BRCS5N10MC

Rev.E Apr.-2024

描述 / Descriptions

SOT23-3 塑封封装 N 道场效应管。

N- CHANNEL MOSFET in a SOT23-3 Plastic Package.

特征 / Features

V_{DS}=100V　　I_D=5A

$R_{DS(on)1}$@10V≤175mΩ(Type.120mΩ)

$R_{DS(on)2}$@4.5V≤235mΩ(Type.150mΩ)

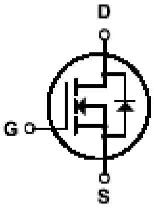
无卤产品。HF Product.

用途 / Applications

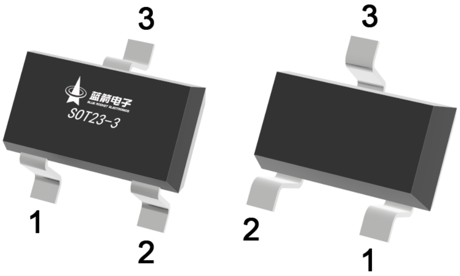
适用电视机等开关电源电路。

Power management in TV Inverter. Power Switch.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1：G　　PIN 2：S　　PIN 3：D

印章代码 / Marking

Marking	H5N1

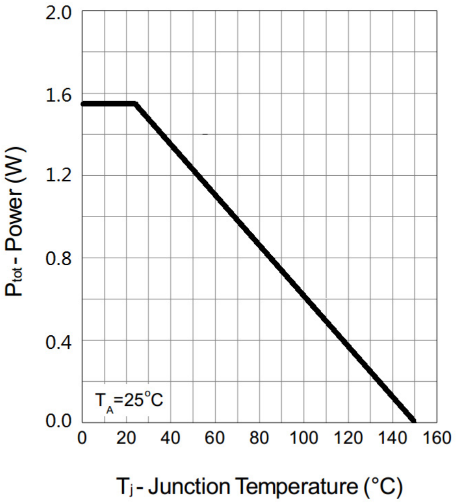
极限参数 / Absolute Maximum Ratings(Ta=25℃)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	±20	V
Maximum Drain Current - Continuous	I_D	5.0	A
Drain Current- Pulsed	I_{DM}	15	A
Power Dissipation	P_D	1.55	W
Maximum Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55 to 150	℃
Maximum Resistance –Junction to Ambient	$R_{\theta JA}$	80.7	℃/W

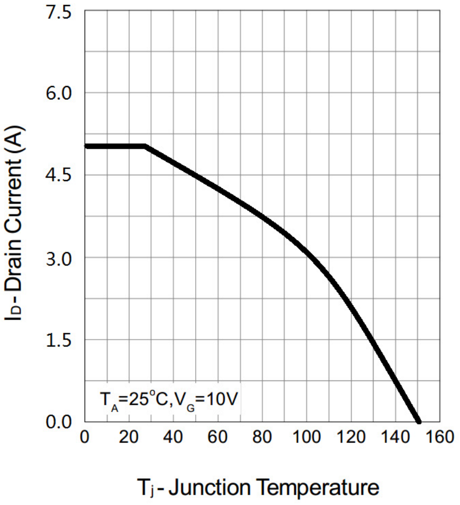
电性能参数 / Electrical Characteristics(Ta=25℃)

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_{DS}=250μA	100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V V_{GS}=0V			1	μA
Gate–Body Leakage.	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±10	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS} I_{DS}=250μA	1		3	V
Static Drain–Source On–Resistance	$R_{DS(on)(1)}$	V_{GS}=10V I_D=5A		120	175	mΩ
	$R_{DS(on)(2)}$	V_{GS}=4.5V I_D=2A		150	235	mΩ
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_F=1A			1.3	V
Input Capacitance	C_{iss}	V_{DS}=0V V_{GS}=25V f=1.0MHz		200		pF
Output Capacitance	C_{oss}			150		pF
Reverse Transfer Capacitance	C_{rss}			30		pF
Turn–On Delay Time	$t_{d(on)}$	I_{DS}=1A V_{GEN}=10V V_{DD}=30V R_L=30Ω R_G=6Ω		11		ns
Turn–On Rise Time	t_r			10		ns
Turn–Off Delay Time	$t_{d(off)}$			21		ns
Turn–Off Fall Time	t_f			5		ns
Total Gate Charge	Q_g	V_{DS}=50V V_{GS}=10V I_{DS}=5A		9.5		nC
Gate- Source Charge	Q_{gs}			1.9		nC
Gate- Drain Charge	Q_{gd}			2.1		nC

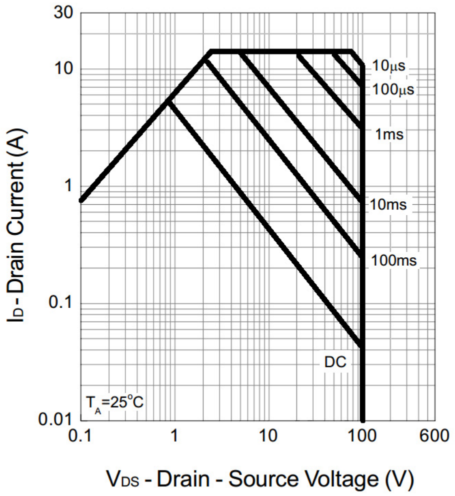
电参数曲线图 / Electrical Characteristic Curve



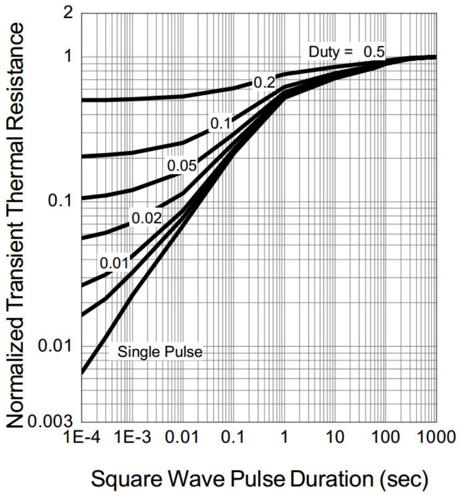
Power Dissipation



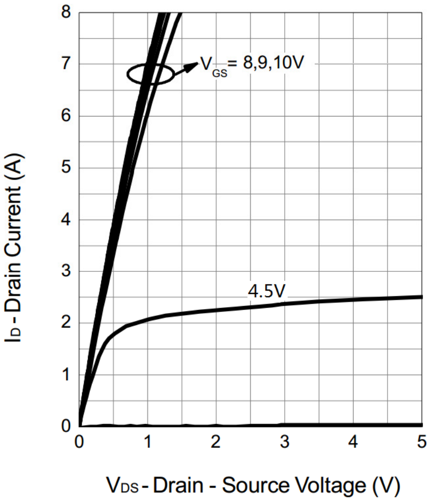
Drain Current



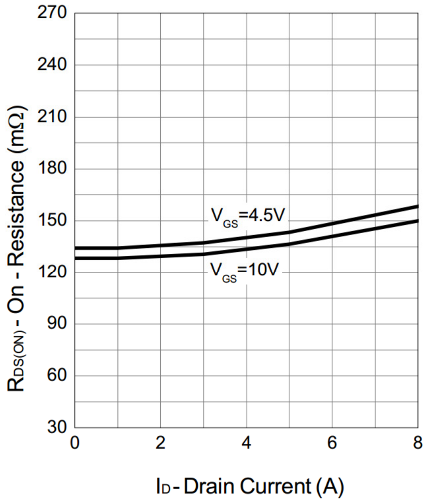
Safe Operation Area



Thermal Transient Impedance

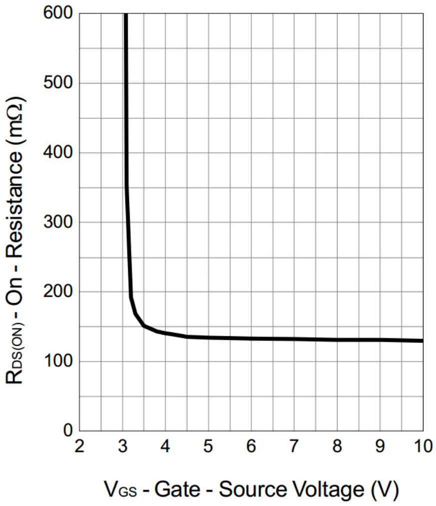


Output Characteristics

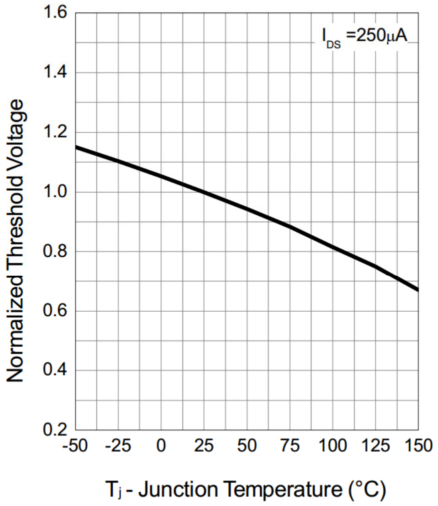


Drain-Source On Resistance

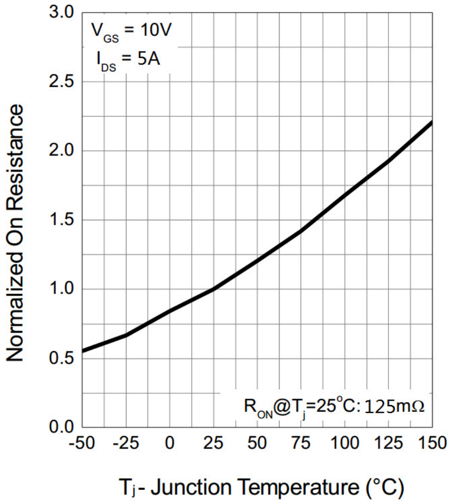
电参数曲线图 / Electrical Characteristic Curve



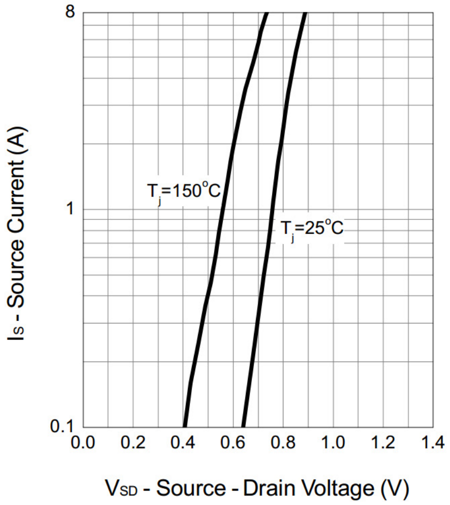
Gate-Source On Resistance



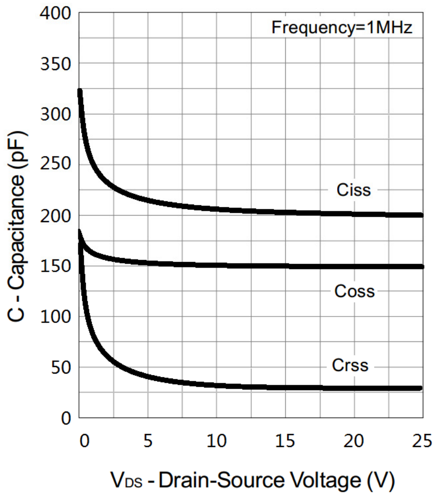
Gate Threshold Voltage



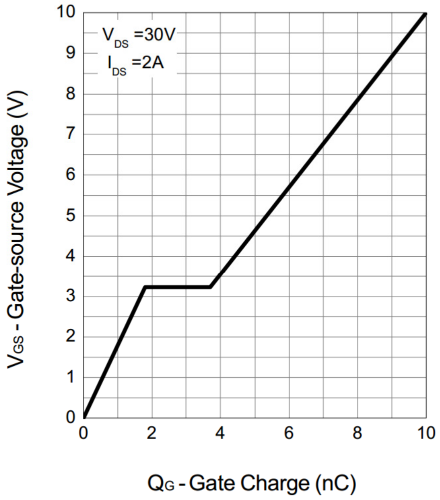
Drain-Source On Resistance



Source-Drain Diode Forward

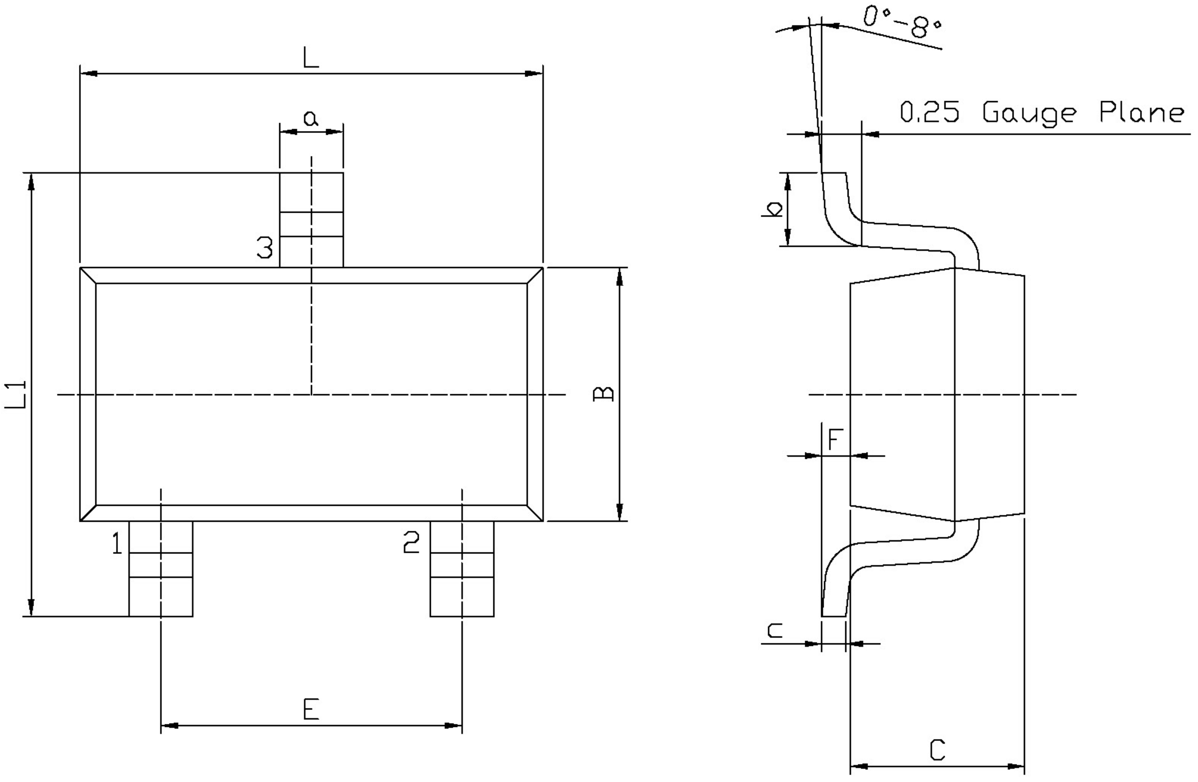


Capacitance



Gate Charge

外形尺寸图 / Package Dimensions

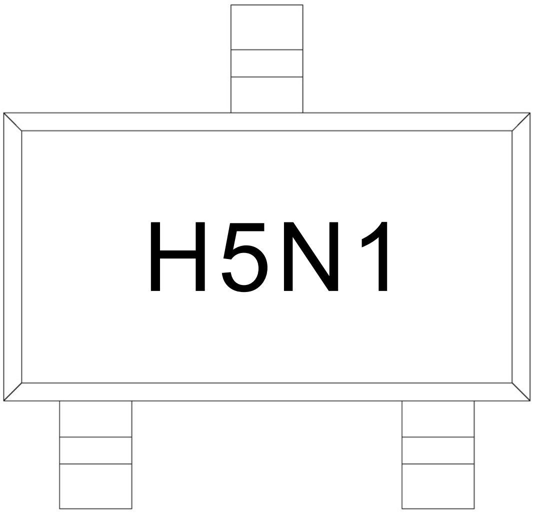


Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	a	0.35	0.50
B	1.50	1.70	c	0.10	0.20
C	0.90	1.30	b	0.35	0.55
L1	2.60	3.00	F	0	0.15
E	1.80	2.00			

SOT23-3

印章说明 / Marking Instructions



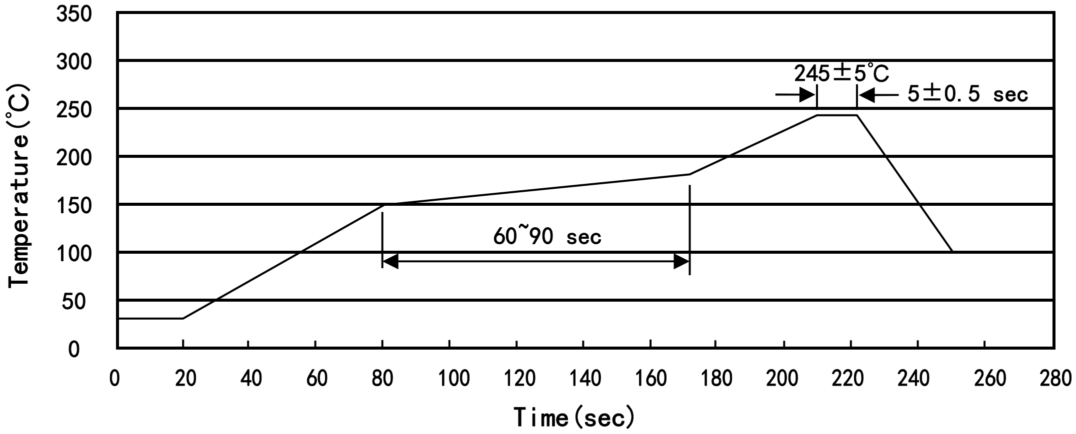
说明：

H:	为公司代码
5N1：	为型号代码

Note:

H：	Company Code
5N1:	Product Type Code

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 150～180℃，时间 60～90sec;

2、峰值温度 245±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:150~180℃, Time:60~90sec.

2.Peak Temp.:245±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：260±5℃　　时间：10±1 sec.　　Temp.:260±5℃　　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
SOT23-3	3,000	10	30,000	4	120,000	7″ ×8	210×205×205	445×435×230

使用说明 / Notices