BRP50N20

Rev.D Nov.-2015

描述 / Descriptions

TO-3P 塑封封装 N 沟 MOS 场效应管。N-Channel MOSFET in a TO-3P Plastic Package.

特征 / Features

低反馈电容，开关速度快。

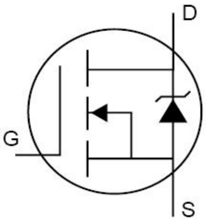
Low effective output capacitance, high switch speed.

用途 / Applications

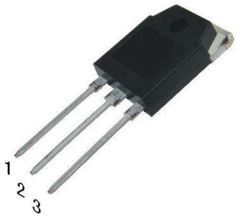
用于逆变器、UPS 电源。

These devices are well suited for inverter,UPS.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1：Gate　　PIN 2：Drain　　PIN 3：Source

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

见印章说明。See Marking Instructions.

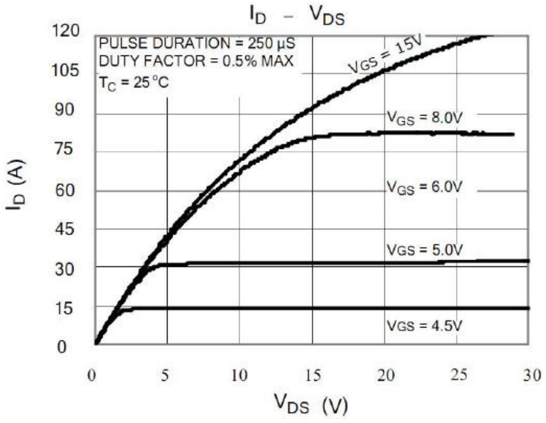
极限参数 / Absolute Maximum Ratings(Ta=25℃)

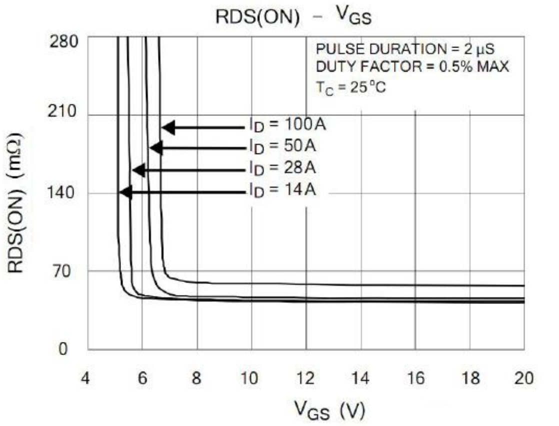
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-to-Source Breakdown Voltage	V_{DSS}	200	V
Continuous Drain Current	I_D(Tc=25℃)	50	A
Continuous Drain Current	I_D(Tc=100℃)	35	A
Pulsed Drain Current	I_{DM}	200	A
Gate-to-Source Voltage	V_{GSS}	±20	V
Single Pulse Avalanche Energy	E_{AS}	550	mJ
Repetitive Avalanche Energy	E_{AR}	30	mJ
Avalanche Current	I_{AR}	50	A
Power Dissipation	P_D(Tc=25℃)	300	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 175	℃

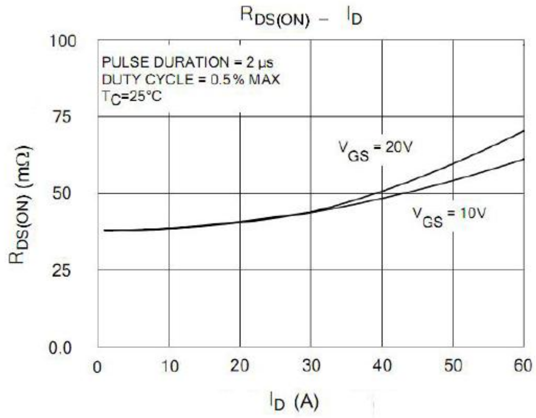
电性能参数 / Electrical Characteristics(Ta=25℃)

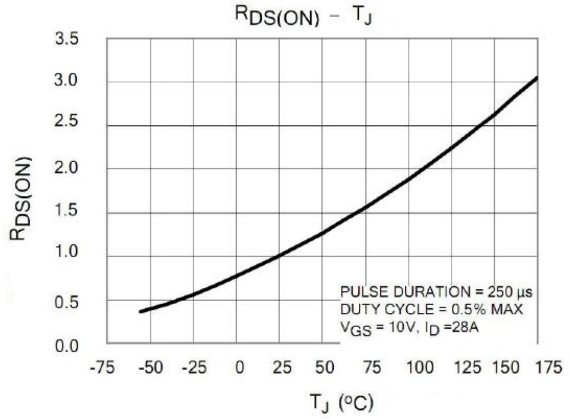
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-to-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	200			V
Drain-to-Source Leakage Current	I_{DSS}	V_{DS}=200V V_{GS}=0V			10	μA
Gate-to-Source Forward Leakage	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	2		4	V
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=28A		40	45	mΩ
Forward Transconductance	g_{FS}	V_{DS}=15V I_D=10A		60		S
Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=50A			1.5	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		7800		pF
Output Capacitance	C_{oss}			445		
Reverse Transfer Capacitance	C_{rss}			280		
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=100V I_D=28A R_G=1Ω V_{GS}=10V		20		ns
Rise Time	t_r			70		
Turn-Off Delay Time	$t_{d(off)}$			63		
Fall Time	t_f			52		

电参数曲线图 / Electrical Characteristic Curve



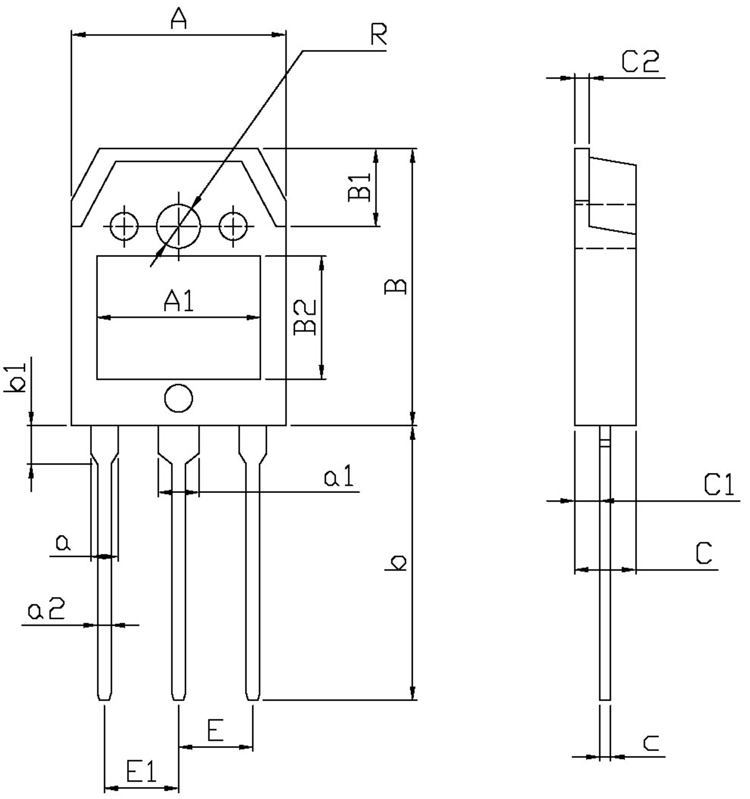


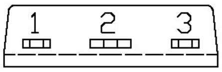




外形尺寸图 / Package Dimensions

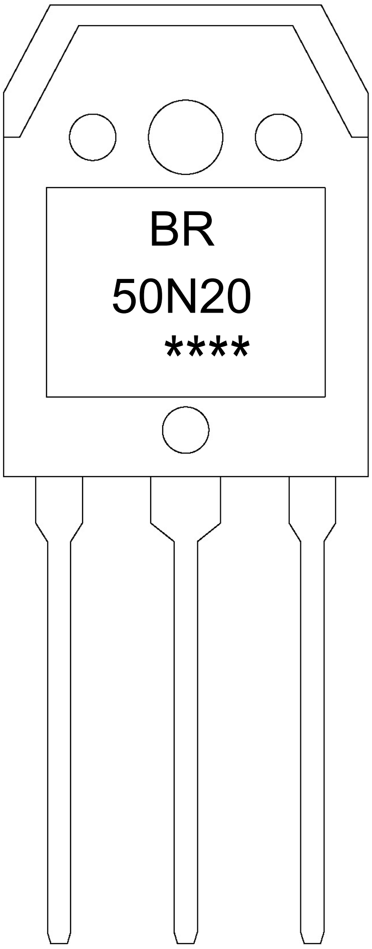
TO-3P 单位：mm





Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	15.4	16.0	a2	0.8	1.2
R	3.1	3.5	E	5.45	
B	19.8	20.8	E1	5.45	
B1	5.5	5.9	C	4.3	4.7
B2	9.0		C1	1.2	1.6
A1	12.0		C2	1.4	1.6
b	19.6	20.6	c	0.5	0.7
b1	3.0	3.4			
a	1.8	2.2			
a1	2.8	3.2			

印章说明 / Marking Instructions



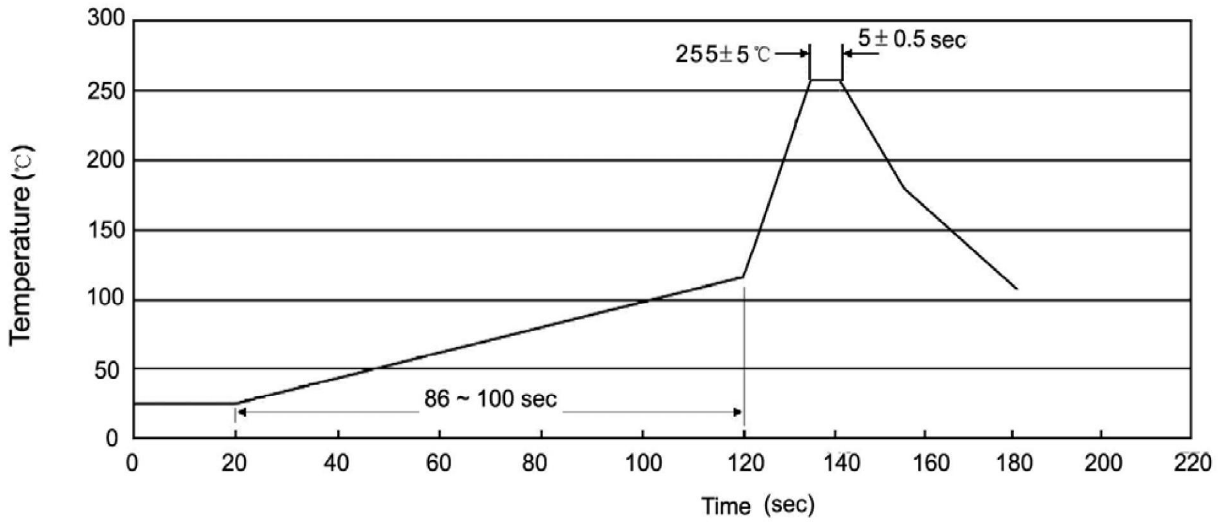
说明：

BR:	为公司代码
50N20：	为型号代码
****：	为生产批号代码，随生产批号变化。

Note:

BR:	Company Code.
50N20:	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℃，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.

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-3P	30	15	450	5	2250	497.5×46×8	555×164×50	575×290×180

使用说明 / Notices