

# BRCS250N03DMF

Rev.A Nov.-2021

## 描述 / Descriptions

SOT23-6 塑封封装双 N 沟道 MOS 场效应管。

Dual N-Channel MOSFET in a SOT23-6 Plastic Package.

## 特征 / Features

超高密度设计，导通电阻小，可靠性好，无卤产品。

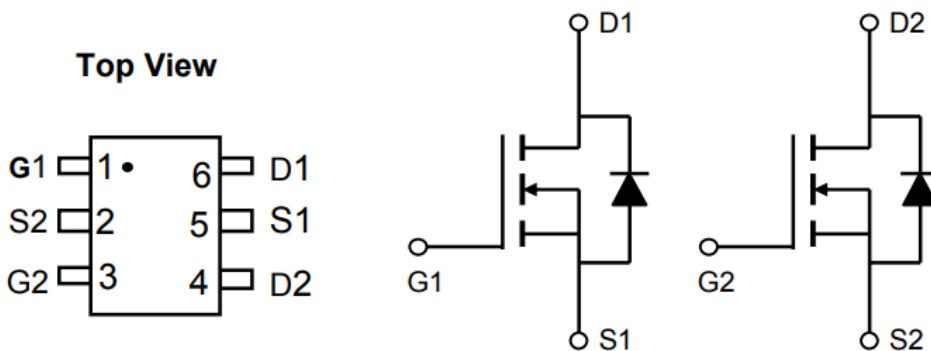
Super high dense cell design for low  $R_{DS(ON)}$ , Rugged and reliable, HF product.

## 用途 / Applications

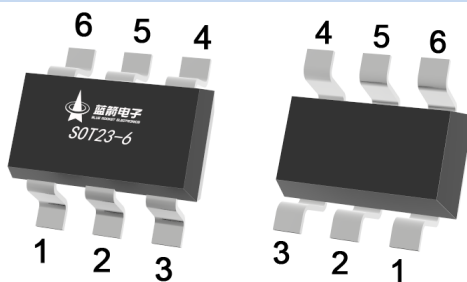
用于电源管理，便携式设备和电池供电系统。

Power Management in Notebook computer, Portable Equipment and Battery powered systems.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN 1 : G1    PIN 2 : S2    PIN 3 : G2

PIN 4 : D2    PIN 5 : S1    PIN 6 : D1

## 印章代码 / Marking

Marking	B4DH
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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 <sub>DSS</sub>	30	V
Gate-Source Voltage	V <sub>GSS</sub>	±20	V
Drain Current – Continuous	I <sub>D</sub>	5.5	A
Pulsed Drain Current	I <sub>DM</sub>	27.5	A
Power Dissipation	P <sub>D</sub>	1.3	W
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C
Maximum Junction-to-Ambient	R <sub>θJA</sub>	95	°C/W
Maximum Junction-to-Ambient		Steady-State	
Maximum Junction-to-Lead	R <sub>θJL</sub>	68	

**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	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0 I <sub>D</sub> =250μA	30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>GS</sub> =0 V <sub>DS</sub> =30V			1.0	μA
Gate–Body Leakage.	I <sub>GSS</sub>	V <sub>GS</sub> =±20V V <sub>DS</sub> =0V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =250μA	1.0	1.6	2.5	V
Static Drain–Source On–Resistance	R <sub>DS(on)1</sub>	V <sub>GS</sub> =10V I <sub>D</sub> =5.5A		20	31	mΩ
	R <sub>DS(on)2</sub>	V <sub>GS</sub> =4.5V I <sub>D</sub> =4.0A		26	43	mΩ
Drain–Source Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V I <sub>D</sub> =1A		0.75	1.2	V

## 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
Input Capacitance	Ciss	VGS=0V, VDS=25V f=1MHz		690		pF
Output Capacitance	Coss			200		
Reverse Transfer Capacitance	Crss			130		
Gate resistance	Rg	VGS=0V, VDS=0V f=1MHz		3.0		Ω
Total Gate Charge	Qg(10V)	VGS=10V, VDS=15V, ID=5.5A		5.2		nC
Total Gate Charge	Qg(4.5V)			2.5		
Gate Source Charge	Qgs			0.8		
Gate Drain Charge	Qgd			1.3		
Turn-On Delay Time	td(on)	VGS=10V RL=3Ω VDS=15V RGEN=3Ω		4.5		ns
Turn-On Rise Time	tr			2.5		
Turn-Off Delay Time	td(off)			14.5		
Turn-Off Fall Time	tf			3.5		

电参数曲线图 / Electrical Characteristic Curve

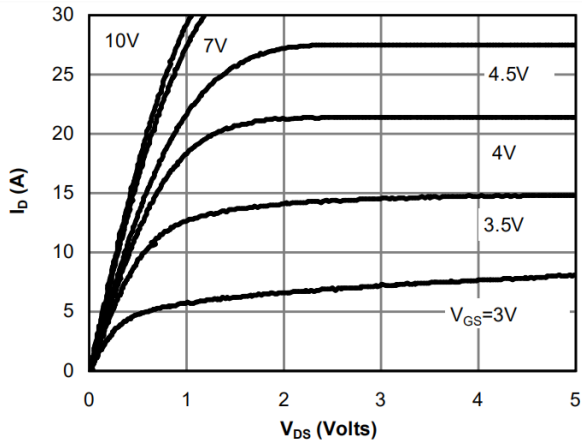


Fig 1: On-Region Characteristics

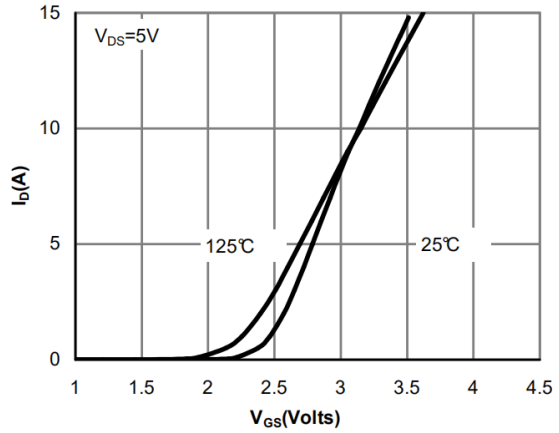


Figure 2: Transfer Characteristics

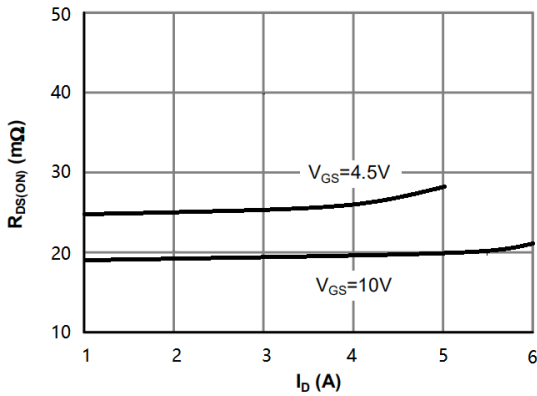


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

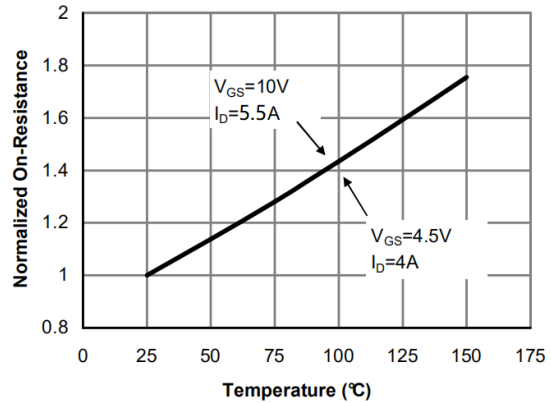


Figure 4: On-Resistance vs. Junction Temperature

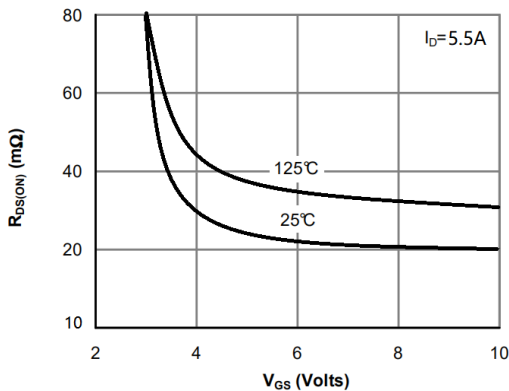


Figure 5: On-Resistance vs. Gate-Source Voltage

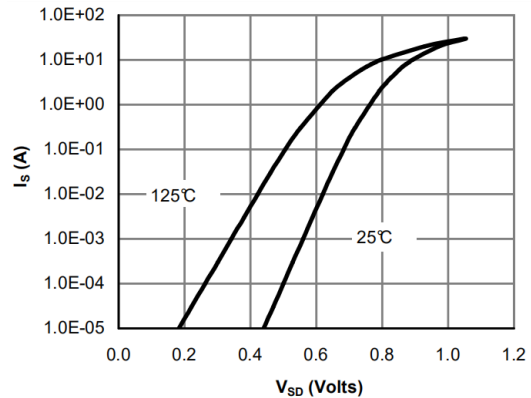
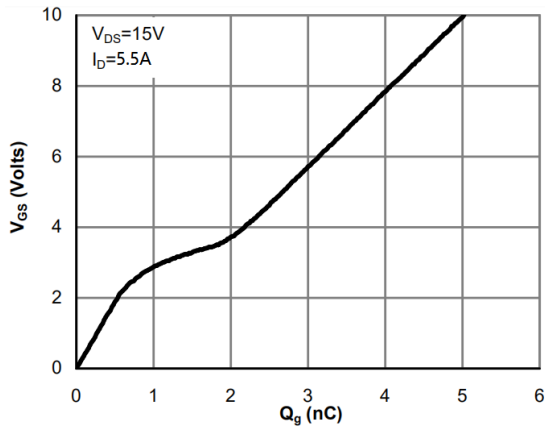
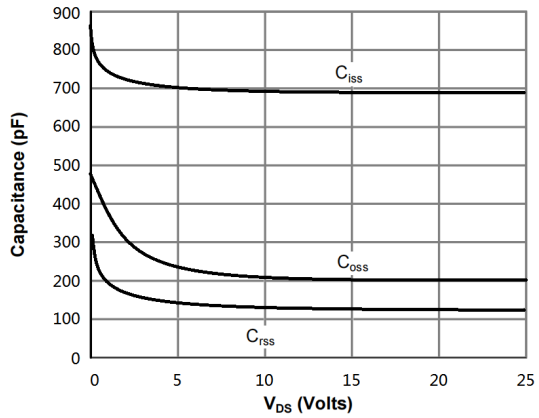


Figure 6: Body-Diode Characteristics

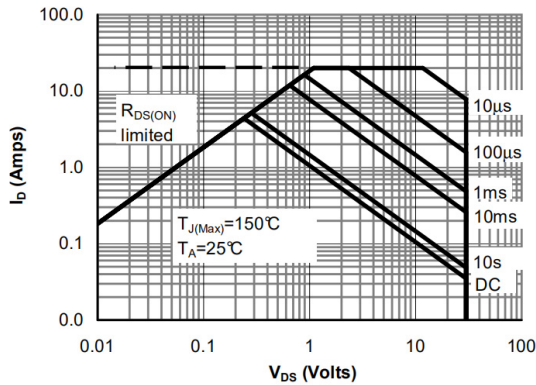
**电参数曲线图 / Electrical Characteristic Curve**



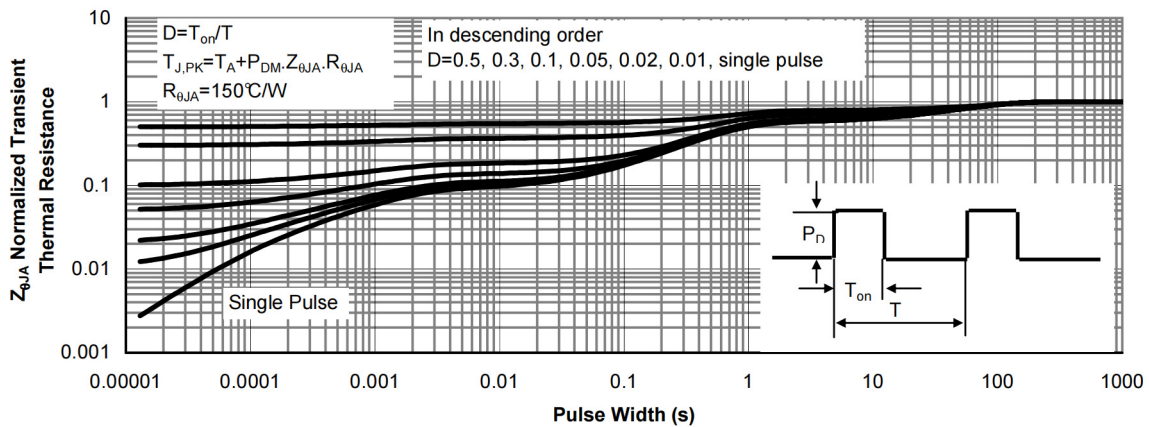
**Figure 7: Gate-Charge Characteristics**



**Figure 8: Capacitance Characteristics**

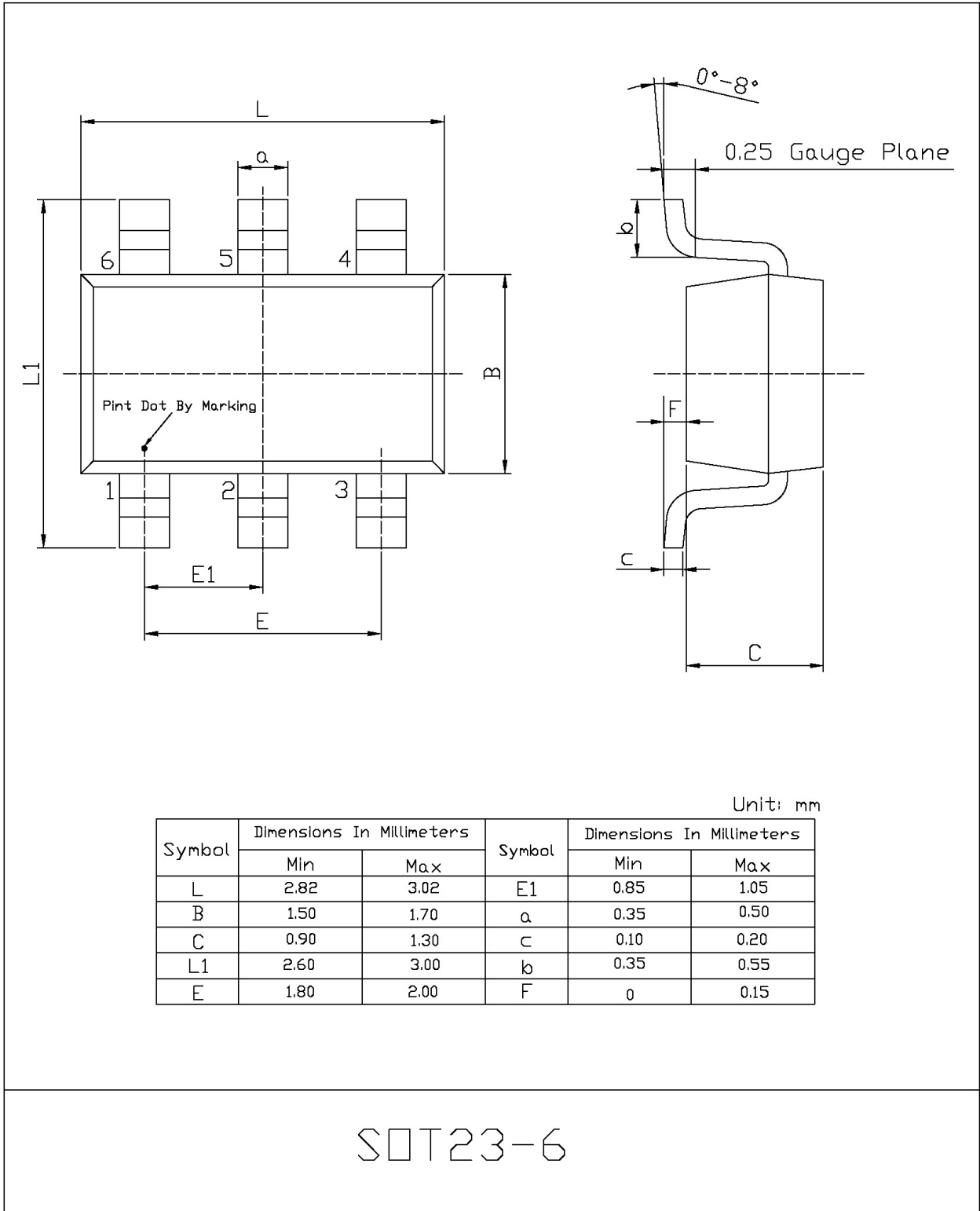


**Figure 09: Maximum Forward Biased Safe Operating Area**

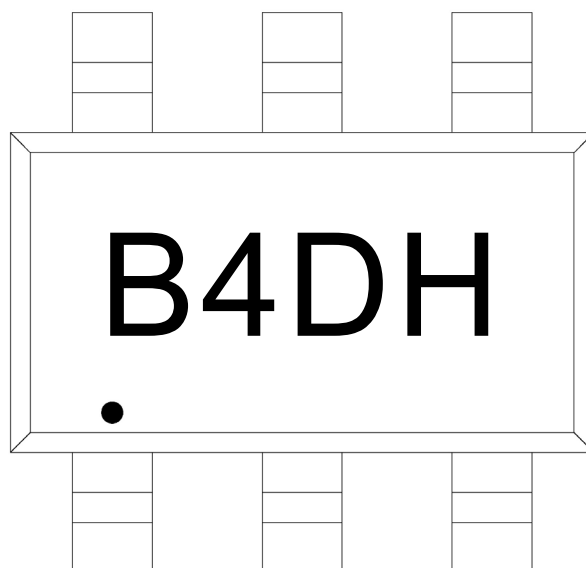


**Figure 10: Normalized Maximum Transient Thermal Impedance**

外形尺寸图 / Package Dimensions



印章说明 / Marking Instructions



说明：

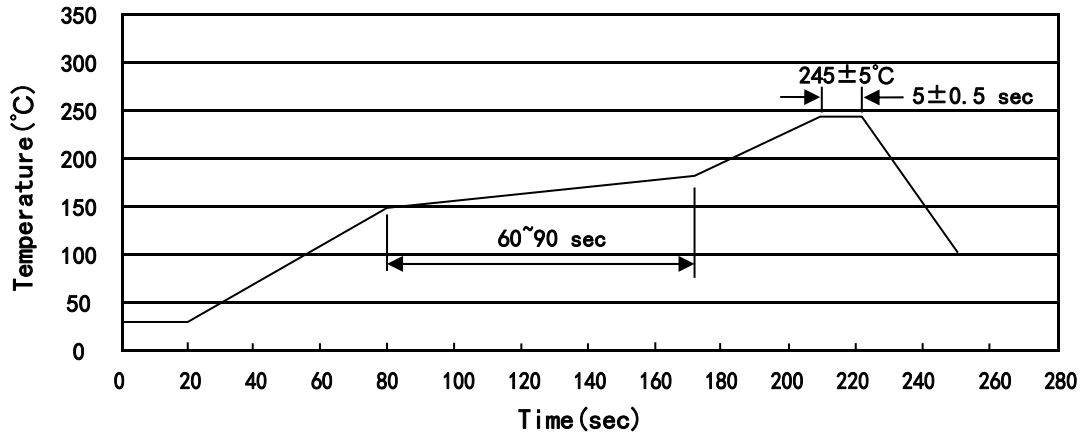
B4D: 为型号代码

H: 为公司代码

Note:

B4D : 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 <sup>3</sup> )		
	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
SOT23-5/6	3,000	10	30,000	4	120,000	7" ×8	210×205×205	445×230×435