

BRCS200P02MC

Rev.A Nov.-2023

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.

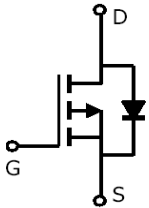
特征 / Features

$V_{DS} (V) = -20V$ $I_D = -6.4A$
 $R_{DS(ON)}@-4.5V \leq 22m\Omega$ (Type.20m Ω)
 $R_{DS(ON)}@-2.5V \leq 30m\Omega$ (Type.26m Ω)
 $R_{DS(ON)}@-1.8V \leq 100m\Omega$ (Type.35m Ω)
 无卤产品。HF Product.

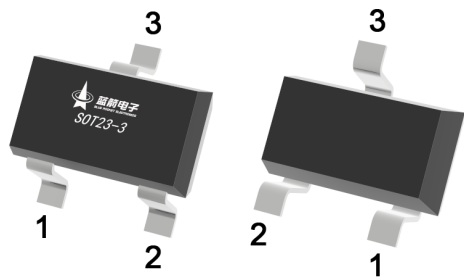
用途 / Applications

用于电源管理，便携式设备和电池供电系统。
Power Management in Notebook computer, Portable Equipment and Battery powered systems.

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	C4H
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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 _{DSS}	-20	V	
Gate-Source Voltage	V _{GSS}	±12	V	
Continuous Drain Current	I _D	-6.4	A	
Pulsed Drain Current	I _{DM}	-28.5	A	
Power Dissipation for Single Operation	P _D	1.25	W	
Maximum Junction Temperature	T _j	150	°C	
Storage Temperature Range	T _{stg}	-55 ~ 150	°C	
Thermal Resistance-Junction to Ambient	R _{θJA}	t _{≤10s}	100	°C/W
		Steady State	130	°C/W
Thermal Resistance-Junction to Lead	R _{θJL}	80	°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	BV _{DSS}	I _D =-250μA V _{GS} =0V	-20	-22.5		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V V _{GS} =0V			-1.0	μA
Gate-Body leakage current	I _{GSS}	V _{DS} =0V V _{GS} =±12V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250μA	-0.5	-0.6	-1.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-4.5V I _D =-5A		20	22	mΩ
		V _{GS} =-2.5V I _D =-4A		26	30	
		V _{GS} =-1.8V I _D =-3A		35	100	
Diode Forward Voltage	V _{SD}	I _S =-1A V _{GS} =0V			-1.2	V
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz		11		Ω
Input Capacitance	C _{iss}	V _{GS} =0V V _{DS} =-5V f=1MHz		1700		pF
Output Capacitance	C _{oss}			600		
Reverse Transfer Capacitance	C _{rss}			450		

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
Total Gate Charge	Q_g	$V_{GS}=-4.5V, V_{DS}=-10V,$ $I_D=-6A$		13		nC
Gate Source Charge	Q_{gs}			2.5		
Gate Drain Charge	Q_{gd}			4.2		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-4.5V R_L=1.25\Omega$ $V_{DS}=-10V R_{GEN}=3\Omega$		7.5		ns
Turn-On Rise Time	t_r			29.2		
Turn-Off Delay Time	$t_{d(off)}$			103		
Turn-Off Fall Time	t_f			50		

电参数曲线图 / Electrical Characteristic Curve

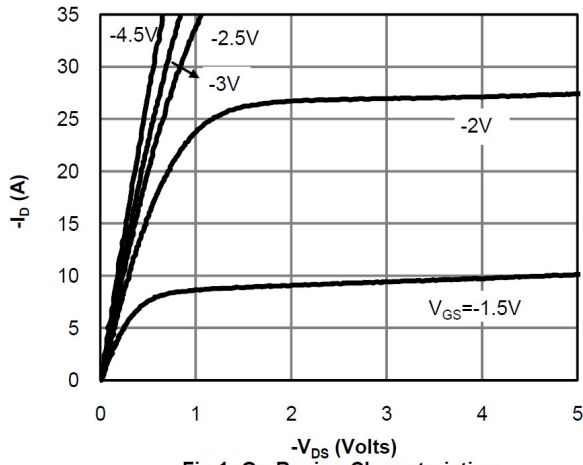


Fig 1: On-Region Characteristics

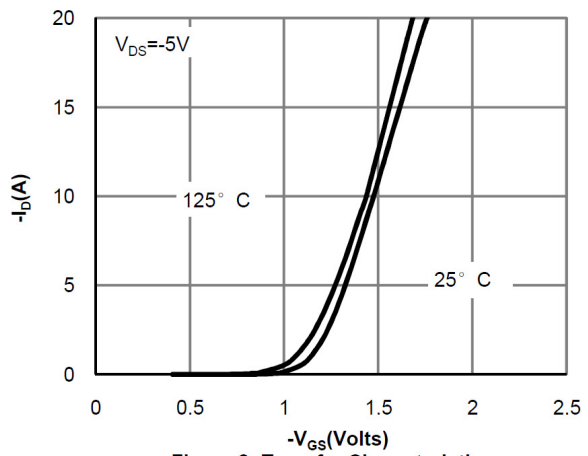


Figure 2: Transfer Characteristics

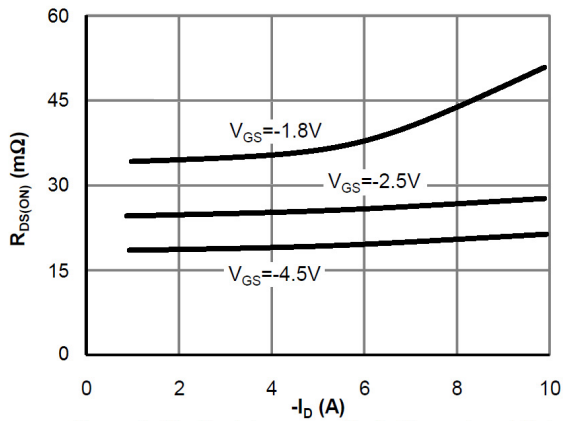


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

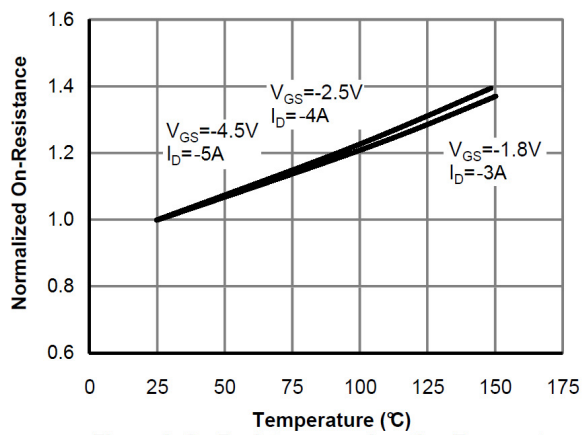


Figure 4: On-Resistance vs. Junction Temperature

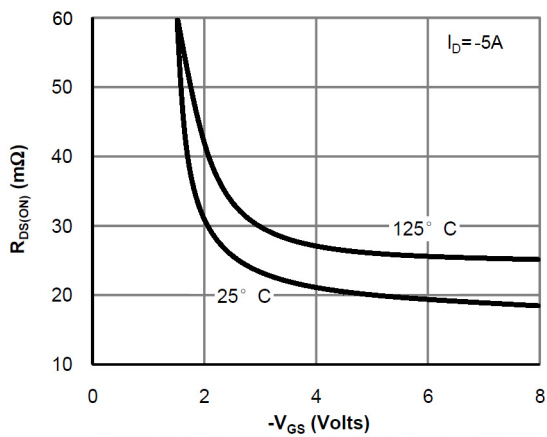


Figure 5: On-Resistance vs. Gate-Source Voltage

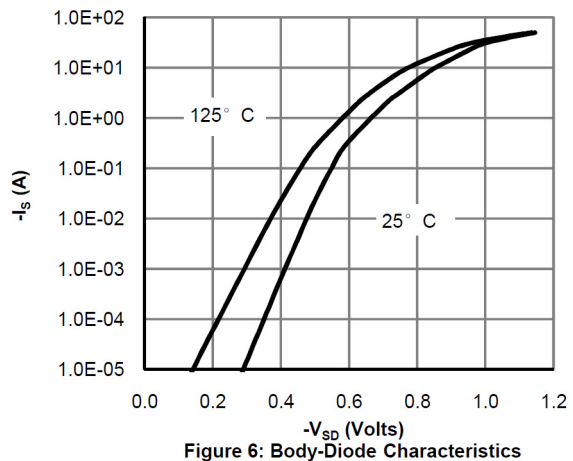


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

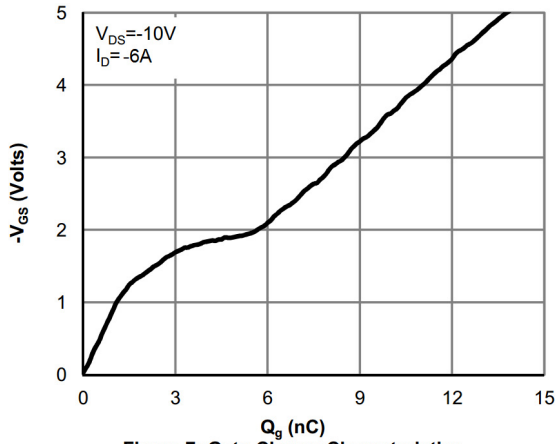


Figure 7: Gate-Charge Characteristics

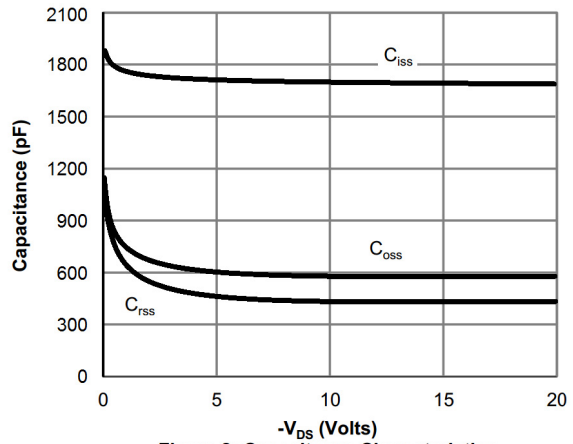


Figure 8: Capacitance Characteristics

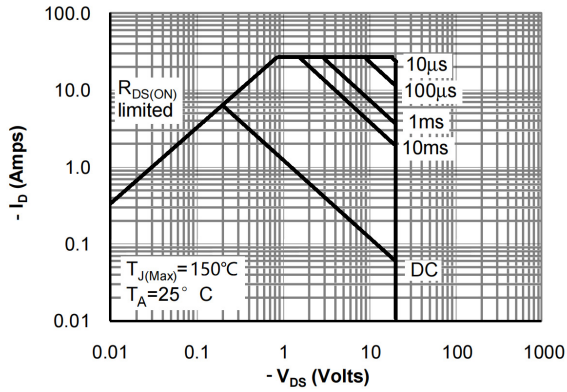


Figure 9: Maximum Forward Biased Safe Operating Area

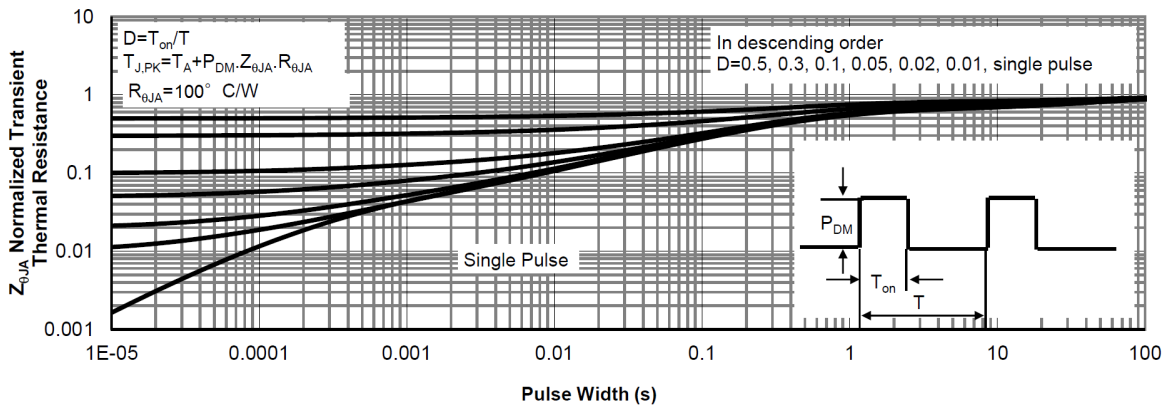
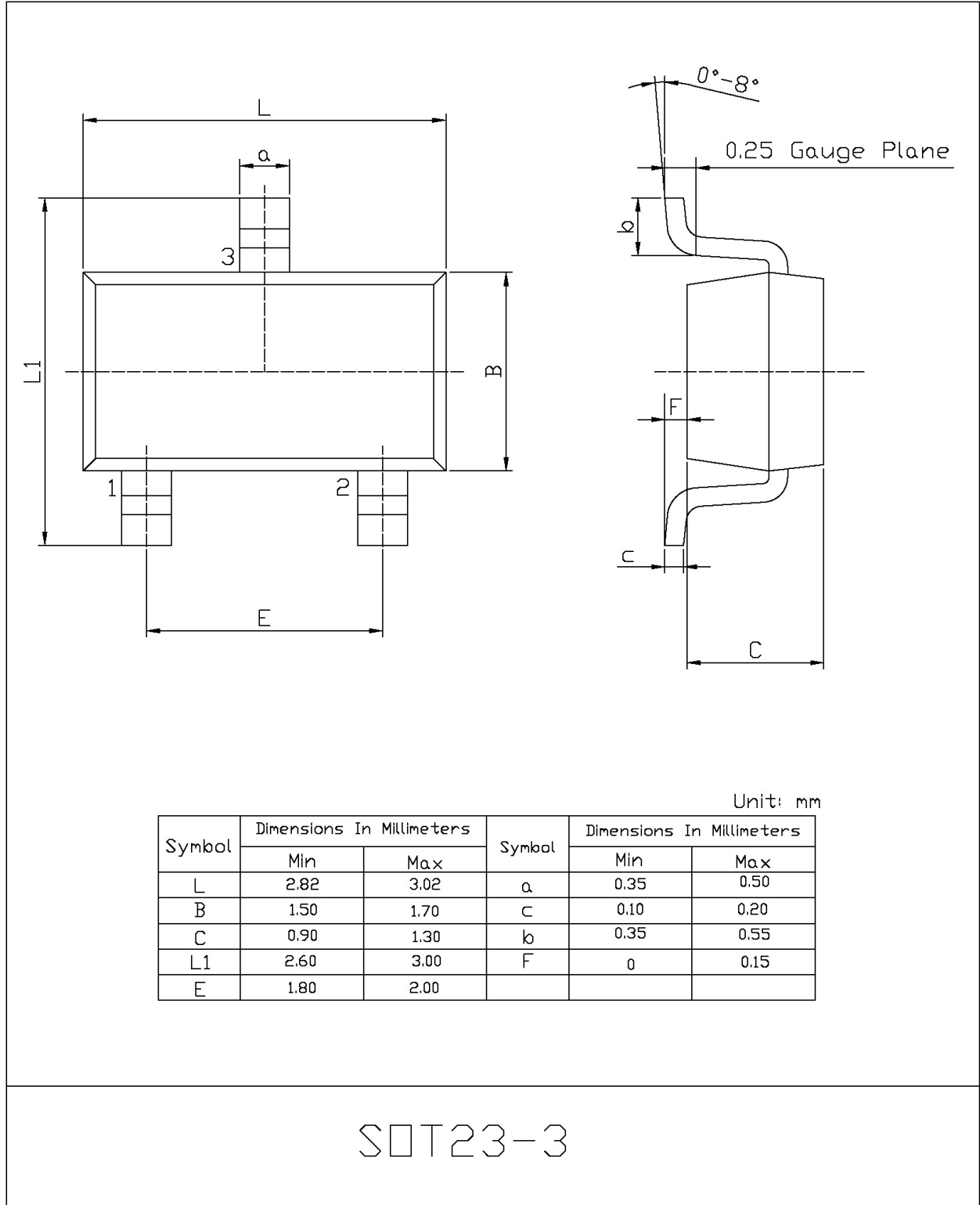
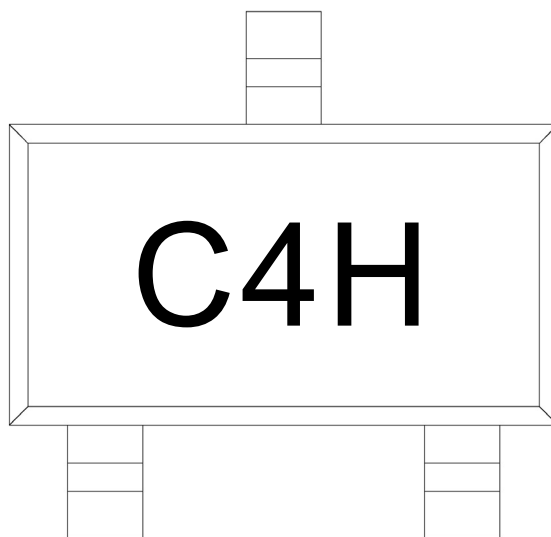


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions



印章说明 / Marking Instructions



说明：

H： 为公司代码

C4： 为型号代码

Note:

H: Company Code

C4: 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