

BRCS3415MC

Rev.B .Dec.-2024

描述 / Descriptions

SOT23-3 塑封封装 P 道 MOS 场效应管。
P- CHANNEL MOSFET in a SOT23-3 Plastic Package.

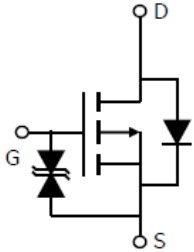
特征 / Features

$V_{DS}(V)=-20V$ $I_D=-5.0A(V_{GS}=\pm 10V)$
 $R_{DS(ON)}< 40\ m\Omega, V_{GS}=-4.5V$
 $R_{DS(ON)}< 53\ m\Omega, V_{GS}=-2.5V$
无卤产品。HF Product.

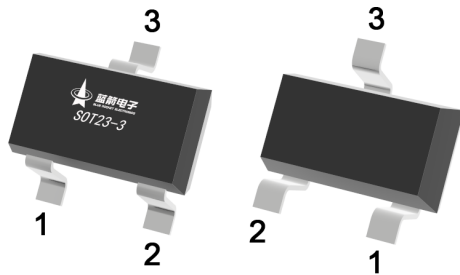
用途 / Applications

负载开关，电池保护。
Load switch , Battery protection.

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

AFH

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}	-20	V
Gate-Source Voltage	V _{GS}	±10	V
Drain Current-Continuous	I _D	-5.0	A
Drain Current-Pulsed	I _{DM}	-16	A
Maximum Power Dissipation	P _D	1.5	W
Storage Temperature Range	T _{STG}	-55 to +150	° C
Operating Junction Temperature Range	T _J	-55 to +150	° C
Thermal Resistance, Junction-to-Ambient	R _{θJA}	83.3	° C/W

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	B _{VDS}	V _{GS} =0V I _{DS} =-250μA	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V V _{GS} =0V			-1	uA
Gate-Body Leakage	I _{GSS}	V _{GS} =±10V V _{DS} =0V			±10	uA
Gate Threshold Voltage	V _{TH}	V _{DS} =V _{GS} I _{DS} =-250μA	-0.3	-0.6	-0.9	V
Drain-Source On-State Resistance	R _{DS}	V _{GS} =-4.5V I _{DS} =-4A		35	40	mΩ
		V _{GS} =-2.5V I _{DS} =-4A		45	53	
Input Capacitance	C _{iSS}	V _{DS} =-10V V _{GS} =0V f=1MHz		935		pF
Output Capacitance	C _{oSS}			92		
Reverse Transfer Capacitance	C _{rSS}			83		
Turn-On Delay Time	t _{d(on)}	V _{DS} =-10V V _{GS} =-4.5V R _G =3Ω R _L =2.2Ω		12		ns
Rise Time	t _r			11		
Turn-Off Delay Time	t _{d(off)}			82		
Fall Time	t _f			35		
Total Gate Charge	Q _g	V _{DS} =-10V I _{DS} =-5.0A V _{GS} =-4.5V		8.5		nC
Gate to Source Gate Charge	Q _{gs}			1		
Gate to Drain "Miller" Charge	Q _{gd}			2.5		
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _{DS} =-1A			-1.2	V

电参数曲线图 / Electrical Characteristic Curve

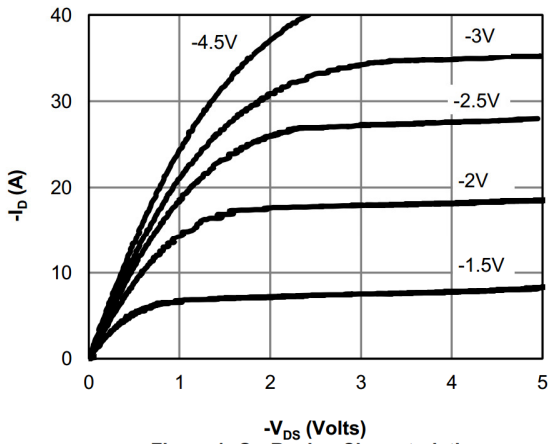


Figure 1: On-Region Characteristics

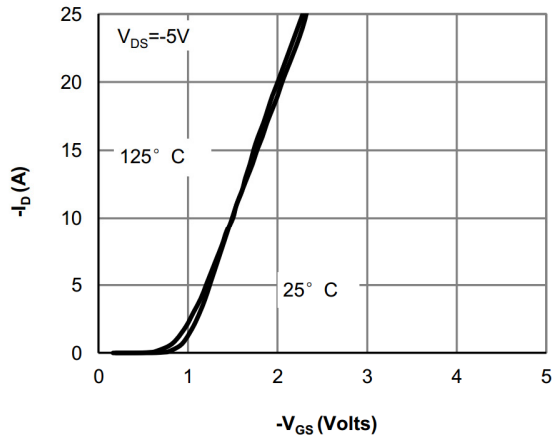


Figure 2: Transfer Characteristics

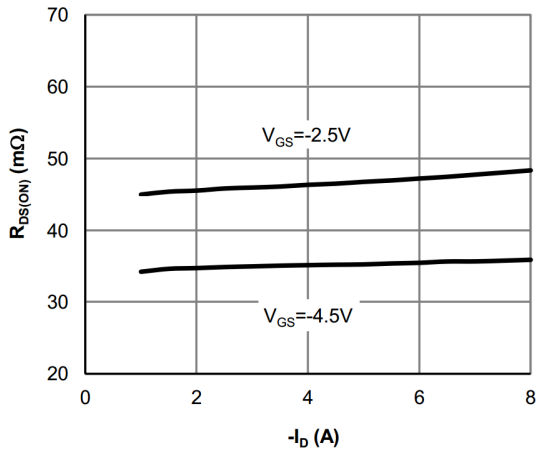


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

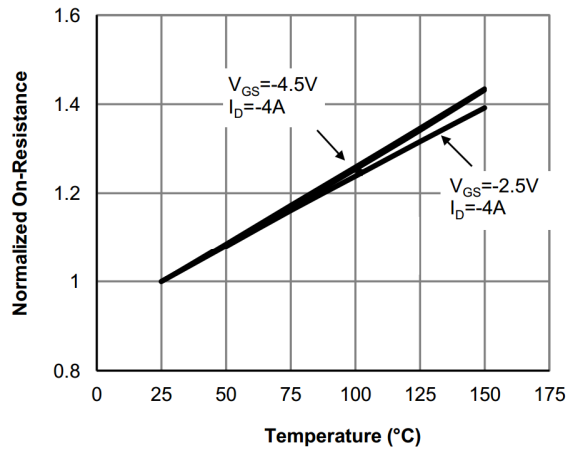


Figure 4: On-Resistance vs. Junction Temperature

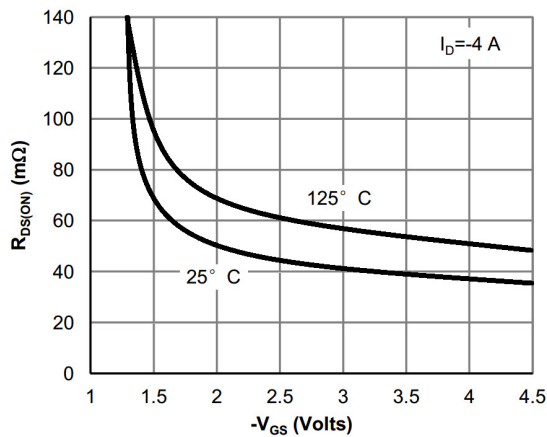


Figure 5: On-Resistance vs. Gate-Source Voltage

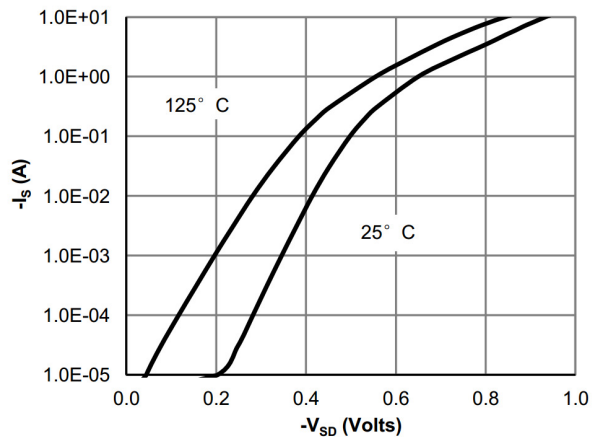


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

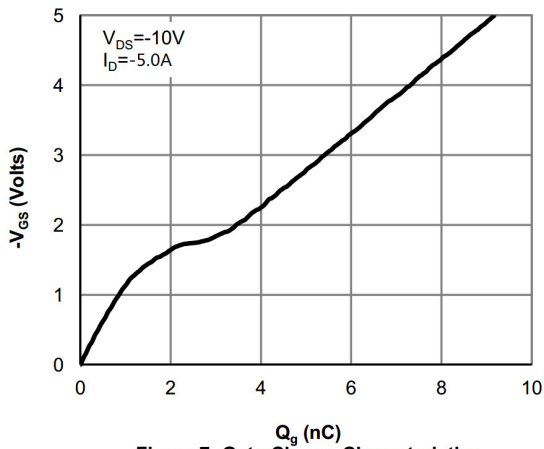


Figure 7: Gate-Charge Characteristics

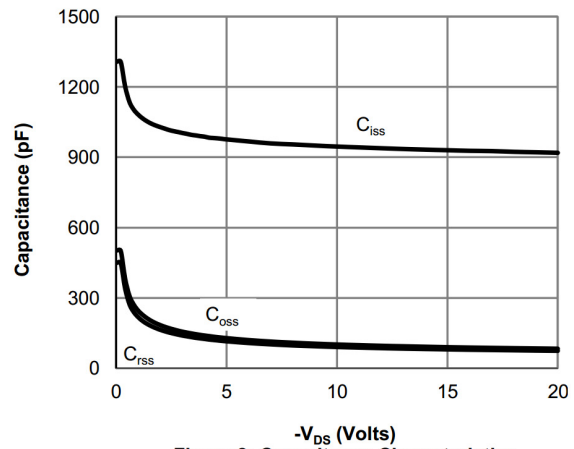


Figure 8: Capacitance Characteristics

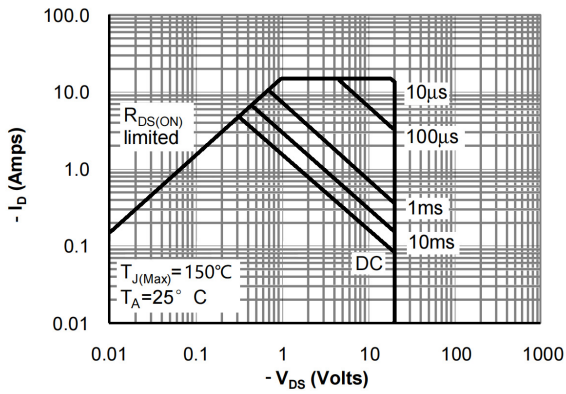


Figure 9: Maximum Forward Biased Safe Operating Area

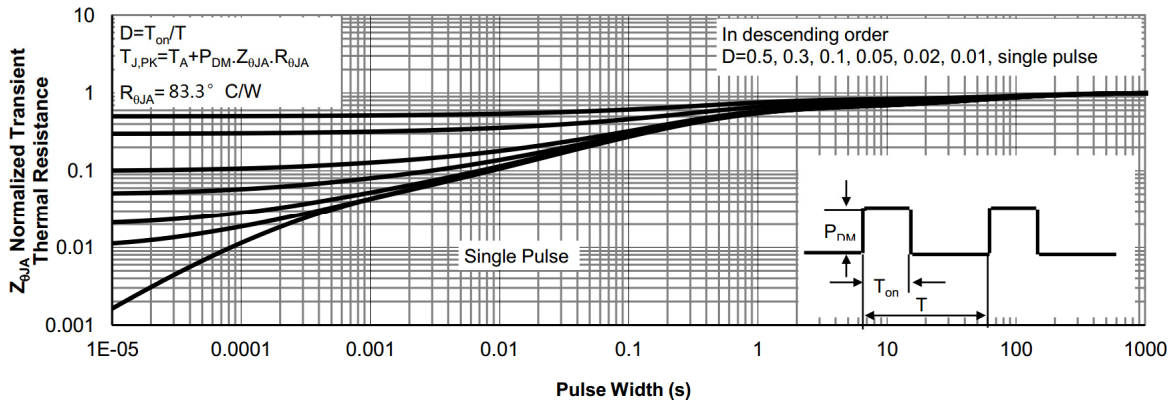
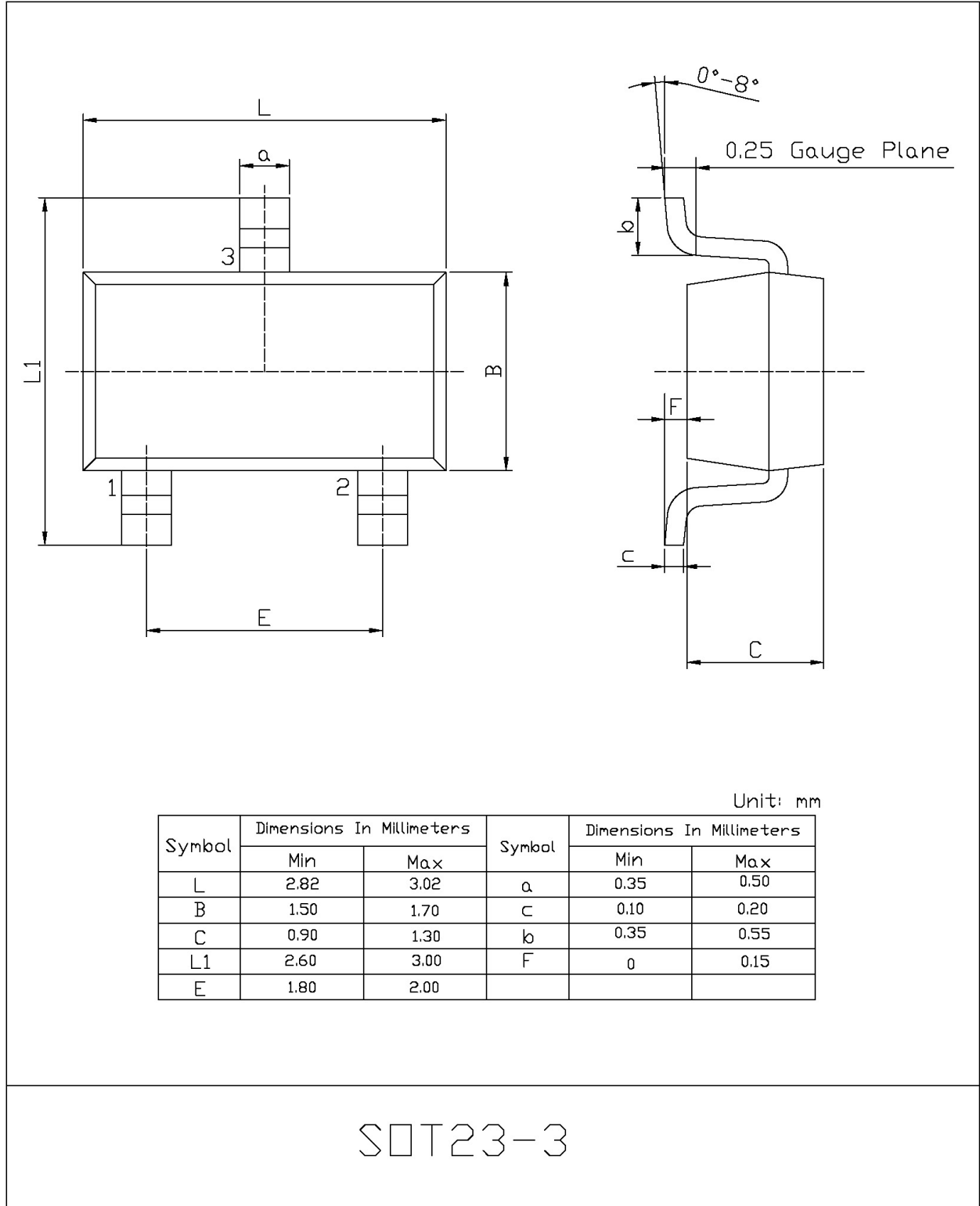
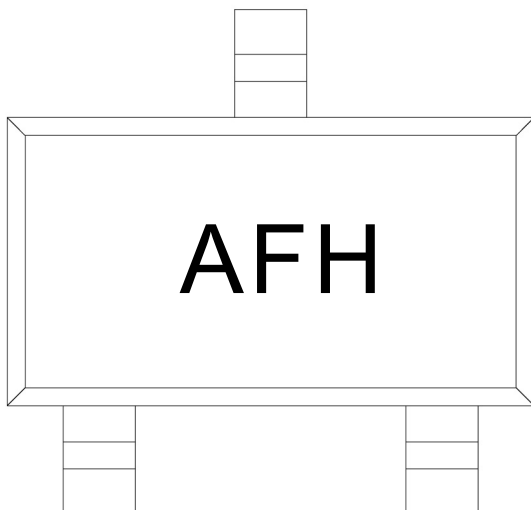


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions



印章说明 / Marking Instructions



说明：

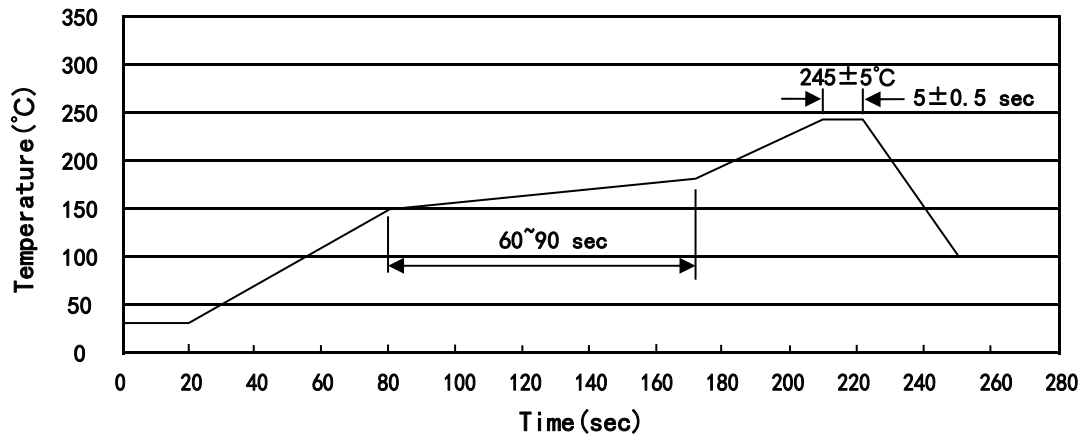
H: 为公司代码

AF: 为型号代码

Note:

H: Company Code

AF : 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°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
SOT23-3	3,000	10	30,000	4	120,000	7" ×8	210×205×205	445×435×230

使用说明 / Notices