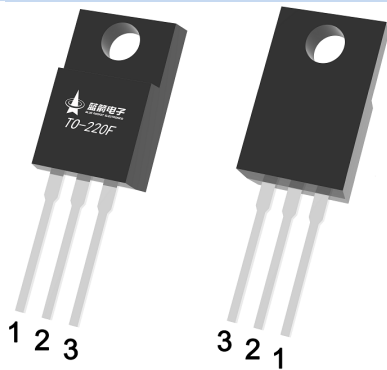
用途 / Applications

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

印章代码 / Marking

见印章说明。 See Marking Instructions.

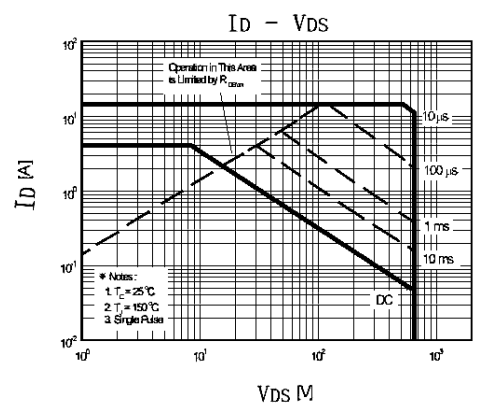
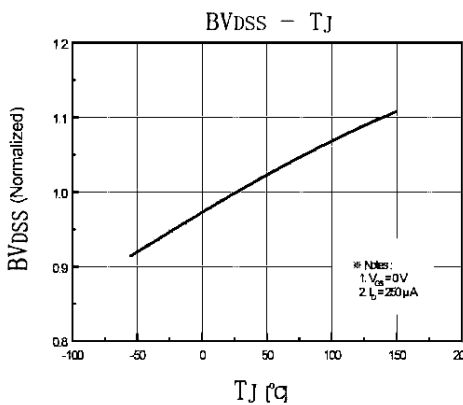
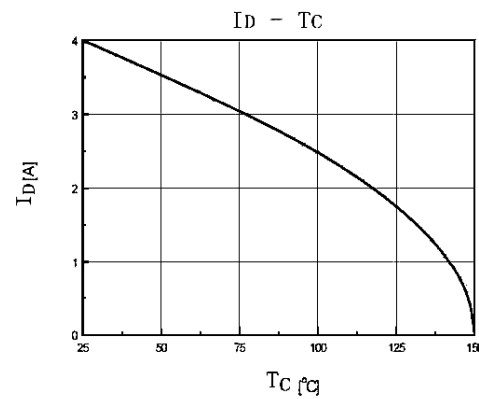
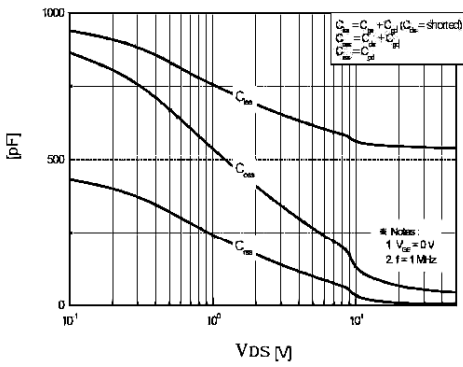
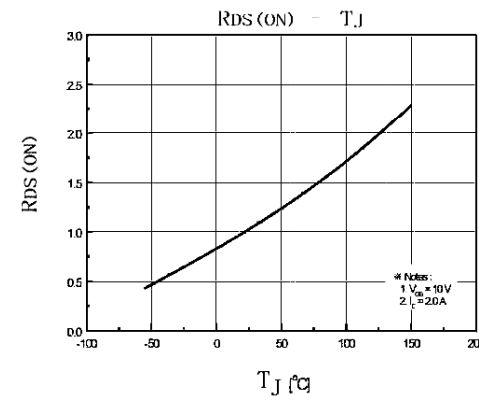
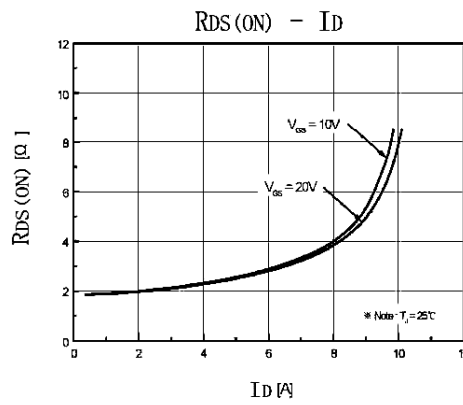
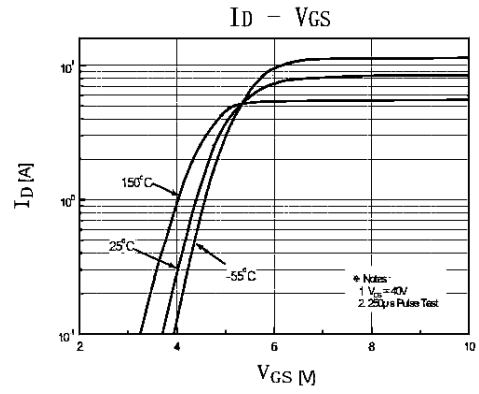
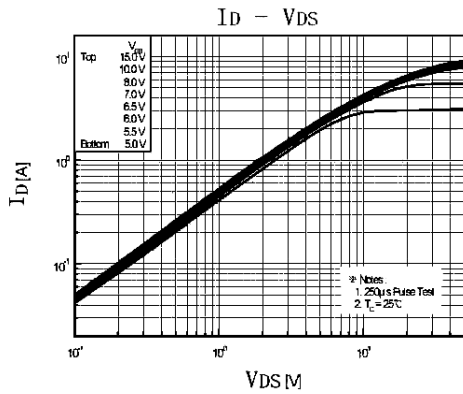
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V _{DSS}	650	V
Drain Current	I _D (Tc=25°C)	4.0	A
Drain Current	I _D (Tc=100°C)	2.5	A
Drain Current - Pulsed	I _{DM}	16	A
Gate-Source Voltage	V _{GS}	±30	V
Single Pulsed Avalanche Energy	E _{AS}	240	mJ
Repetitive Avalanche Energy	E _{AR}	10	mJ
Avalanche Current	I _{AR}	4.0	A
Power Dissipation	P _D (Tc=25°C)	33	W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to 150	°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	650			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =650V V _{GS} =0V			1	μA
		V _{DS} =480V T _C =125°C			100	μA
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±30V V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250μA	2.0		4.0	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V I _D =2.0A		2.4	2.7	Ω
Forward Transconductance	g _{FS}	V _{DS} =40V I _D =2.0A		4.7		S
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _S =4.0A			1.4	V
Input Capacitance	C _{iSS}	V _{DS} =25V V _{GS} =0V f=1.0MHz		545	710	pF
Output Capacitance	C _{oss}			60	80	
Reverse Transfer Capacitance	C _{rss}			8	11	
Reverse recovery time	t _{rr}	I _{SD} =4.0A di/dt=100A/μs V _{DD} =24V T _J = 150°C		400		ns
Turn-On Delay Time	t _{d(on)}	V _{DD} =300V I _D =4.0A R _G =25Ω		10	30	ns
Turn-On Rise Time	t _r			35	80	
Turn-Off Delay Time	t _{d(off)}			45	100	
Turn-Off Fall Time	t _f			40	90	

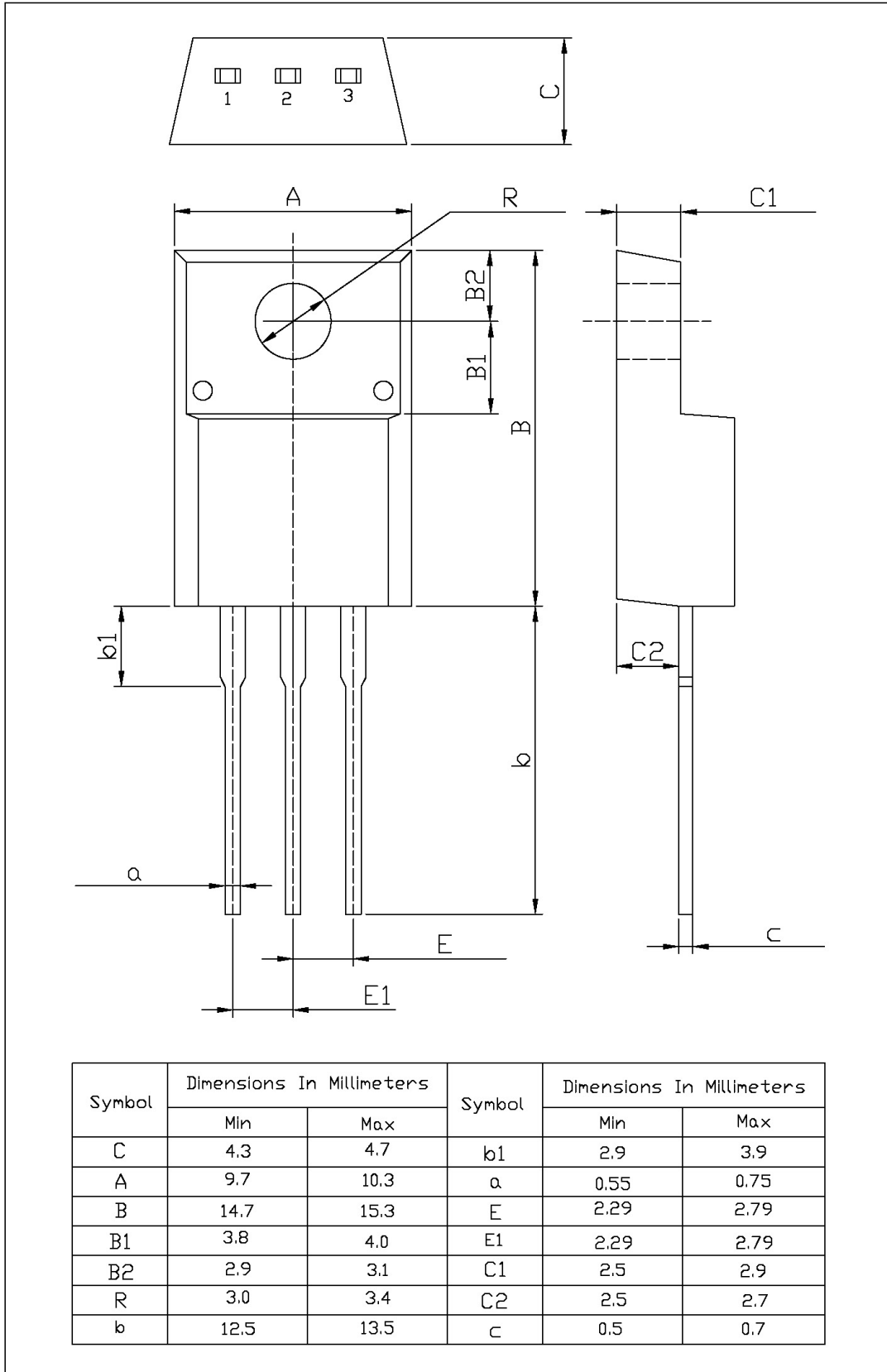
电参数曲线图 / Electrical Characteristic Curve



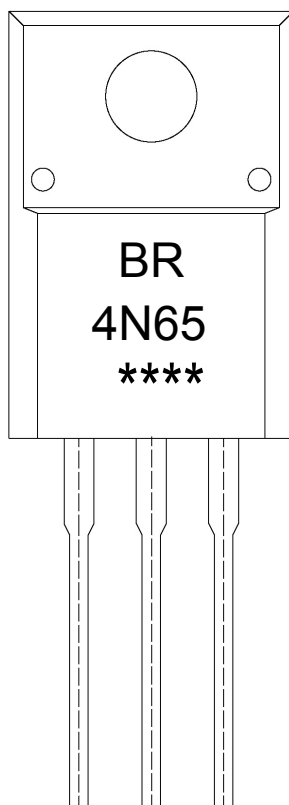
外形尺寸图 / Package Dimensions

TO-220F

单位: mm



印章说明 / Marking Instructions



说明：

BR： 为公司代码

4N65： 为型号代码

****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

4N65: Product Type

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

波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec；
- 2、峰值温度 255±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.:255±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：270±5°C 时间：10±1 sec. Temp.:270±5°C Time:10±1 sec

包装规格 / Packaging SPEC.

散件包装 / 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-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

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-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

使用说明 / Notices