

BRCS3415AMA

Rev.A Jun.-2025

/ Descriptions

SOT-23 P MOS
P- CHANNEL MOSFET in a SOT-23 Plastic Package.

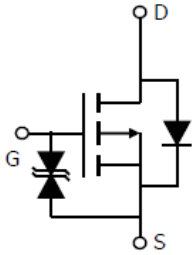
/ Features

$V_{DS}=-20V$ $I_D=-5.3A$
 $R_{DS(on)}@-4.5V \leq 33.2m\Omega$, (Typ. 25.5m Ω)
 $R_{DS(on)}@-2.5V \leq 46.8m\Omega$, (Typ. 35.2m Ω)
ESD Protected
HF Product.

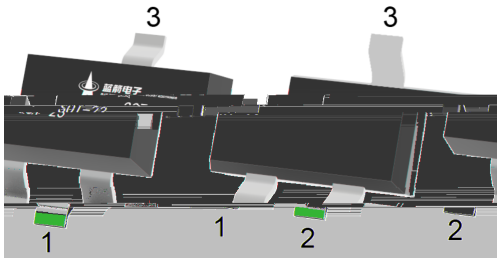
/ Applications

Load switch Battery protection.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 S PIN 3 D

/ Marking

Marking	AFH
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/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DS}	-20	V
Gate-Source Voltage	V _{GS}	±12	V
Drain Current-Continuous	I _D	-5.3	A
Drain Current-Continuous(T _A =100°C)	I _D	-3.3	A
Drain Current-Pulsed	I _{DM}	-21.2	A
Maximum Power Dissipation	P _D	1.3	W
Maximum Power Dissipation(T _A =100°C)	P _D	0.5	W
Operating Junction Temperature Range and Storage Temperature Range	T _J , T _{STG}	-55 to +150	° C
Thermal Resistance, Junction-to-Ambient	R _{JA}	96	° C/W

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	B _{VDS}	V _{GS} =0V I _D =-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 _D =-250μA	-0.5		-1.0	V
Drain-Source On-State Resistance	R _{DS}	V _{GS} =-4.5V I _D =-2.5A		25.5	33.2	m
		V _{GS} =-2.5V I _D =-2.0A		35.2	46.8	
Gate resistance	R _g	V _{GS} =0V, f=1.0MHz V _{DS} =0V,		580		
Input Capacitance	C _{iss}	V _{DS} =-10V V _{GS} =0V f=1MHz		260		pF
Output Capacitance	C _{oss}			105		
Reverse Transfer Capacitance	C _{rss}			20		
Turn-On Delay Time	t _{d(on)}	V _{DS} =-10V V _{GS} =-4.5V R _{GEN} =3 R _L =2		12		ns
Rise Time	t _r			35		
Turn-Off Delay Time	t _{d(off)}			30		
Fall Time	t _f			10		
Total Gate Charge	Q _g	V _{DS} =-10V V _{GS} =-4.5V I _{DS} =-5A		9		nC
Gate-Source Charge	Q _{gs}			1.5		
Gate-Drain Charge	Q _{gd}			1.5		
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _{DS} =-1A			-1.2	V
Reverse Recovery Time	t _{rr}	I _F =-5A, dI/dt=100A/μs		170		ns
Reverse Recovery Charge	Q _{rr}	I _F =-5A, dI/dt=100A/μs		60		nC

/ Electrical Characteristic Curve

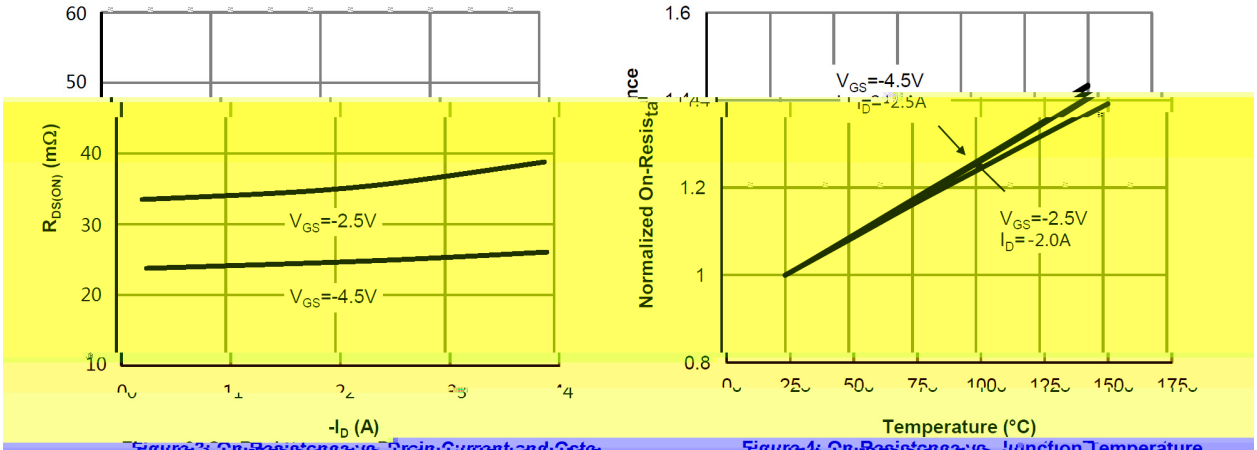
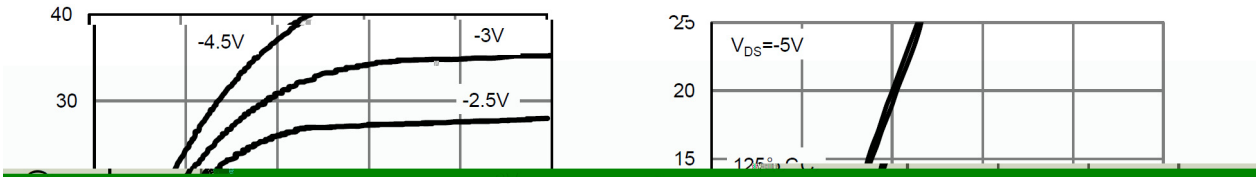
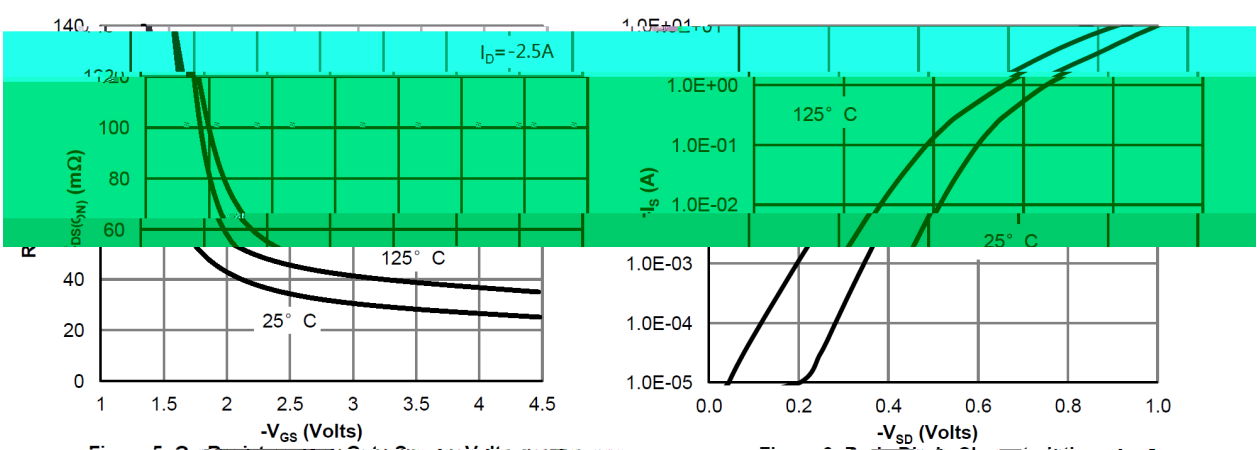


Figure 3. On-Resistance vs. Drain Current and Gate-Source Voltage

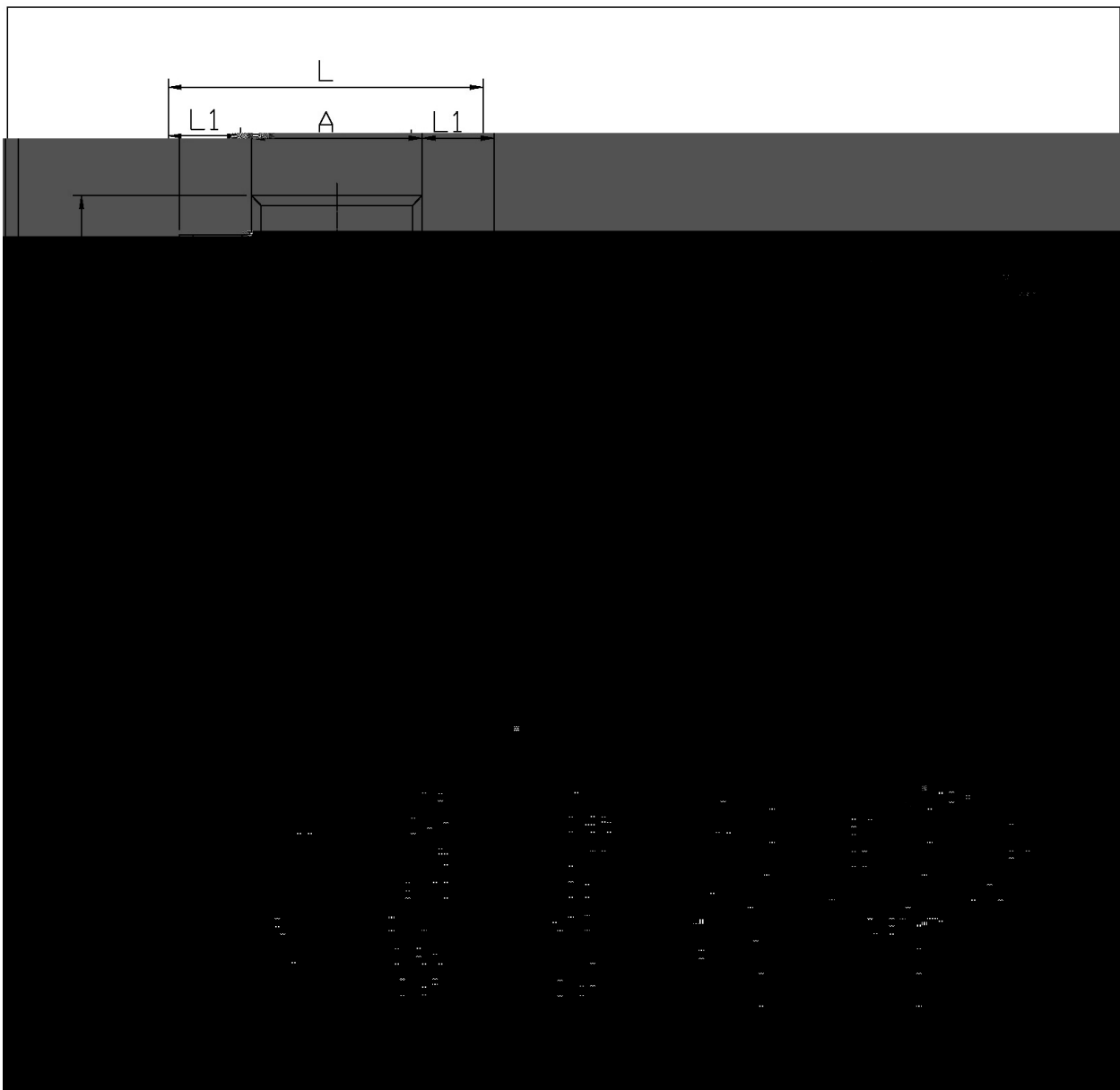
Figure 4. On-Resistance vs. Junction Temperature



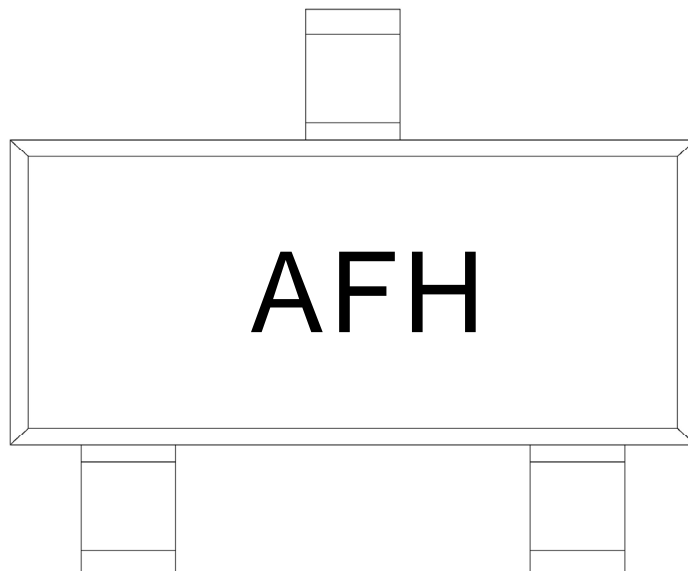
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



H:

AF:

Note:

H: Company Code

AF Product Type Code

() / Temperature Profile for IR Reflow Soldering(Pb-Free)

Note:

- | | | | |
|---|-----------|-------------|---|
| 1 | 150 ~ 180 | 60 ~ 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245±5 | 5±0.5sec; | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | 2 ~ 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260±5	10±1 sec.	Temp.:260±5℃	Time:10±1 sec
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/ Packaging SPEC.

/ REEL