

描述 / Descriptions

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

特征 / Features

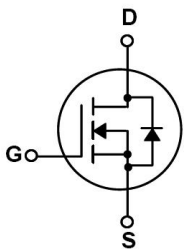
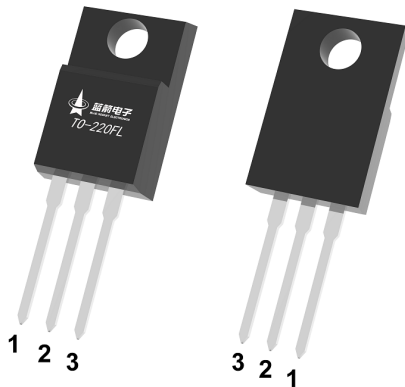
低栅电荷,低反馈电容,开关速度快。

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.

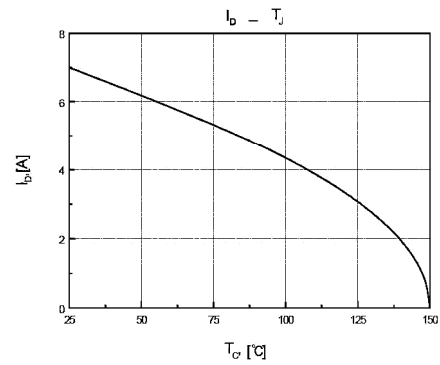
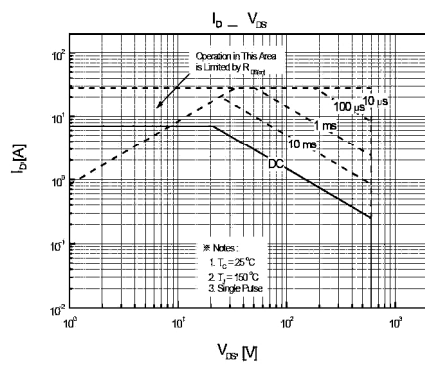
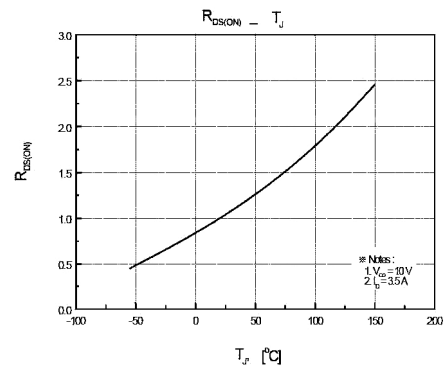
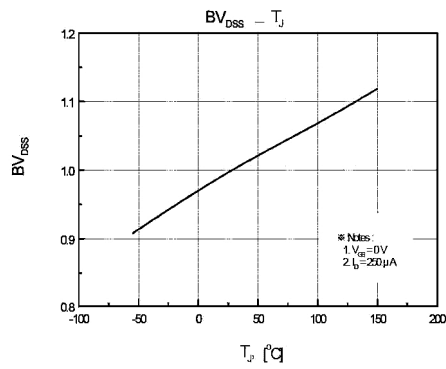
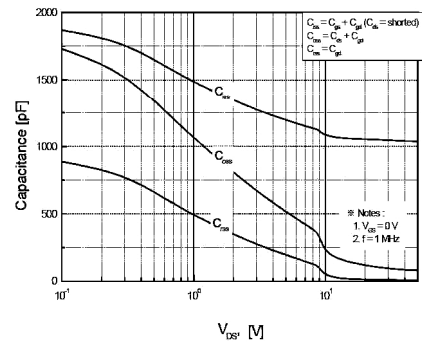
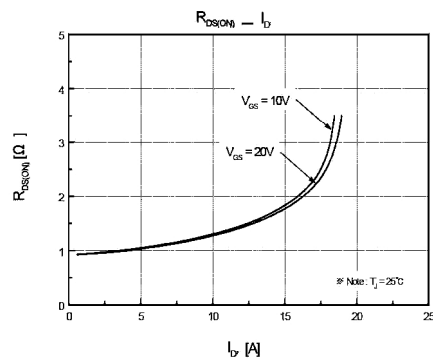
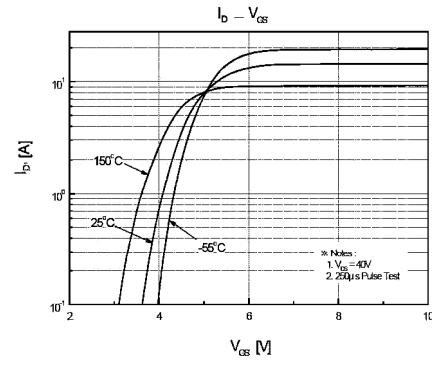
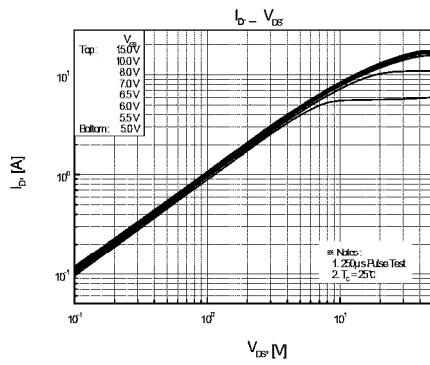
极限参数 / Absolute Maximum Ratings(Ta=25℃)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DS}	650	V
Drain Current	$I_D(T_C=25^{\circ}\text{C})$	7.0	A
Drain Current	$I_D(T_C=100^{\circ}\text{C})$	4.4	A
Drain Current - Pulsed	I_{DM}	28	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	420	mJ
Repetitive Avalanche Energy	E_{AR}	14.7	mJ
Avalanche Current	I_{AR}	7.0	A
Power Dissipation	$P_D(T_C=25^{\circ}\text{C})$	48	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	℃

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			1.0	μA
		V _{DS} =520V 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 =3.5A		1.1	1.3	Ω
Forward Transconductance	g _{FS}	V _{DS} =40V I _D =3.5A		8.2		S
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _S =7.0A			1.4	V
Input Capacitance	C _{iSS}	V _{DS} =25V V _{GS} =0V f=1.0MHz		1100	1500	pF
Output Capacitance	C _{oss}			110	150	pF
Reverse Transfer Capacitance	C _{rSS}			12	16	pF
Total Gate Charge	Q _g	I _D =7.0A V _{DS} = 520V V _{GS} = 10V		28		nC
Gate-to-Source Charge	Q _{gs}			7		nC
Gate-to-Drain Charge	Q _{gd}			12		nC
Turn-On Delay Time	t _{d(on)}	V _{DD} =300V I _D =7.0A R _G =25Ω		15	40	ns
Turn-On Rise Time	t _r			30	70	ns
Turn-Off Delay Time	t _{d(off)}			110	230	ns
Turn-Off Fall Time	t _f			40	90	ns

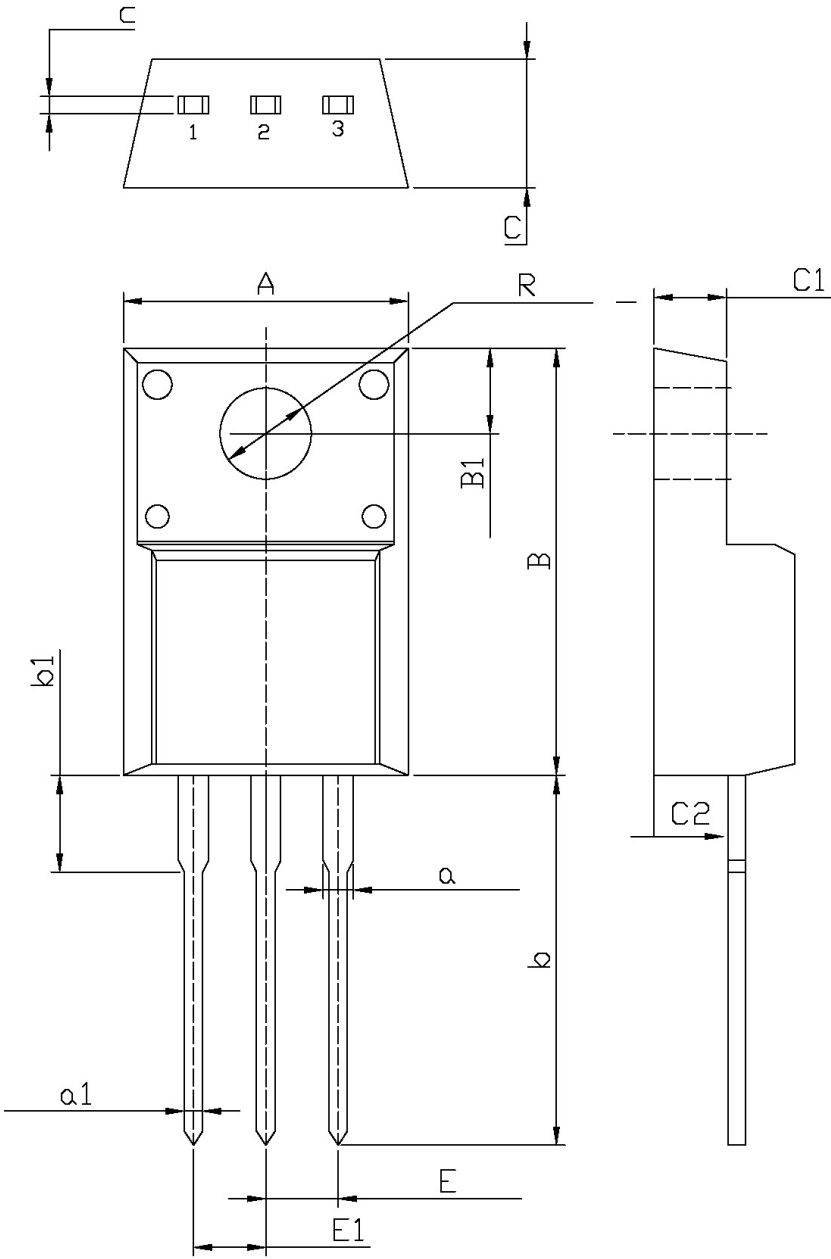
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

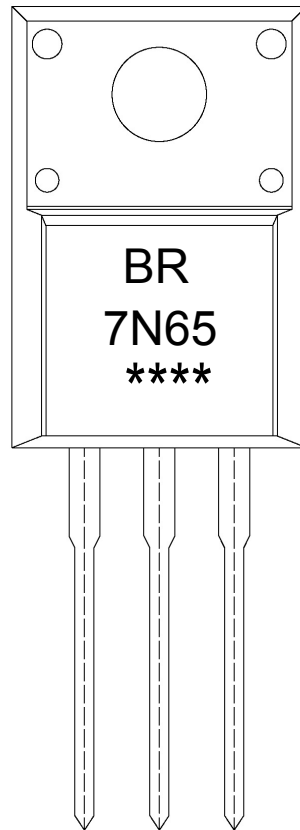
TO-220FL

单位：mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
C	4.5	4.9	b1	2.90	3.90
C	0.4	0.6	a	1.08	1.48
A	9.96	10.36	a1	0.70	0.90
B	15.67	16.07	E	2.34	2.74
B1	3.30	3.50	E1	2.34	2.74
R	3.08	3.28	C1	2.34	2.74
b	12.48	13.48	C2	2.56	2.96

印章说明 / Marking Instructions



说明：

BR： 为公司代码

7N65： 为型号代码

****： 为生产批号代码，随生产批号变化

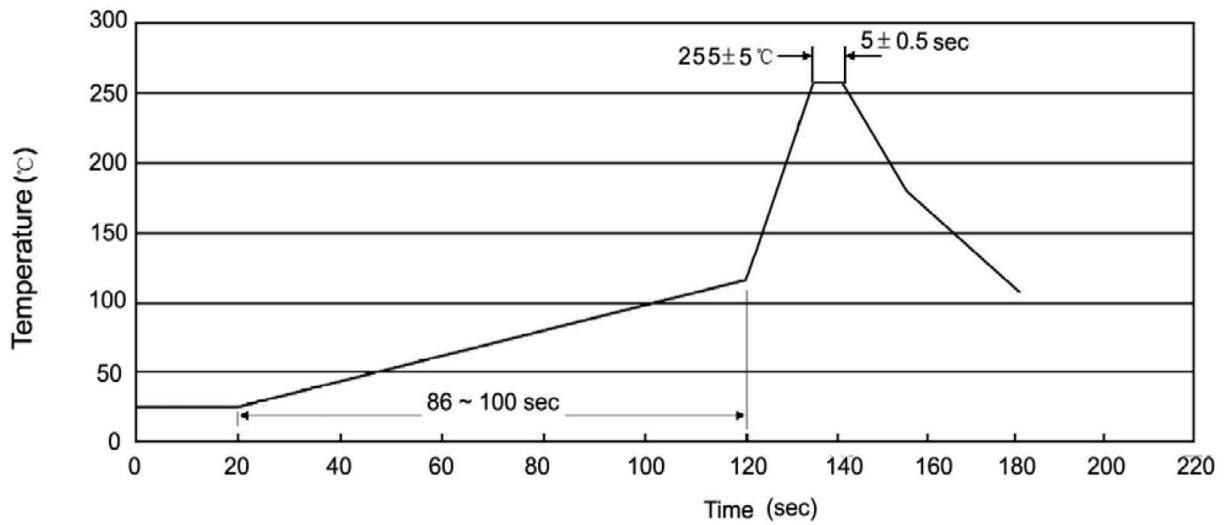
Note:

BR: Company Code

7N65: Product Type Code

****: 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.

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-220FL	50	20	1,000	5	5,000	532×33×7.0	555×164×50	575×290×180

使用说明 / Notices