描述 / Descriptions

SOT-23 塑封封装 N 道 MOS 场效应管。
N- CHANNEL MOSFET in a SOT-23 Plastic Package.

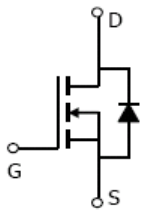
特征 / Features

V_{DS} (V) = 30V
I_D = 5.5 A (V_{GS} = 20V)
$R_{DS(ON)}$ < 31mΩ (V_{GS} = 10V)
$R_{DS(ON)}$ < 43mΩ (V_{GS} = 4.5V)
无卤产品。HF Product.

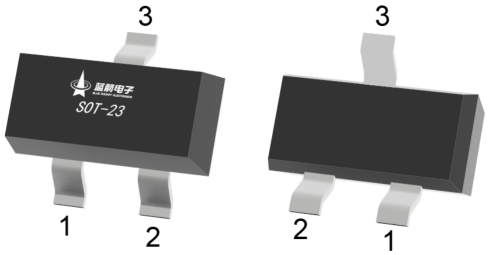
用途 / Applications

适用于作负载开关或脉宽调制应用。
This device is suitable for use as a load switch or in PWM applications.

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	B4H

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}	30	V
Drain Current – Continuous		I_D	5.5	A
Pulsed Drain Current		I_{DM}	19	A
Gate-Source Voltage		V_{GS}	±20	V
Total Power Dissipation		P_D	1.4	W
Operating and Storage Junction Temperature Range		T_J, T_{STG}	-55 to 150	℃
Maximum Junction-to-Ambient	t≤10s	$R_{\theta JA}$	90	℃/W
Maximum Junction-to-Ambient	Steady-State		125	
Maximum Junction-to-Lead		$R_{\theta JL}$	80	

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	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=24V V_{GS}=0V			1	μA
		V_{DS}=24V V_{GS}=0V T_J=55℃			5	μA
Gate–Body Leakage.	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1.0	1.5	2.5	V
Static Drain–Source On–Resistance	$R_{DS(on)(1)}$	V_{GS}=10V I_D=5.5A		20	31	mΩ
	$R_{DS(on)(2)}$	V_{GS}=4.5V I_D=4A		26	43	
Drain–Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=1A		0.77	1	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1MHz		380		pF
Output Capacitance	C_{oss}			165		
Reverse Transfer Capacitance	C_{rss}			15		
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V, V_{DS}=15V, I_D=5.5A		5.2		nC
Total Gate Charge	$Q_{g(4.5V)}$			2.5		
Gate Source Charge	Q_{gs}			0.8		
Gate Drain Charge	Q_{gd}			1.3		
Turn–On Delay Time	$t_{d(on)}$	V_{GS}=10V R_L=3Ω V_{DS}=15V R_{GEN}=3Ω		4.5		ns
Turn–On Rise Time	t_r			2.5		
Turn–Off Delay Time	$t_{d(off)}$			14.5		
Turn–Off Fall Time	t_f			3.5		

电参数曲线图 / Electrical Characteristic Curve

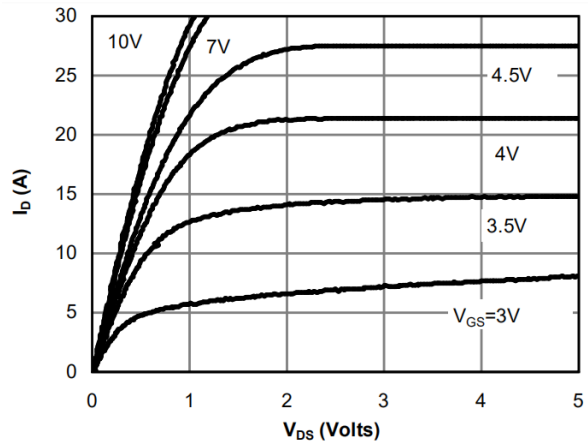


Fig 1: On-Region Characteristics

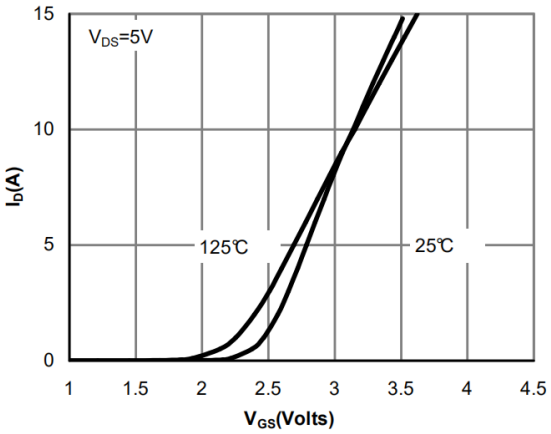


Figure 2: Transfer Characteristics

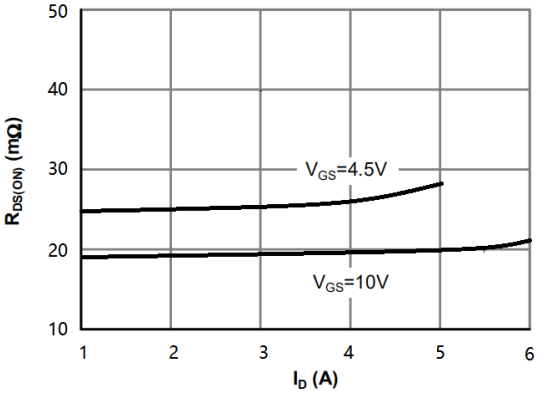


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

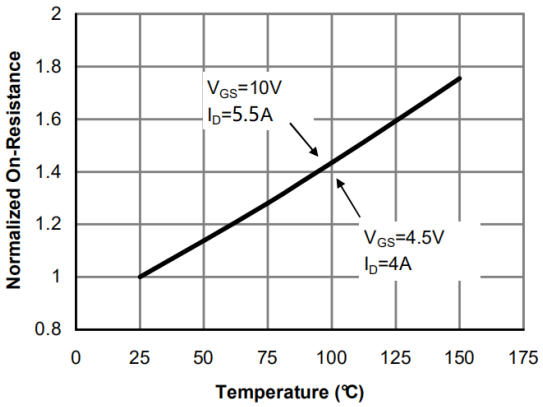


Figure 4: On-Resistance vs. Junction Temperature

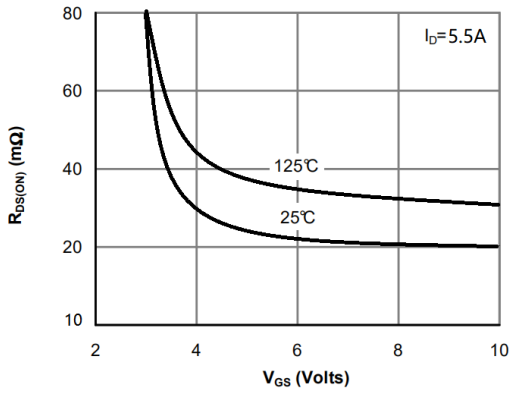


Figure 5: On-Resistance vs. Gate-Source Voltage

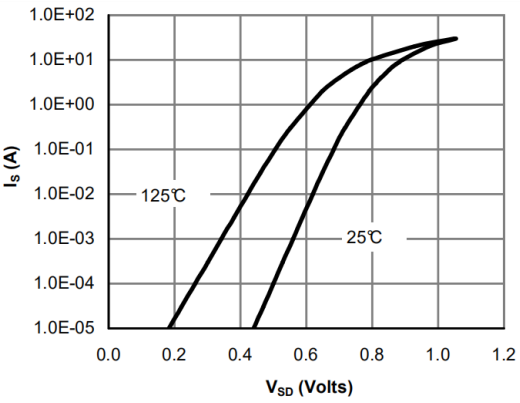


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

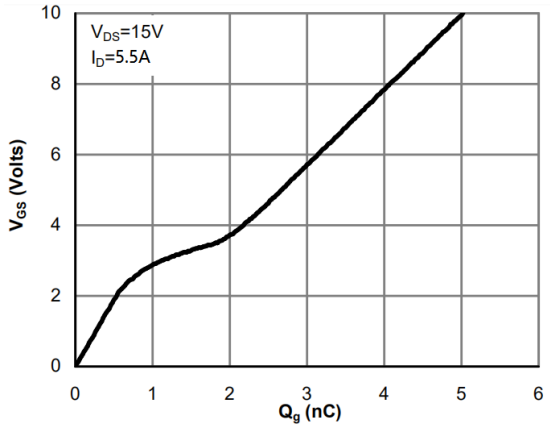


Figure 7: Gate-Charge Characteristics

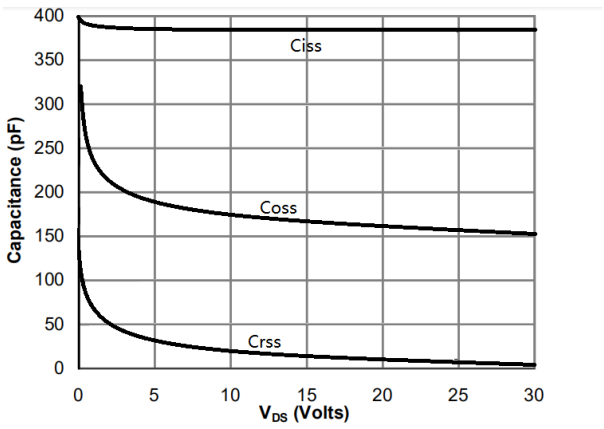


Figure 8: Capacitance Characteristics

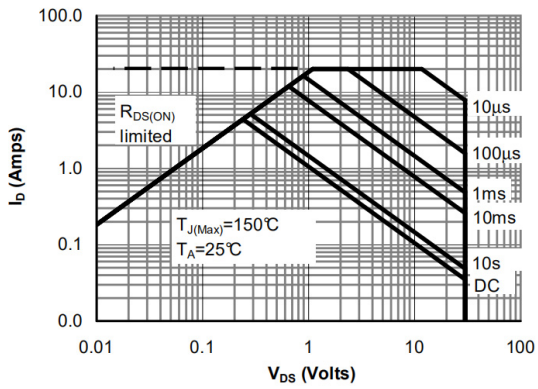


Figure 09: Maximum Forward Biased Safe Operating Area

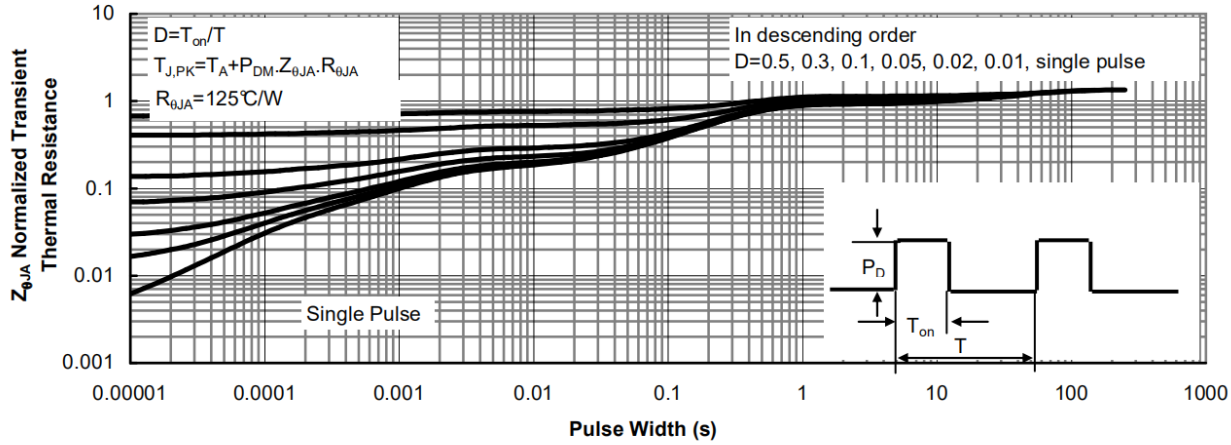
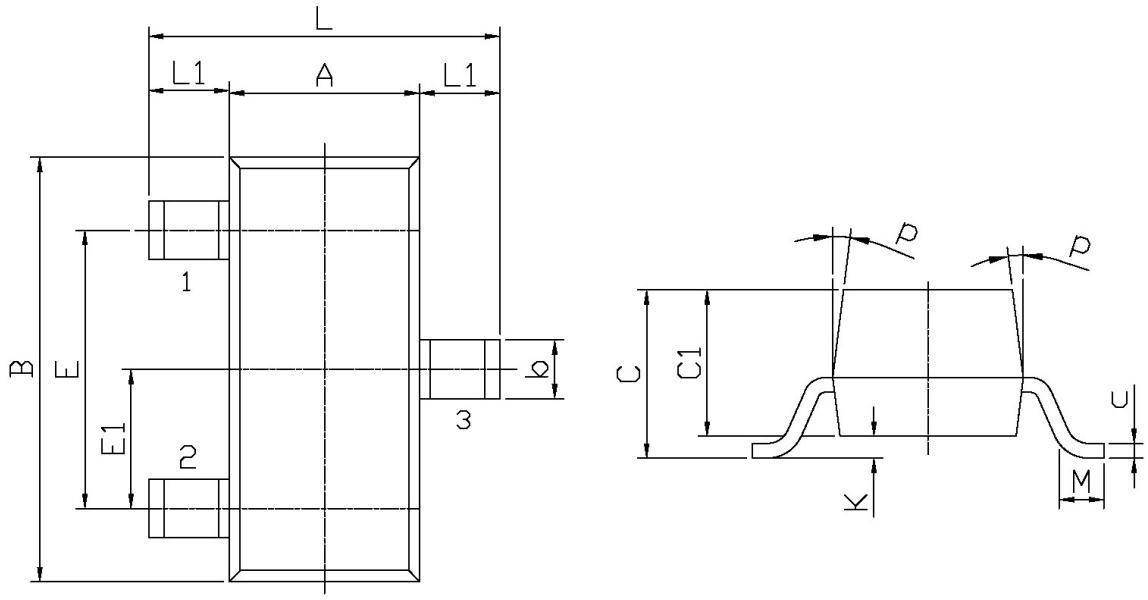


Figure 10: Normalized Maximum Transient Thermal Impedance

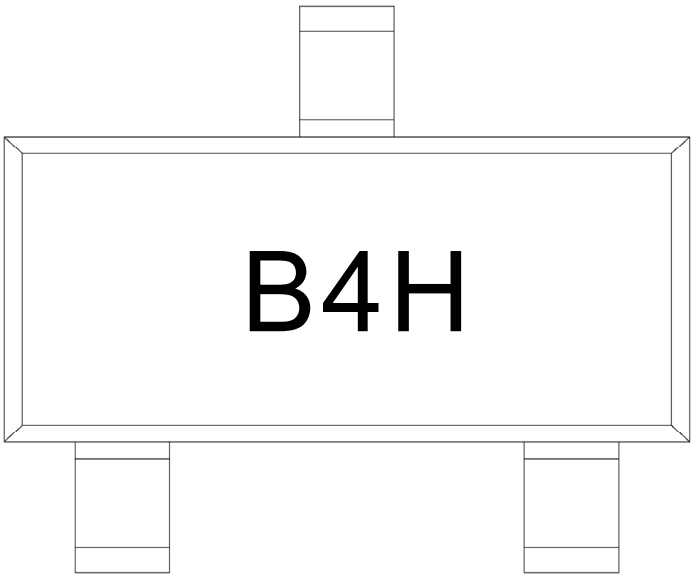
外形尺寸图 / Package Dimensions

SOT-23 单位：mm



Symbol	Dimensions In Millmeters		Symbol	Dimensions In Millmeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

印章说明 / Marking Instructions



说明：

B4： 为型号代码

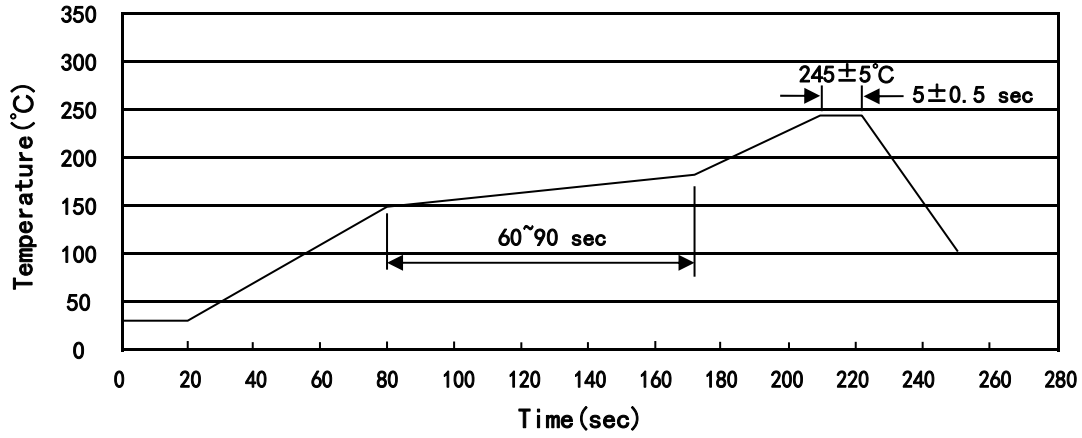
H： 为公司代码

Note:

B4: Product Type Code

H: Company 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：mm³)		
	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
SOT-23	3,000	10	30,000	6	180,000	7″ ×8	180×120×180	390×385×205

使用说明 / Notices

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