

BRC3404MA

Rev.A Oct-2023

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

$V_{DS} (V) = 30V$

$I_D = 5.5 A (V_{GS} = 20V)$

$R_{DS(ON)} < 31m\Omega (V_{GS} = 10V)$

$R_{DS(ON)} < 43m\Omega (V_{GS} = 4.5V)$

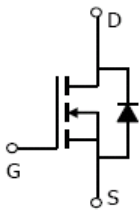
无卤产品。HF Product.

用途 / Applications

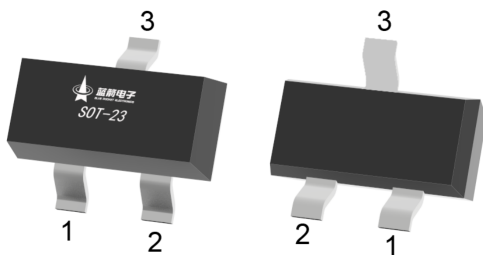
适用于作负载开关或脉宽调制应用。

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

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	°C
Maximum Junction-to-Ambient	R _{θJA}	90	°C/W
Maximum Junction-to-Ambient		Steady-State	
Maximum Junction-to-Lead	R _{θJL}	80	

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	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°C			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

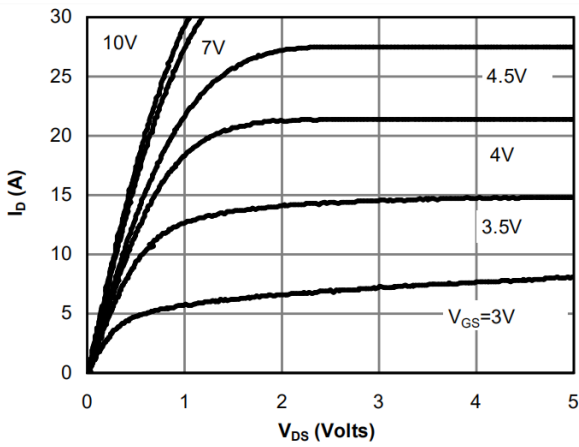


Fig 1: On-Region Characteristics

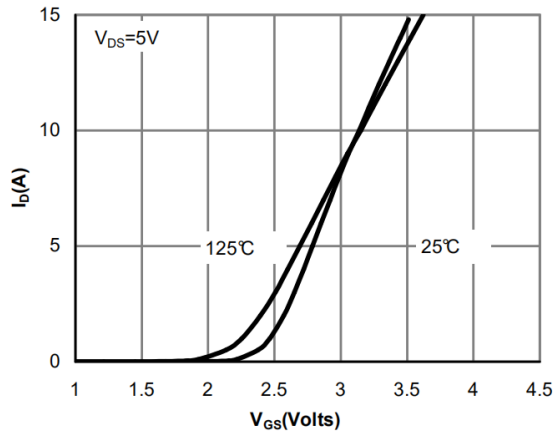


Figure 2: Transfer Characteristics

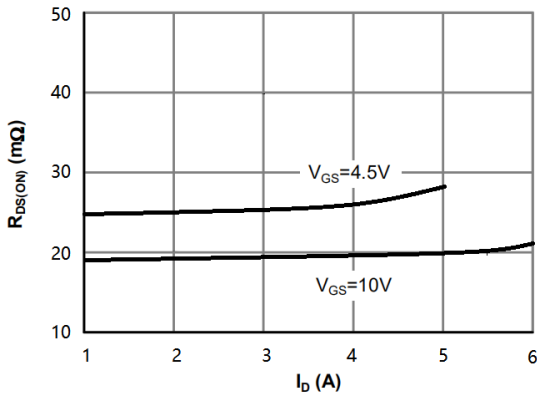


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

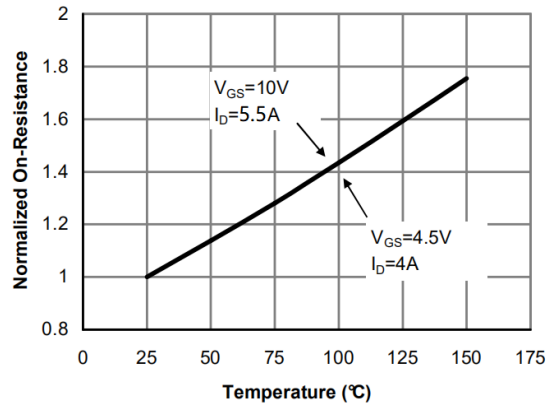


Figure 4: On-Resistance vs. Junction Temperature

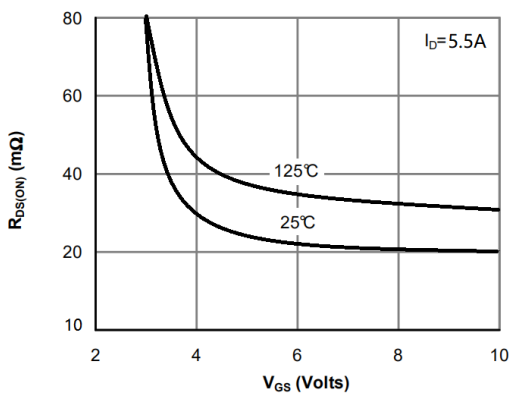


Figure 5: On-Resistance vs. Gate-Source Voltage

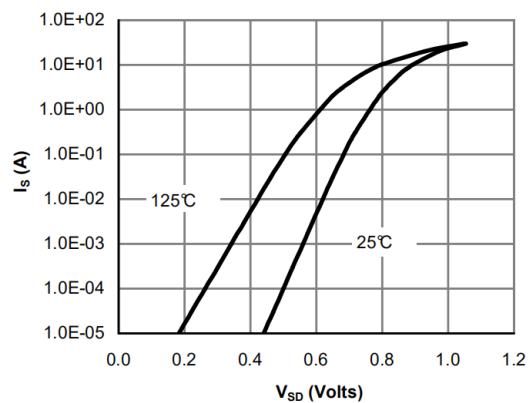


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

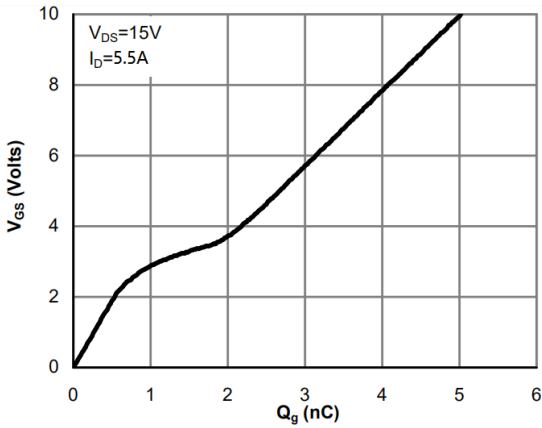


Figure 7: Gate-Charge Characteristics

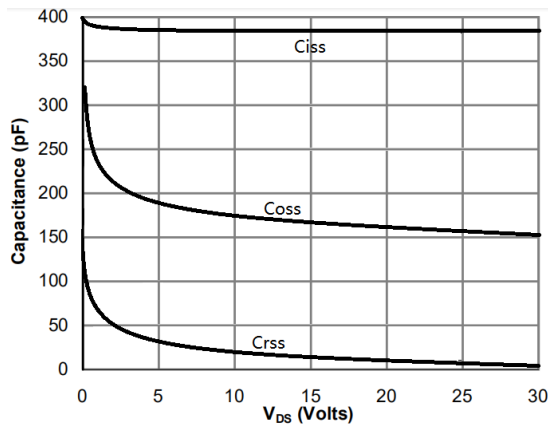


Figure 8: Capacitance Characteristics

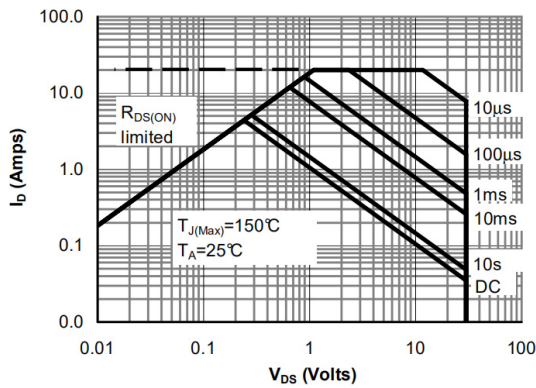


Figure 09: Maximum Forward Biased Safe Operating Area

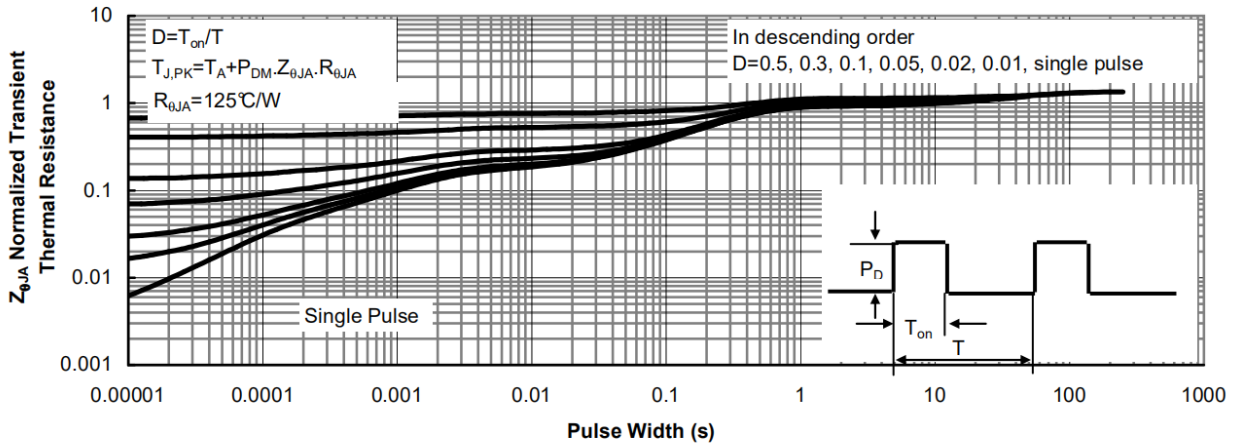
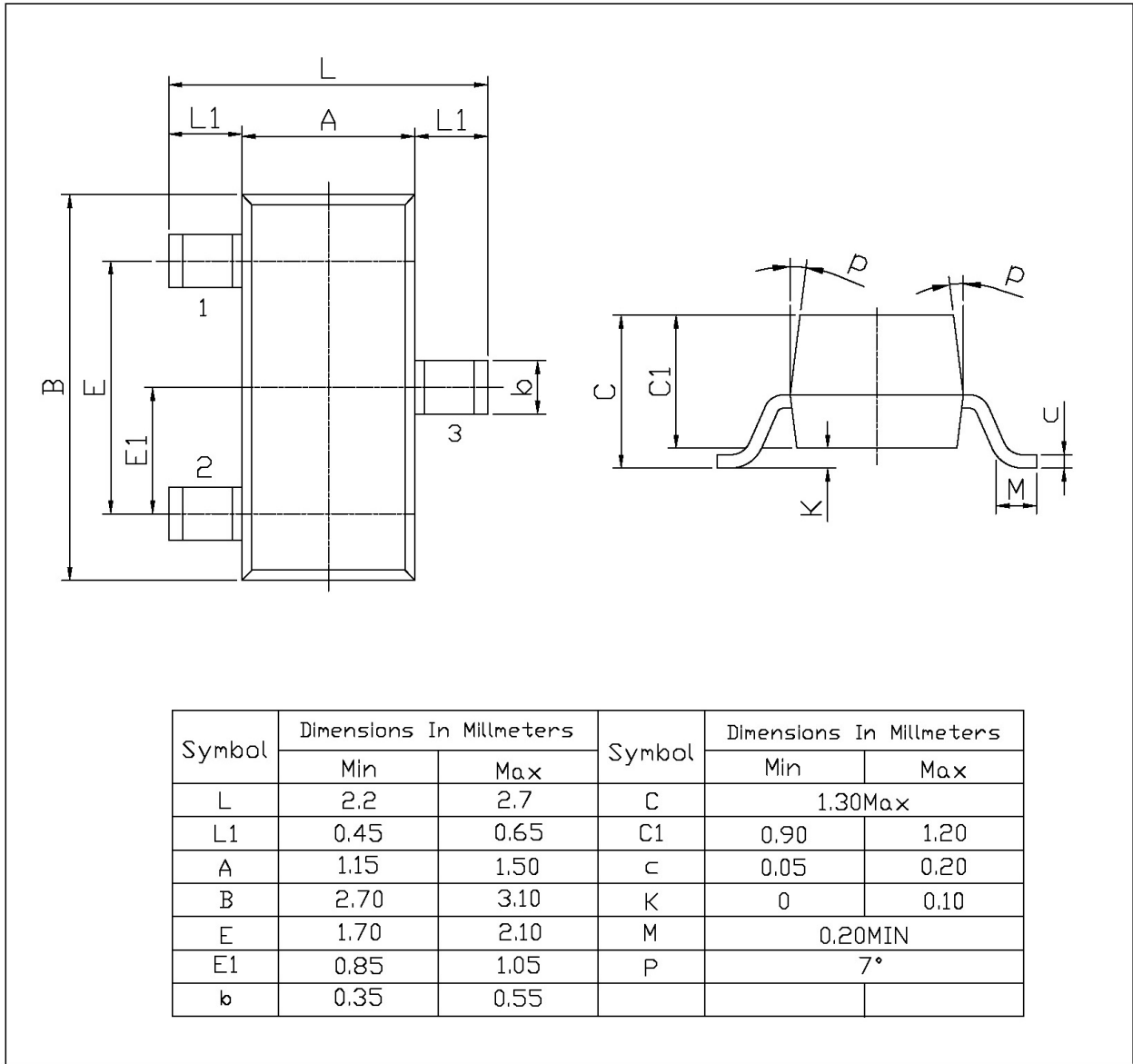


Figure 10: Normalized Maximum Transient Thermal Impedance

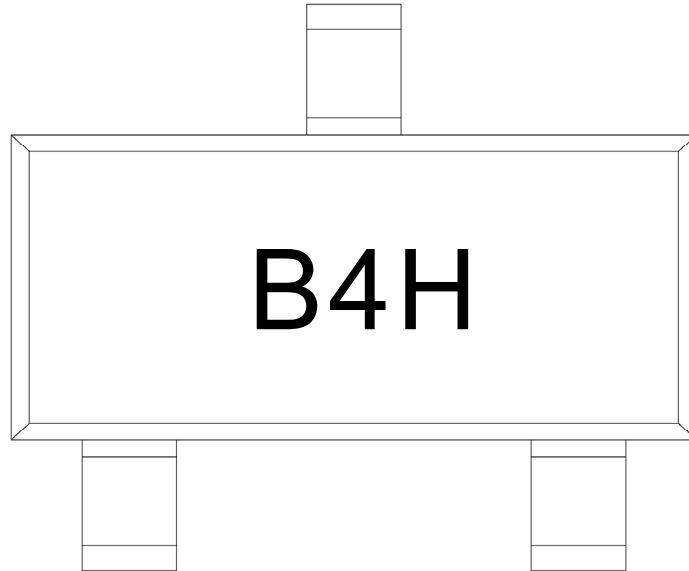
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

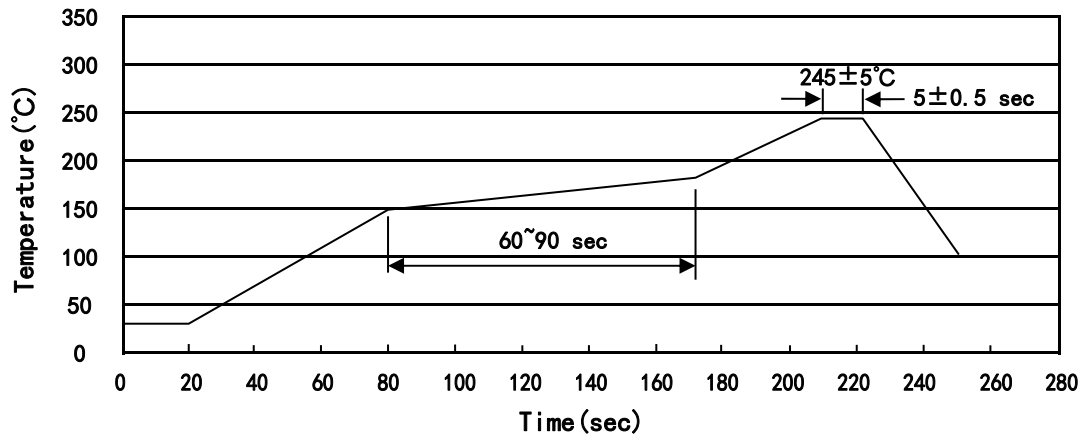
B4： 为型号代码

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°C，时间 60~90sec;
- 2、峰值温度 245±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:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±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：260±5°C

时间：10±1 sec.

Temp.:260±5°C

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
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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