描述 / Descriptions

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

特征 / Features

$R_{DS(on)}$小，门电荷低，C_{rss}小，开关速度快。

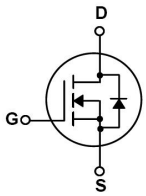
Low $R_{DS(on)}$,low gate charge, low C_{rss}, fast switching.

用途 / Applications

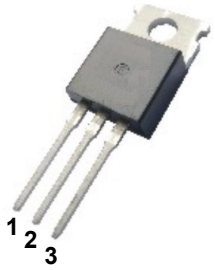
用于低压电路如：汽车电路、DC/DC 转换、便携式产品的电源高效转换。

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1：G　　PIN 2：D　　PIN 3：S

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

见印章说明。See Marking Instructions.

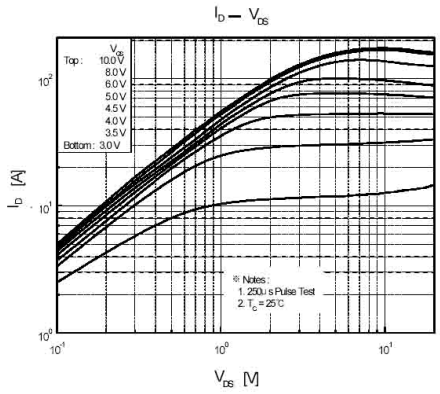
极限参数 / Absolute Maximum Ratings(Ta=25℃)

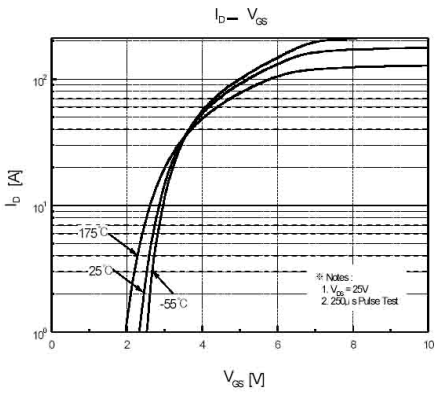
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain Current	I_D(T_c=25℃)	50	A
Drain Current	I_D(T_c=100℃)	35.4	A
Drain Current - Pulsed	I_{DM}	200	A
Gate-Source Voltage	V_{GS}	±20	V
Single Pulsed Avalanche Energy	E_{AS}	490	mJ
Avalanche Current	E_{AR}	12	mJ
Power Dissipation	P_D(Tc=25℃)	120	W
Operating Temperature Range	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

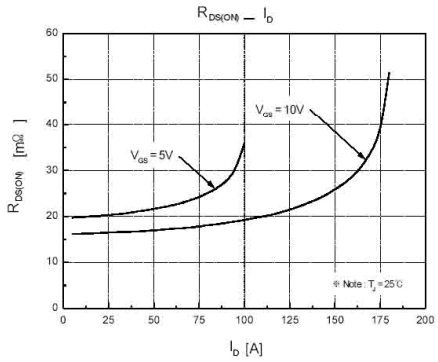
电性能参数 / Electrical Characteristics(Ta=25℃)

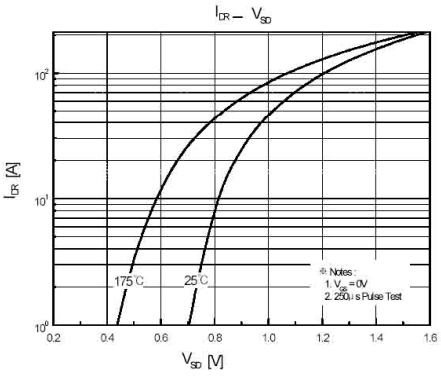
参数 Parameter	符号 Symbol	测试条件 Test Conditions		最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V	V_{GS}=0V			1.0	μA
		V_{DS}=48V	T_C=150℃			10	
Gate-Body Leakage Current, Forward	I_{GSS}	V_{GS}=±20V	V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	2		4	V
Total Gate Charge	Q_g	V_{DS}=48V V_{GS}=10V	I_D=50A		32	42	nC
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V	I_D=25A		0.018	0.022	Ω
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_S=50A			1.5	V
Input Capacitance	C_{iss}	V_{DS}=25V f=1.0MHz	V_{GS}=0V		1050	1365	pF
Output Capacitance	C_{oss}				460	600	
Reverse Transfer Capacitance	C_{rss}				70	90	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=30V R_G=25Ω	I_D=25A		20	50	ns
Turn-On Rise Time	t_r				100	210	
Turn-Off Delay Time	$t_{d(off)}$				80	170	
Turn-Off Fall Time	t_f				85	180	

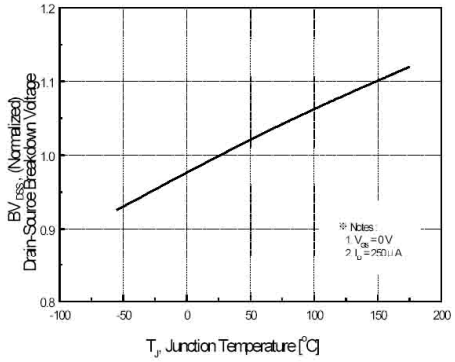
电参数曲线图 / Electrical Characteristic Curve

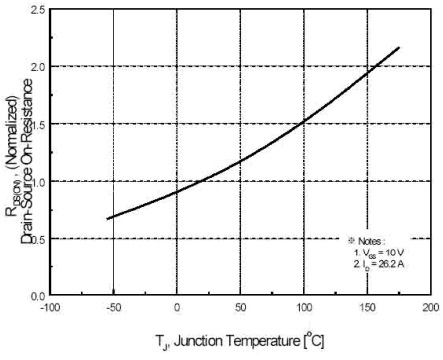


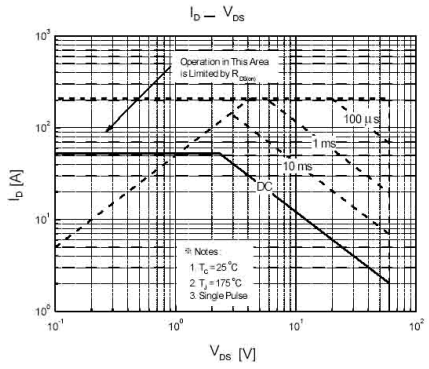


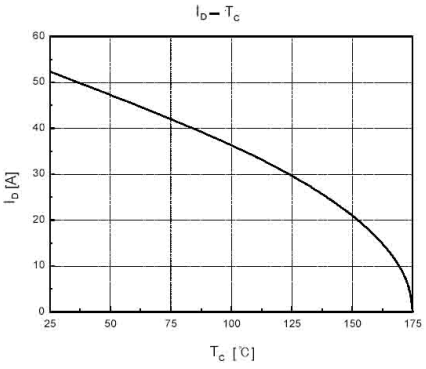






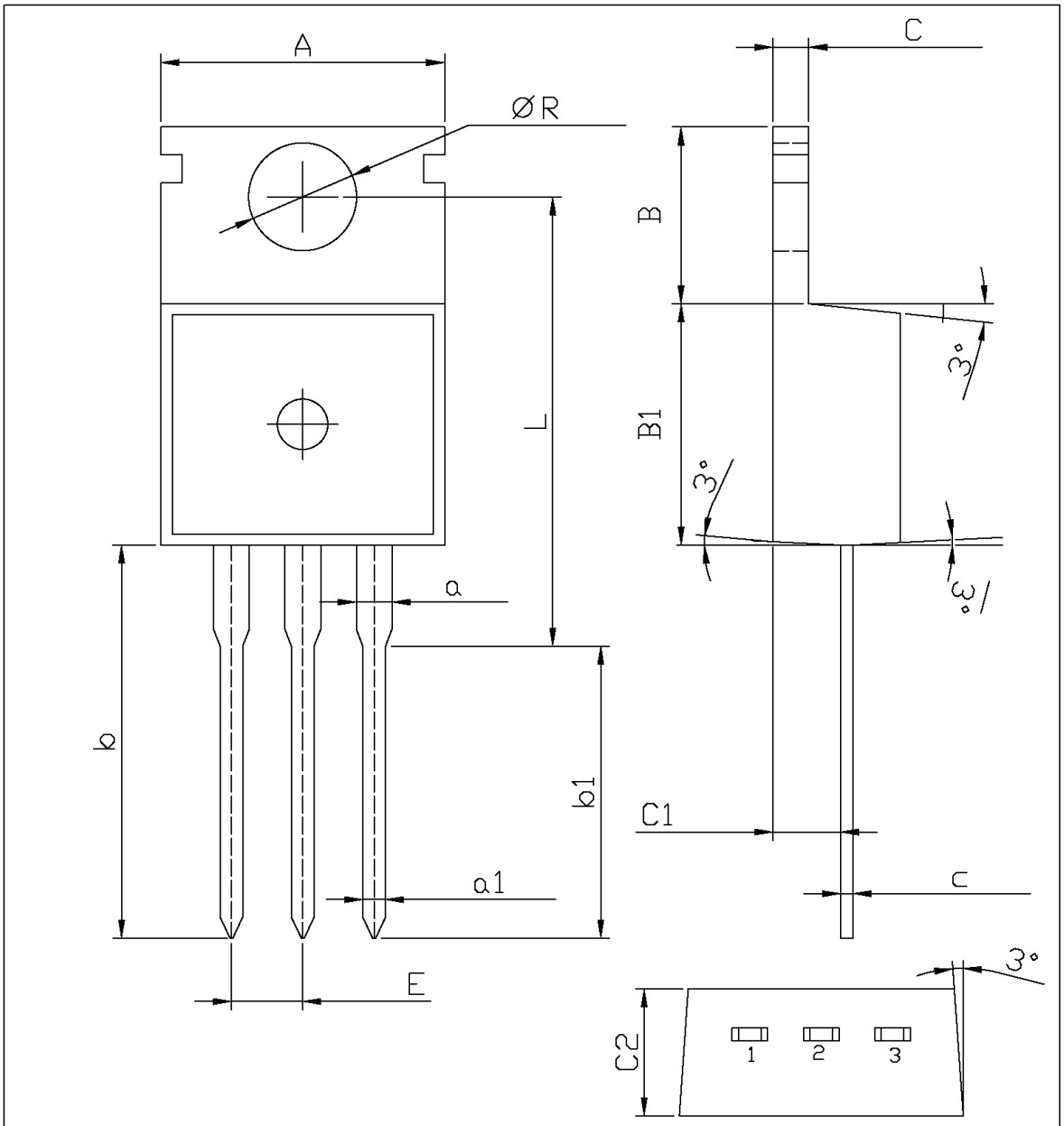






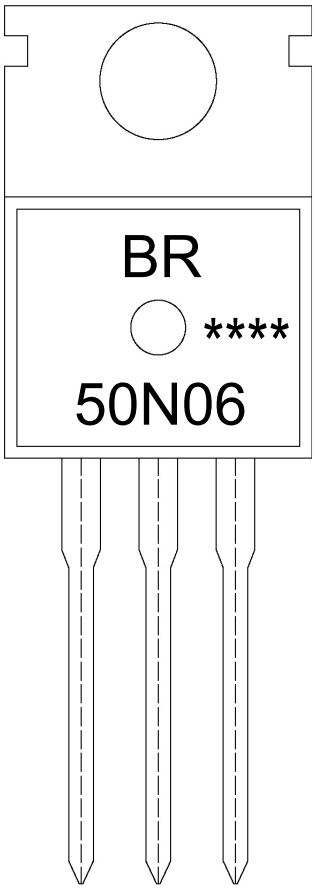
外形尺寸图 / Package Dimensions

TO-220 单位：mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	9.8	10.2	C	1.2	1.4
R	3.56	3.64	B	6.3	6.7
L	15.7	16.1	B1	9.0	9.4
b	12.6	13.6	C1	2.2	2.6
b1	9.6	10.6	a1	0.7	0.9
a	1.22	1.32	c	0.4	0.6
E	2.34	2.74	C2	4.3	4.7

印章说明 / Marking Instructions



说明：

BR： 为公司代码

50N06： 为型号代码

****： 为生产批号代码，随生产批号变化

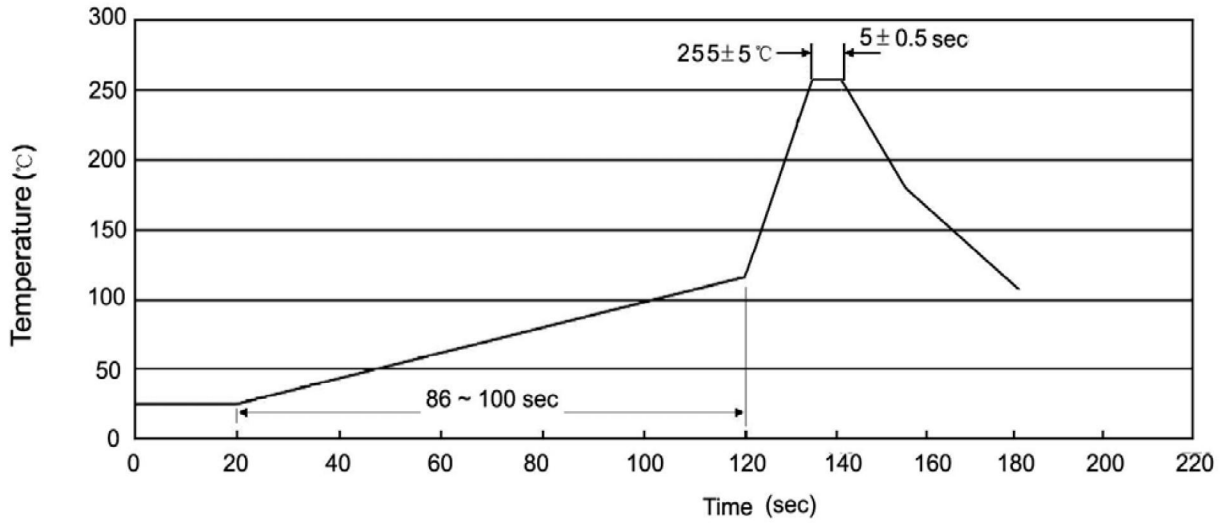
Note:

BR: Company Code

50N06: 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℃，时间 60～90sec;

2、峰值温度 255±5℃，时间持续为 5±0.5sec;

3、焊接制程冷却速度为 2～10℃/sec.

Note:

1.Preheating:25~150℃, Time:60~90sec.

2.Peak Temp.:255±5℃, Duration:5±0.5sec.

3. Cooling Speed: 2~10℃/sec.

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

温度：270±5℃　　时间：10±1 sec.　　Temp.:270±5℃　　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: mm³)		
	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: mm³)		
	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