

BRCS2302AWS

Rev.B Apr.-2024

描述 / Descriptions

SOT-363 塑封封装 N 沟道 MOS 场效应管。
N-CHANNEL MOSFET in a SOT-363 Plastic Package.

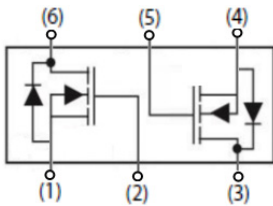
特征 / Features

$V_{DS} (V) = 20V$ $I_D = 1.6A$
 $R_{DS(ON)}@4.5V \leq 80m\Omega$ (Type.60m Ω)
 $R_{DS(ON)}@2.5V \leq 110m\Omega$ (Type.80m Ω)
无卤产品。 HF Product.

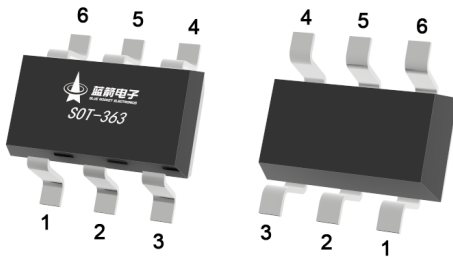
用途 / Applications

DC/DC 转换器、电源管理、负载开关。
DC/DC Converter, Power Management, Loadswitch.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1、4 : S PIN 2、5 : G PIN 3、6 : D

印章代码 / Marking

见印章说明。
See Marking Instructions.

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}	±12	V
Drain Current – Continuous	I _D	1.6	A
Pulsed Drain Current	I _{DM}	7.3	A
Power Dissipation	P _D	0.3	W
Storage Temperature Range	T _{stg}	-55~150	°C
Thermal Resistance-Junction to Ambient	R _{θJA}	416	°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}	V _{GS} =0 I _D =250μA	20	21		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} =0 V _{DS} =20V			1.0	μA
Gate-Body Leakage.	I _{GSS}	V _{GS} =±12V V _{DS} =0V			±100	nA
Static Drain-Source On-Resistance	R _{DS(on)1}	V _{GS} =4.5V I _D =2.0A		60	80	mΩ
	R _{DS(on)2}	V _{GS} =2.5V I _D =1.5A		80	110	mΩ
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _D =1.0A			1.2	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250μA	0.5	0.6	1.0	V
Input Capacitance	C _{iss}	V _{DS} =15V V _{GS} =0V f=1.0MHz		340		pF
Output Capacitance	C _{oss}			30		pF
Reverse Transfer Capacitance	C _{rss}			25		pF
Total Gate Charge	Q _g (10V)	V _{GS} =10V, V _{DS} =15V, I _D =2A		8.2		nC
Total Gate Charge	Q _g (4.5V)			4.3		
Gate Source Charge	Q _{gs}			2		
Gate Drain Charge	Q _{gd}			1.5		
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V V _{DS} =15V R _{GEN} =3Ω R _L =3.75Ω		2.5		ns
Turn-On Rise Time	t _r			3		
Turn-Off Delay Time	t _{d(off)}			30		
Turn-Off Fall Time	t _f			5		

电参数曲线图 / Electrical Characteristic Curve

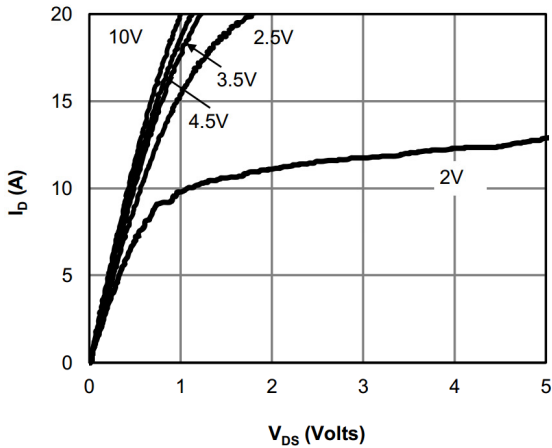


Figure 1: On-Region Characteristics

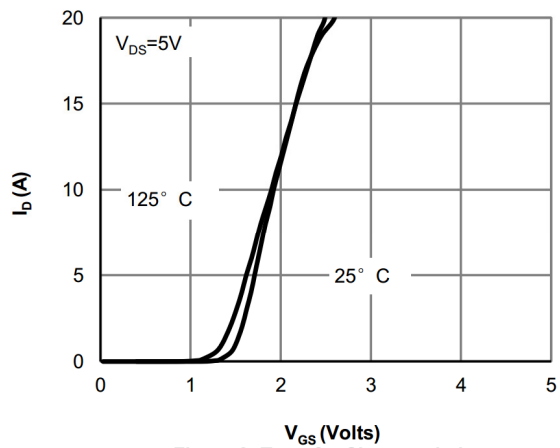


Figure 2: Transfer Characteristics

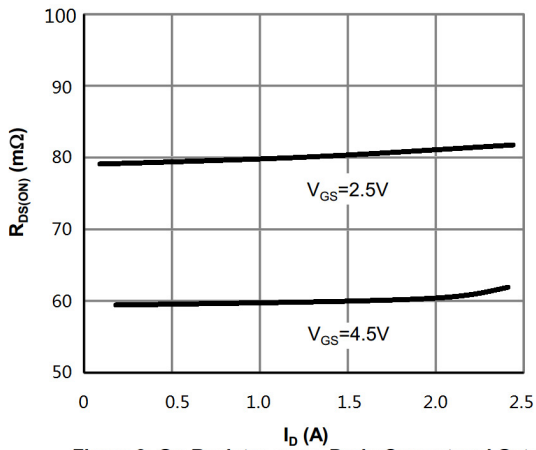


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

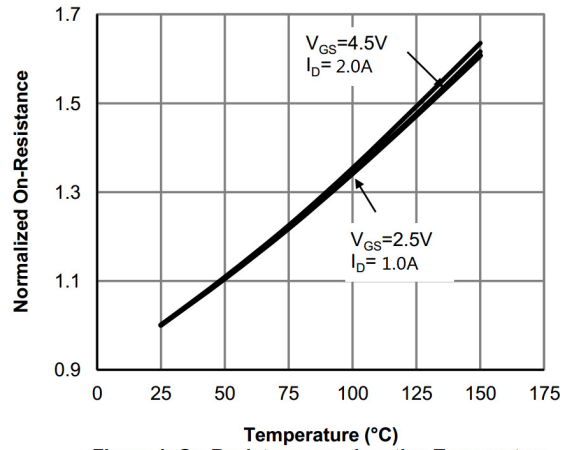


Figure 4: On-Resistance vs. Junction Temperature

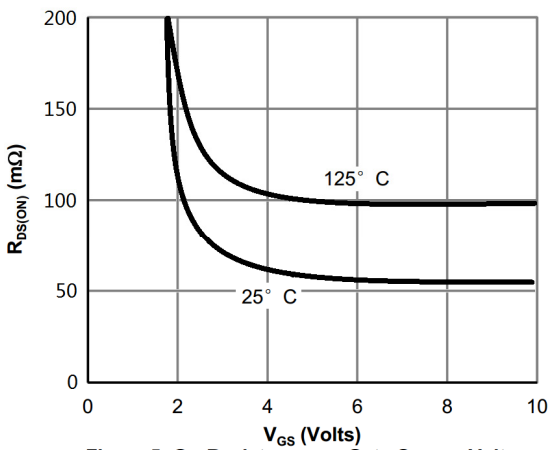


Figure 5: On-Resistance vs. Gate-Source Voltage

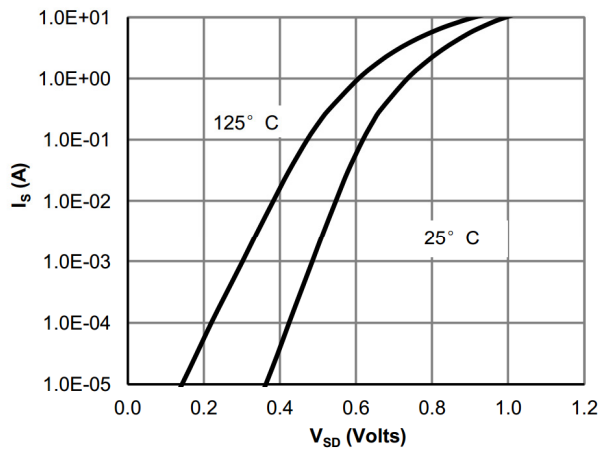


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

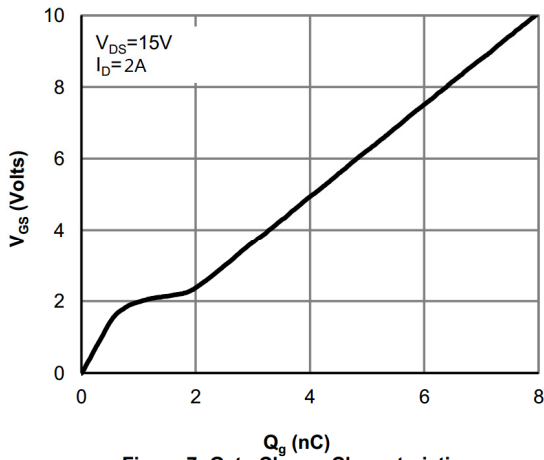


Figure 7: Gate-Charge Characteristics

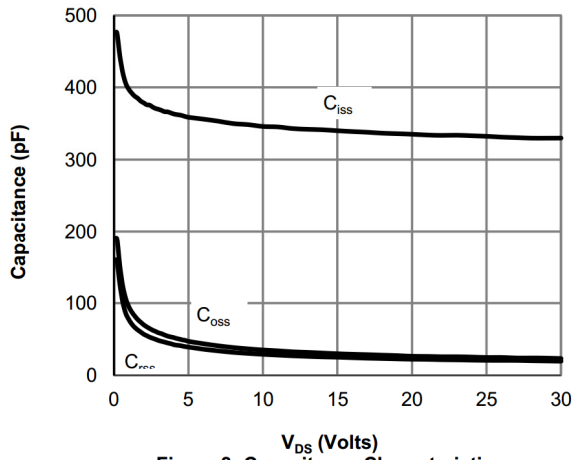


Figure 8: Capacitance Characteristics

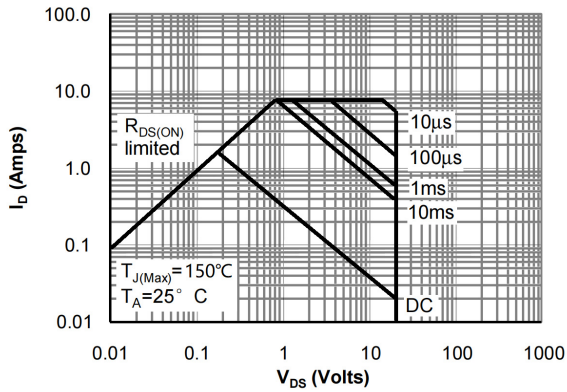


Figure 9: Maximum Forward Biased Safe Operating Area

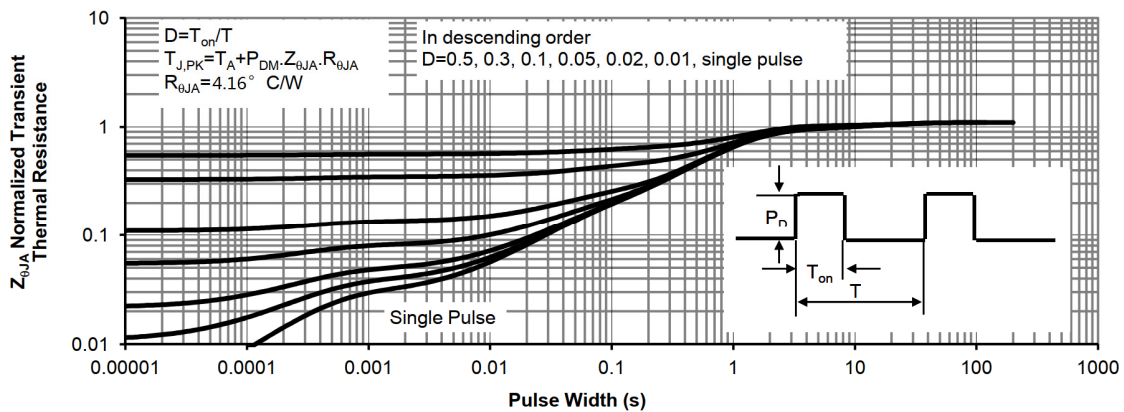
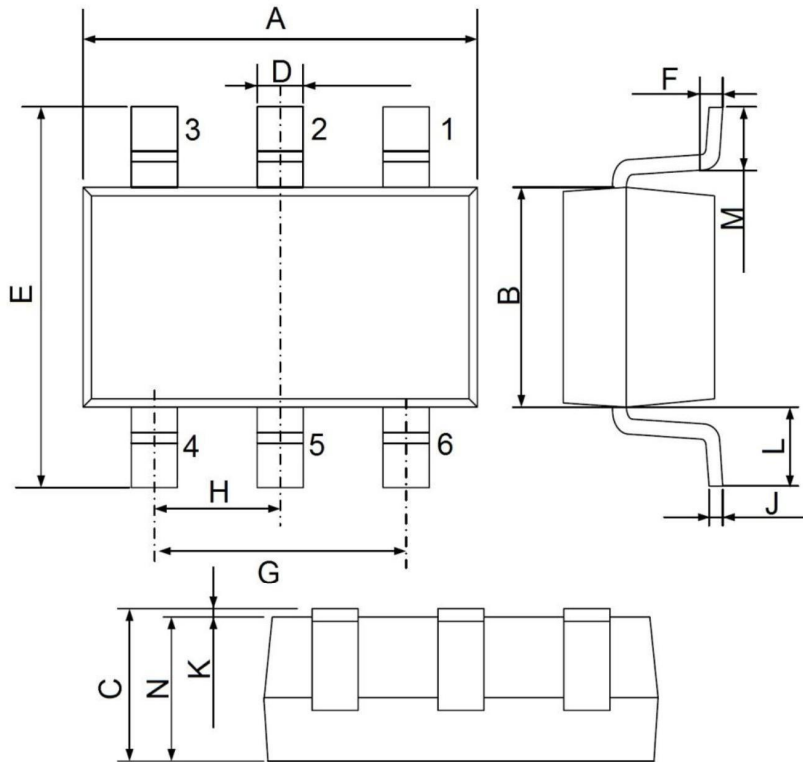


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

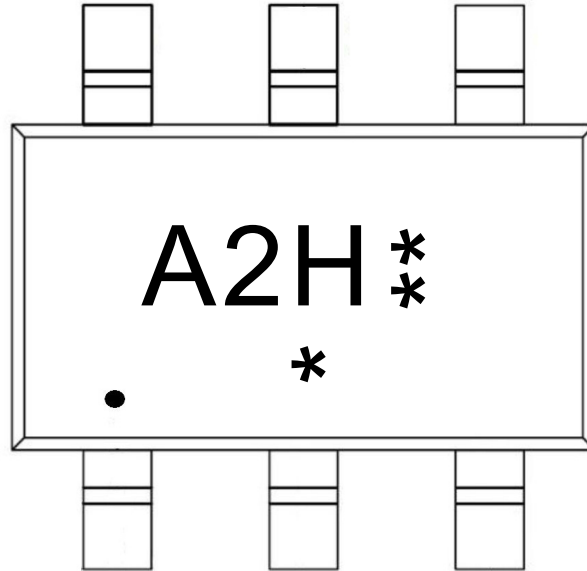
SOT-363-6L



UNIT: mm

DIM	MIN	MAX
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	1.95	2.25
F	0.20 Typ.	
G	1.20	1.40
H	0.65 Typ.	
J	0.08	0.15
K	0.00	0.10
L	0.525 Ref.	
M	0.26	0.46
N	0.90	1.10

印章说明 / Marking Instructions

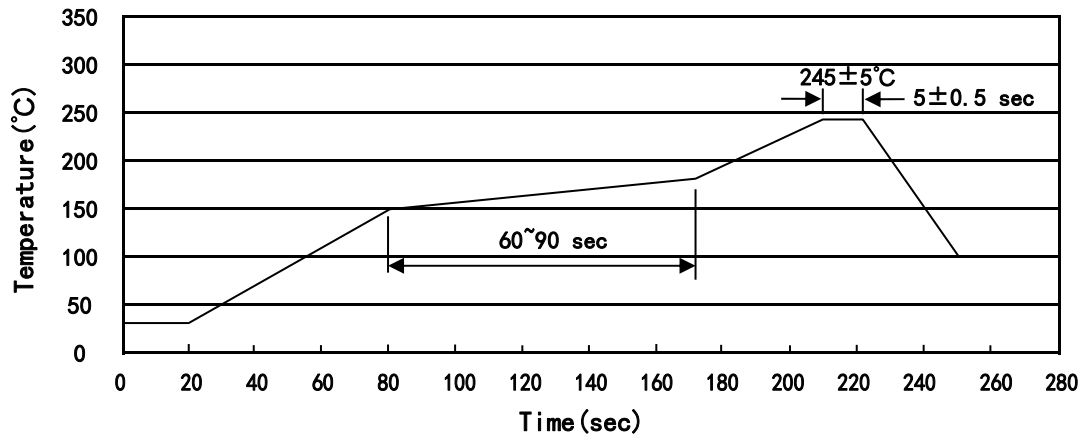


说明：

- ： 为“1”脚
- A2H： 为型号代码
- ***： 为生产批号代码，随生产批号变化

Note:

- ： “1” Pin
- A2H: Product Type Code
- ***: Lot No. Code, code change with Lot No

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-363	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

使用说明 / Notices