

修订记录 / Revised record

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描述 / Descriptions

SOT-23 N MOS

N- CHANNEL MOSFET in a SOT-23 Plastic Package.

特征 / Features $R_{DS(ON)}$

SOT-23

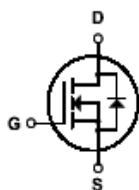
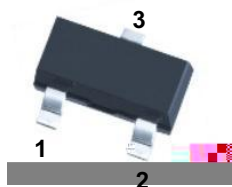
AEC-Q101

Super high dense cell design for low $R_{DS(ON)}$, SOT-23 package, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

用途 / Applications

DC-DC

Battery management, High speed switch, low power DC to DC converter, Meet the stringent requirements of automotive 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

A2Q

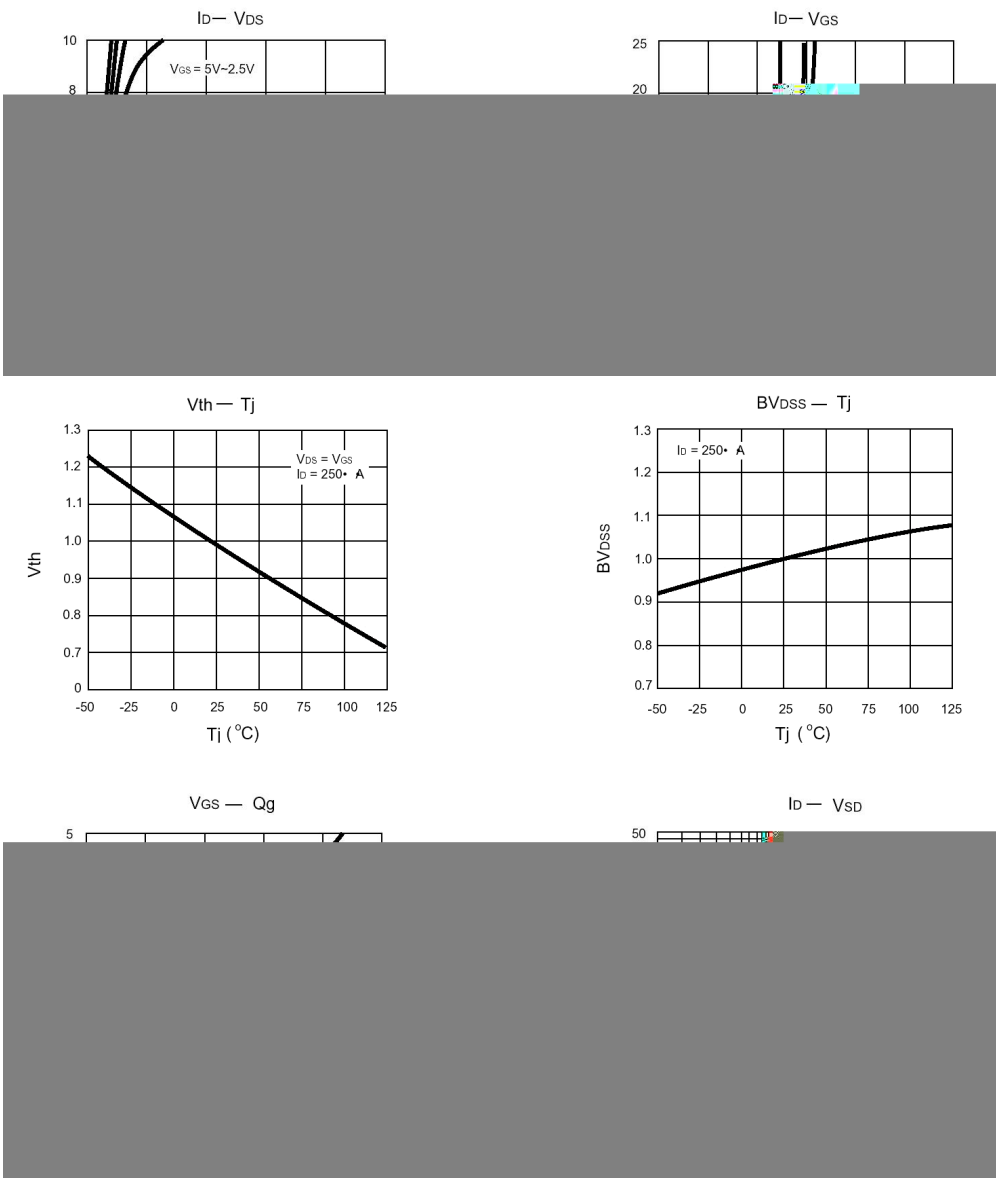
极限参数 / Absolute Maximum Ratings($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	20	V
Gate-Source Voltage	V_{GSS}	± 8	V
Drain Current – Continuous	I_{D}	3.0	A
Pulsed Drain Current	I_{DM}	10	A
Continuous Source Current	I_{S}	0.95	A
Power Dissipation	P_{D}	0.9	W
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^{\circ}\text{C}$

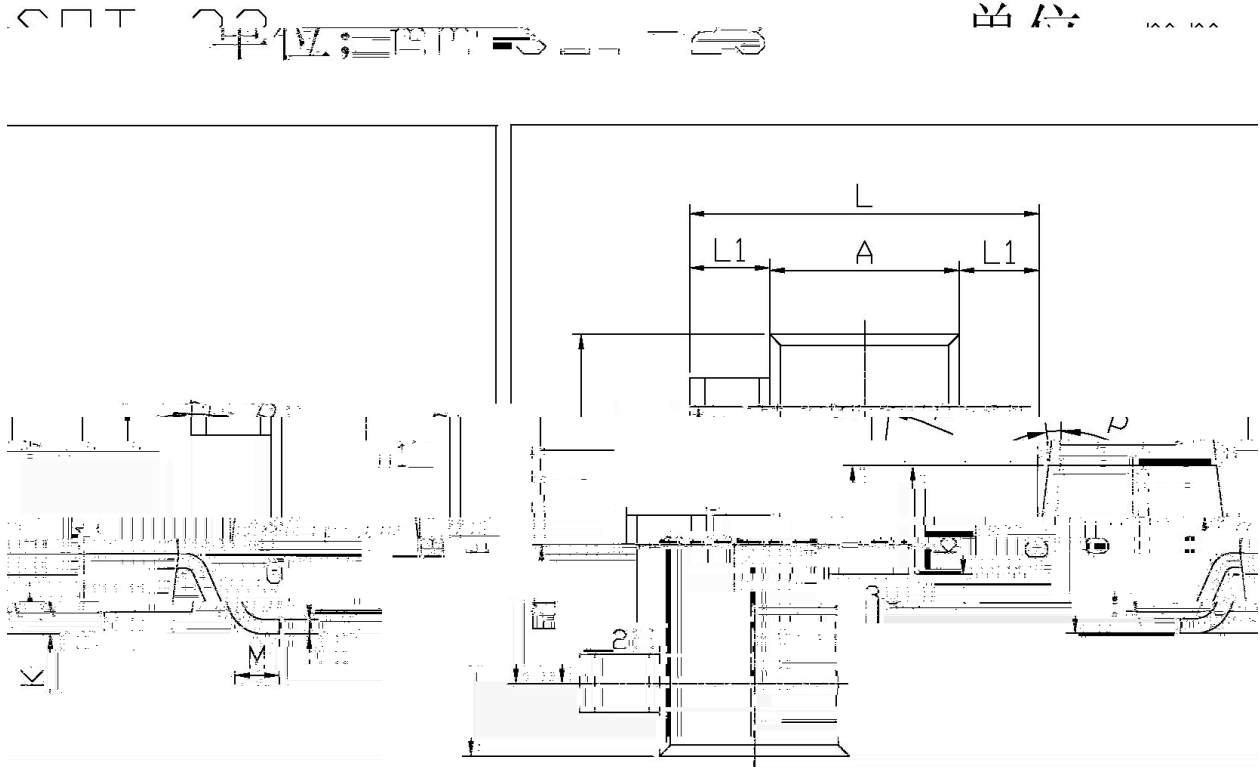
电性能参数 / Electrical Characteristics($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}}=0$ $I_{\text{D}}=10\mu\text{A}$	20	21		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{\text{GS}}=0$ $V_{\text{DS}}=20\text{V}$			1.0	μA
Gate–Body Leakage.	I_{GSS}	$V_{\text{GS}}=\pm 8\text{V}$ $V_{\text{DS}}=0\text{V}$			± 100	nA
Static Drain–Source On–Resistance	$R_{\text{DS(on)1}}$	$V_{\text{GS}}=4.5\text{V}$ $I_{\text{D}}=3.6\text{A}$		34	60	$\text{m}\Omega$
	$R_{\text{DS(on)2}}$	$V_{\text{GS}}=2.5\text{V}$ $I_{\text{D}}=3.1\text{A}$		41	115	$\text{m}\Omega$
Forward Transconductance	g_{FS}	$V_{\text{DS}}=5\text{V}$ $I_{\text{D}}=3.6\text{A}$		8		S
Drain–Source Diode Forward Voltage	V_{SD}	$V_{\text{GS}}=0\text{V}$ $I_{\text{D}}=1.25\text{A}$			1.2	V
Gate Threshold Voltage	$V_{\text{GS(th)}}$	$V_{\text{DS}}=V_{\text{GS}}$ $I_{\text{D}}=50\mu\text{A}$	0.50		1.0	V
State Drain Current	$I_{\text{D(on)}}$	$V_{\text{DS}}=5\text{V}$ $V_{\text{GS}}=2.5\text{V}$	4			A
Turn–On Delay Time	$t_{\text{d(on)}}$	$V_{\text{DD}}=10\text{V}$ $I_{\text{D}}=3.6\text{A}$ $V_{\text{GEN}}=4.5\text{V}$ $R_{\text{GEN}}=6\Omega$ $R_{\text{L}}=2.8\Omega$		7		ns
Turn–On Rise Time	t_{r}			55		
Turn–Off Delay Time	$t_{\text{d(off)}}$			15		
Turn–Off Fall Time	t_{f}			10		

电参数曲线图 / Electrical Characteristic Curve

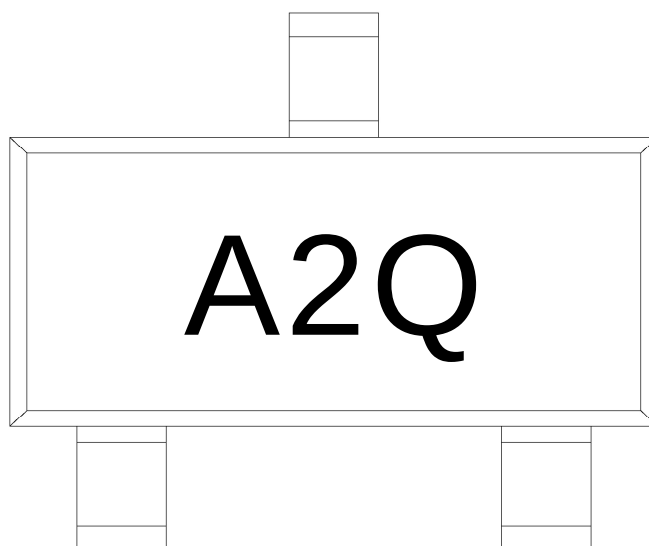


外形尺寸图 / Package Dimensions



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
		0.45		0.65	0.90
		1.15		1.50	0.20
		2.70		3.10	0.10
		0.30			0.20
		7°			0.8
					0.2

印章说明 / Marking Instructions



A2:

Q

Note:

A2 Product Type Code

Q: Automobile halogen-free product Code



回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)

Note:

- | | | | | | |
|---|-------|-----|-----------|---|---|
| 1 | 150 | 200 | 60 | 120sec; | 1.Preheating:150~200°C, Time:60~120sec. |
| 2 | 255±5 | | 5±0.5sec; | 2.Peak Temp:255±5°C, Duration:5±0.5sec. | |
| 3 | | 2 | 10°C/sec. | 3. Cooling Rate: 2~10°C/sec. | |

耐焊接热试验条件 / Resistance to Soldering Heat Conditions

260±5°C 10±1 sec. ±5°C Time:10±1 sec

包装规格 / Packaging SPEC.

/ REEL

Package Type	Units		Dimension (unit mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Reel 只/卷盘	Reel	Inner Box Outer Box