BRCS3407MC

Rev.F May.-2025

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) = -30V

I_D = -4.1 A

$R_{DS(ON)}$ < 60mΩ (V_{GS} = -10V)

$R_{DS(ON)}$ < 85mΩ (V_{GS} = -4.5V)

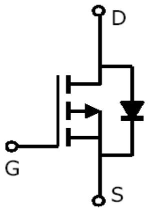
无卤产品。HF Product.

用途 / Applications

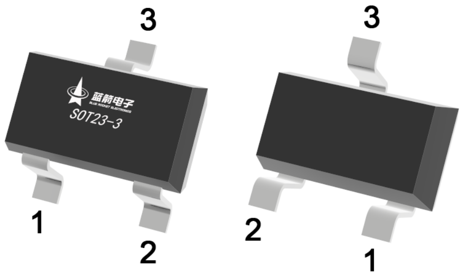
适用于作负载开关或脉宽调制应用。

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	A7H

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	-4.1	A
Drain Current- Continuous	$I_D(T_a=70℃)$	-3.5	A
Pulsed Drain Current	I_{DM}	-20	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	℃
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	125	℃/W
Thermal Resistance-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
On–State Drain Current	$I_{D(on)}$	V_{GS}=-4.5V V_{DS}=-5V	-10			A
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250μA	-1	-1.5	-3	V
Static Drain–Source On–Resistance	$R_{DS(on)1}$	V_{GS}=-10V I_D=-4.1A		54	60	mΩ
	$R_{DS(on)2}$	V_{GS}=-10V I_D=-4.1A T_J=125℃		57	73	
	$R_{DS(on)3}$	V_{GS}=-4.5V I_D=-3A		77	85	
Forward Transconductance	g_{FS}	V_{DS}=-5V I_D=-4A		4.9		S
Drain–Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=-1A		-0.77	-1	V
Input Capacitance	C_{iss}	V_{DS}=-15V V_{GS}=0V f=1MHz		830		pF
Output Capacitance	C_{oss}			410		
Reverse Transfer Capacitance	C_{rss}			200		

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
Total Gate Charge	Q_g(10V)	V_{GS}=-10V, V_{DS}=-15V, I_D=-4.1A		8.5		nC
Total Gate Charge	Q_g(4.5V)			4.5		
Gate Source Charge	Q_{gs}			1.5		
Gate Drain Charge	Q_{gd}			2.0		
Turn–On Delay Time	$t_{d(on)}$	V_{GS}=-10V R_L=3.6Ω V_{DS}=-15V R_{GEN}=3Ω		7.3		ns
Turn–On Rise Time	t_r			4.3		
Turn–Off Delay Time	$t_{d(off)}$			25.2		
Turn–Off Fall Time	t_f			12.5		
Body Diode Reverse Recovery Time	t_{rr}	I_F=-4.1A, dI/dt=100A/μs		10		ns
Body Diode Reverse Recovery Charge	Q_{rr}	I_F=-4.1A, dI/dt=100A/μs		5.2		nC

电参数曲线图 / Electrical Characteristic Curve

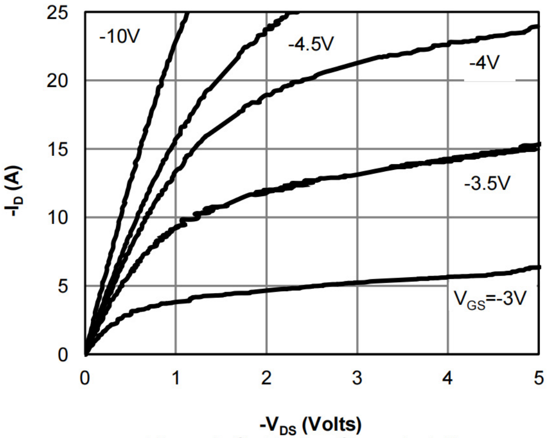


Figure 1: On-Region Characteristics

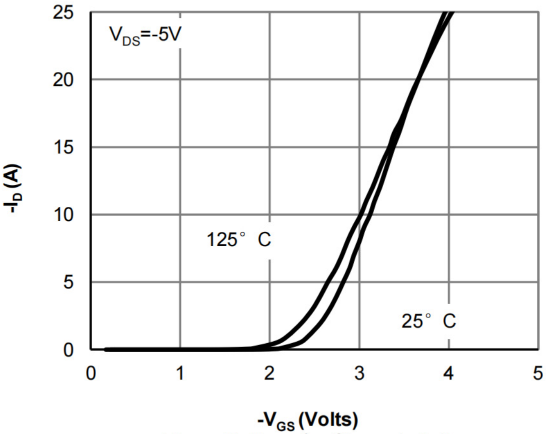


Figure 2: Transfer Characteristics

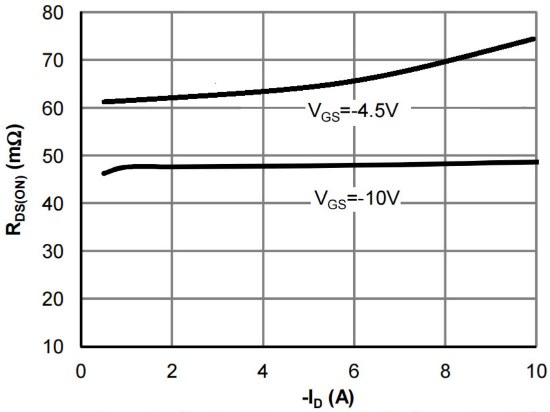


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

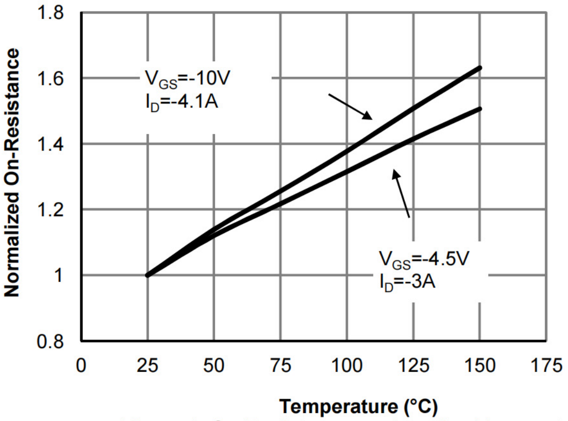


Figure 4: On-Resistance vs. Junction Temperature

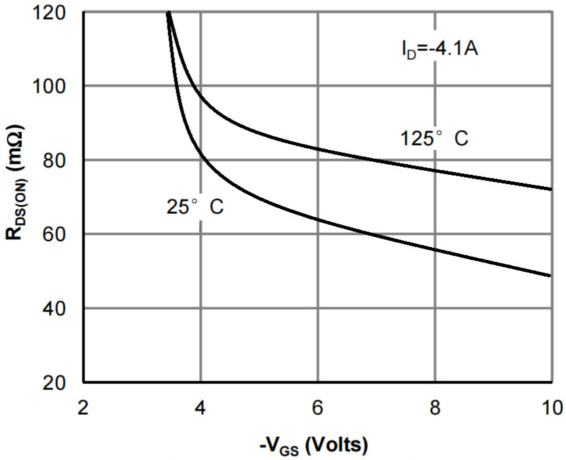


Figure 5: On-Resistance vs. Gate-Source Voltage

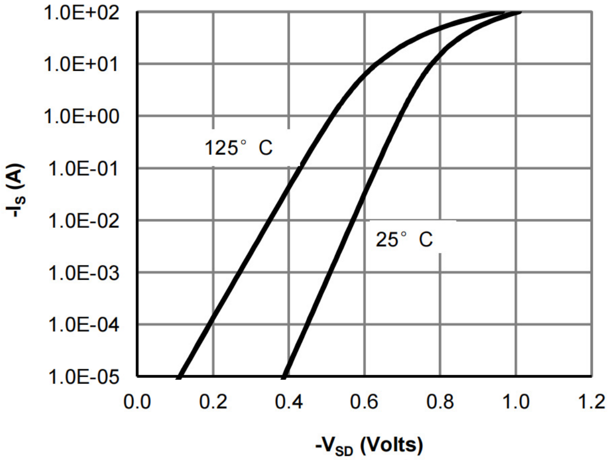


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

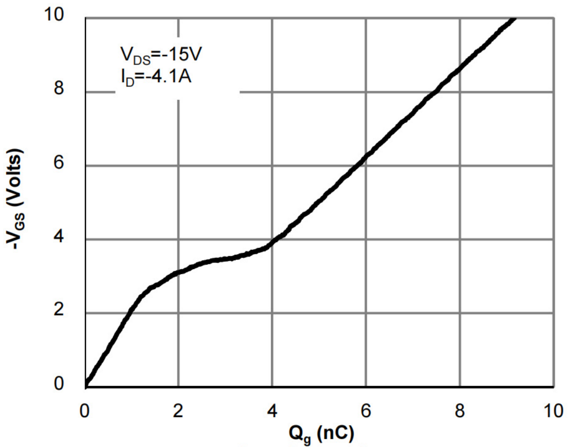


Figure 7: Gate-Charge Characteristics

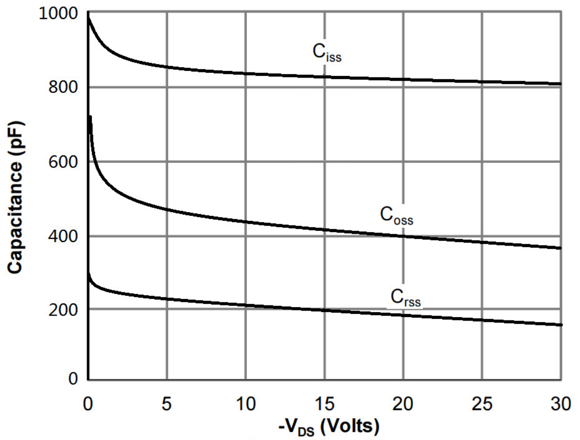


Figure 8: Capacitance Characteristics

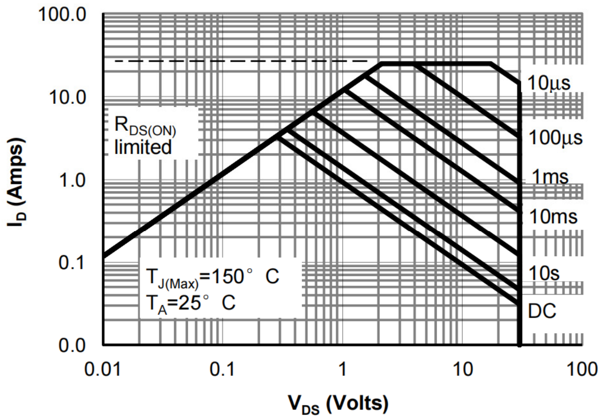


Figure 9: Maximum Forward Biased Safe Operating Area

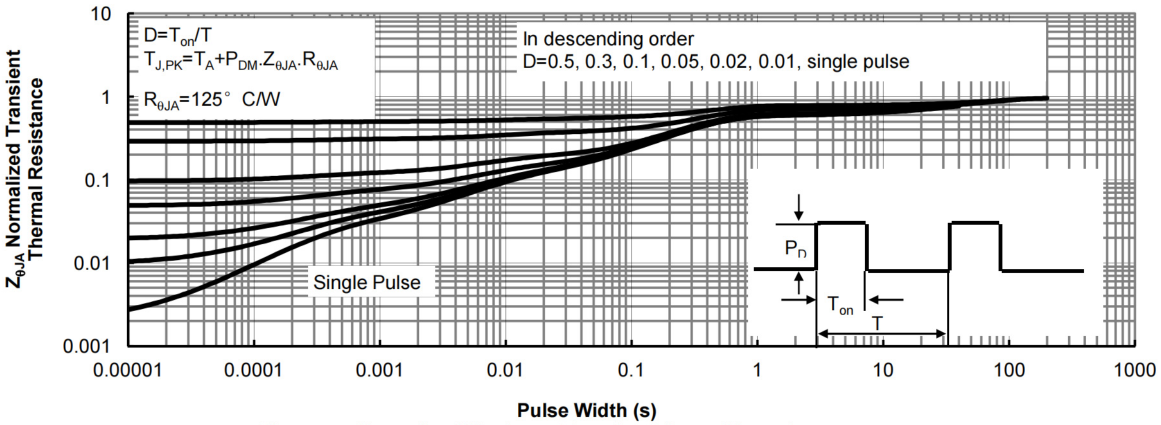
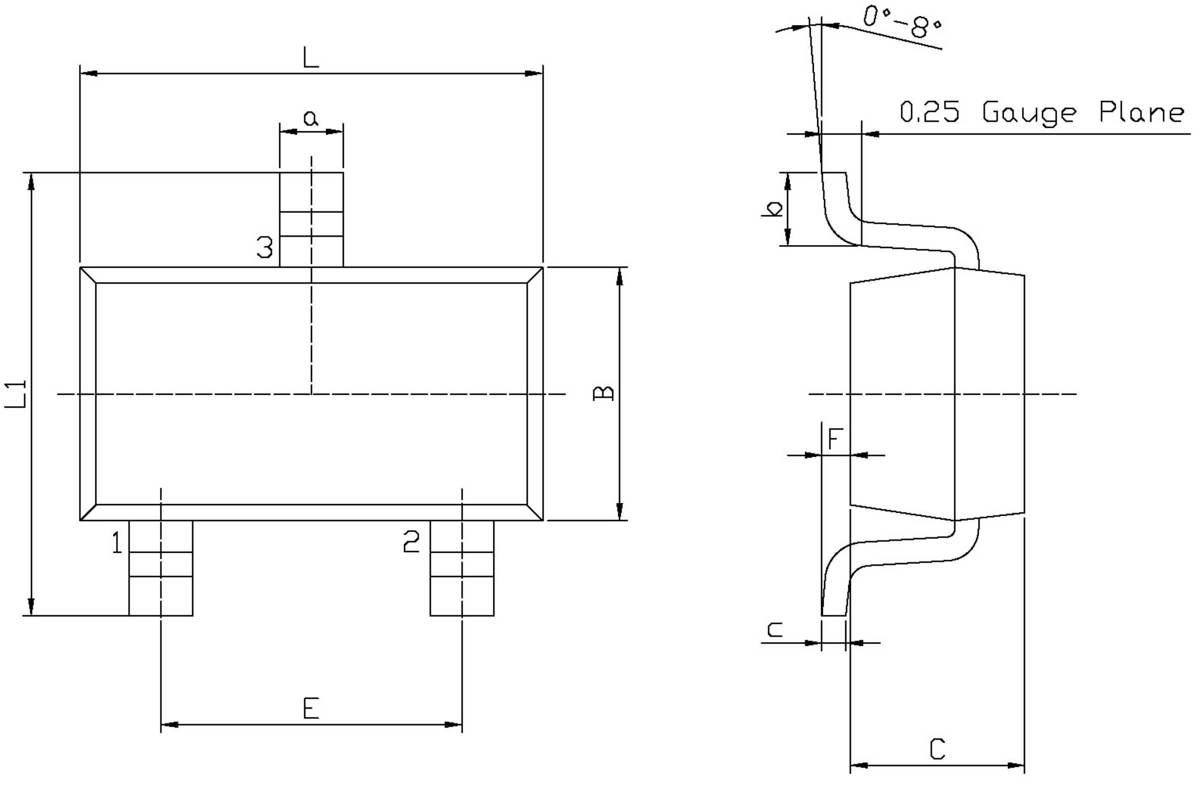


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

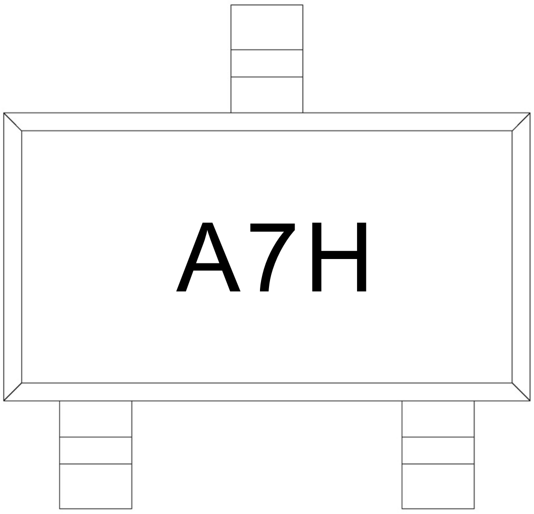


Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	a	0.35	0.50
B	1.50	1.70	c	0.10	0.20
C	0.90	1.30	b	0.35	0.55
L1	2.60	3.00	F	0	0.15
E	1.80	2.00			

SOT23-3

印章说明 / Marking Instructions



说明：

A7： 为型号代码

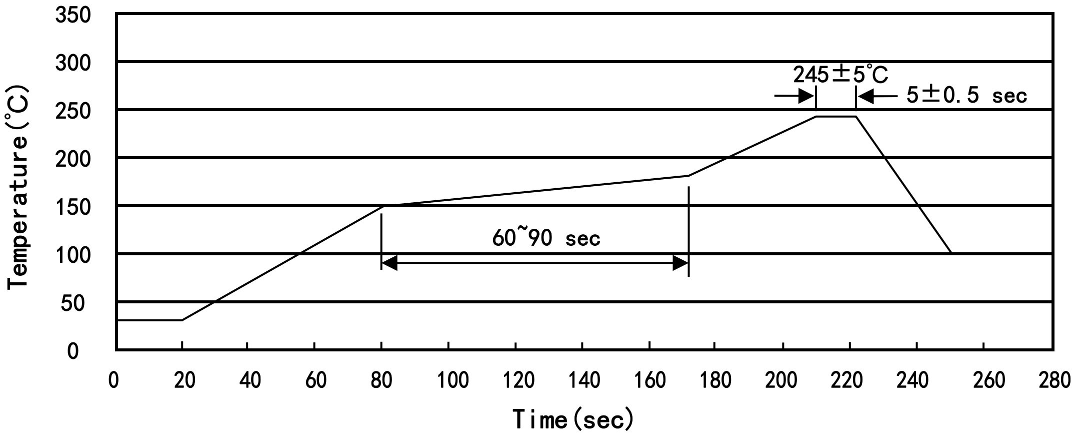
H： 为公司代码

Note:

A7: 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：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