

描述 / Descriptions

SOT-523 塑封封装 P 沟道 MOS 场效应管。

P-CHANNEL MOSFET in a SOT-523 Plastic Package.

特征 / Features

$V_{DS}(V) = -20\text{ V}$ $I_D = -0.7\text{ A}$

$R_{DS(ON)} @ -4.5\text{ V} \leq 520\text{ m}\Omega$ (Typ. 400 m Ω)

$R_{DS(ON)} @ -2.5\text{ V} \leq 780\text{ m}\Omega$ (Typ. 570 m Ω)

$R_{DS(ON)} @ -1.8\text{ V} \leq 1100\text{ m}\Omega$ (Typ. 810 m Ω)

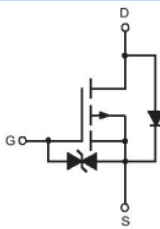
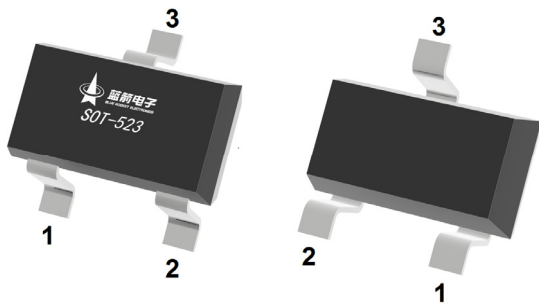
静电保护达 2KV。ESD protected up to 2KV.

无卤产品。HF Product.

用途 / Applications

负载切换、低电流逆变器、低电流 DC/DC 转换器。

Load Switching, Low Current Inverters, Low Current DC/DC Converters.

内部等效电路 / Equivalent Circuit**引脚排列 / Pinning**

PIN 1 : G

PIN 2 : S

PIN 3 : 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 _{DSS}	-20	V
Gate-Source Voltage	V _{GSS}	±12	V
Drain Current – Continuous	I _D	-0.7	A
Pulsed Drain Current	I _{DM}	-2.0	A
Power Dissipation	P _D	0.25	W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 to 150	°C
Thermal resistance, junction - ambient	R _{θJA}	500	°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	V _{DSS}	V _{GS} =0 I _D =-250uA	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} =0 V _{DS} =-16V			-1	μA
Gate–Body Leakage	I _{GSS}	V _{DS} =0V V _{GS} =±10V			±10	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250uA	-0.4	-0.7	-1.0	V
Static Drain-Source On-Resistance	R _{DS(on)(1)}	V _{GS} =-4.5V I _D =-500mA		400	520	mΩ
	R _{DS(on)(2)}	V _{GS} =-2.5V I _D =-300mA		570	780	mΩ
	R _{DS(on)(3)}	V _{GS} =-1.8V I _D =-120mA		810	1100	mΩ
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _S =-500mA			-1.2	V
Gate Resistance	R _g	V _{GS} =0V V _{DS} =0V f=1MHz		60		Ω
Input Capacitance	C _{iss}	V _{DS} =-10V V _{GS} =0V f=1.0MHz		80		pF
Output Capacitance	C _{oss}			15		
Reverse Transfer Capacitance	C _{rss}			13		
Total Gate Charge	Q _g	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-0.2A		2.3		nC
Gate Source Charge	Q _{gs}			0.5		
Gate Drain Charge	Q _{gd}			0.2		
Turn-On Delay Time	t _{d(on)}	V _{GS} =-4.5V V _{DS} =-10V R _L =25Ω R _{GEN} =3Ω		8.0		ns
Turn-On Rise Time	t _r			5.5		
Turn-Off Delay Time	t _{d(off)}			30		
Turn-Off Fall Time	t _f			17		

电参数曲线图 / Electrical Characteristic Curve

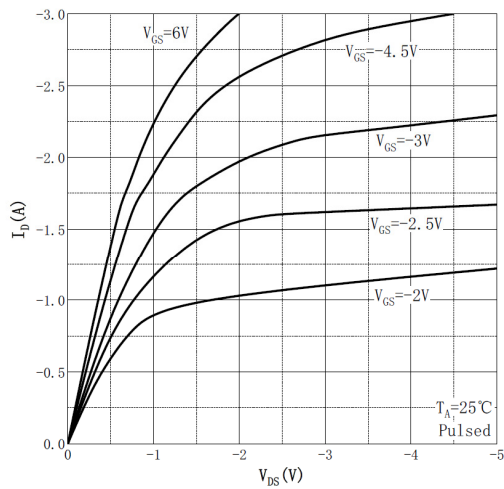


Figure 1. Output Characteristics

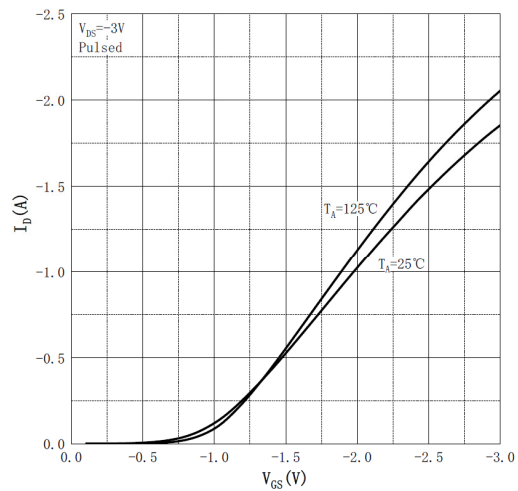


Figure 2. Transfer Characteristics

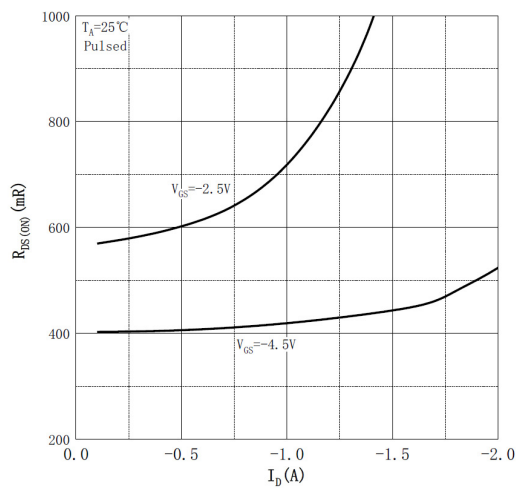


Figure 3.RDS(ON) VS. ID

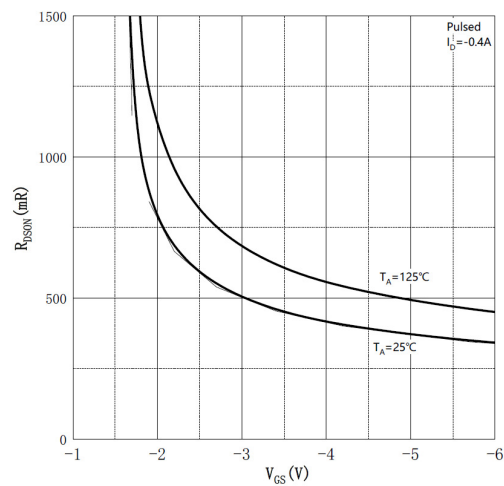


Figure 4.RDS(ON) VS. VGS

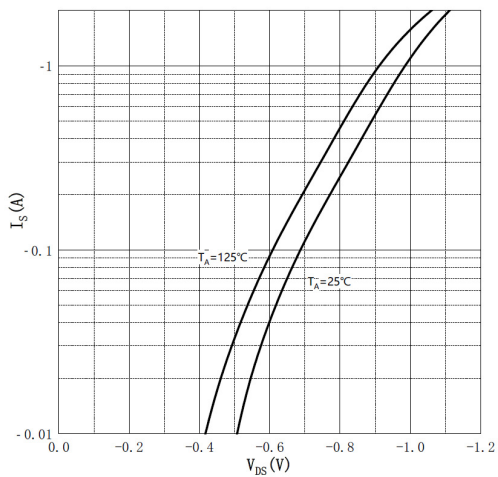


Figure 5. IS VS. VSD

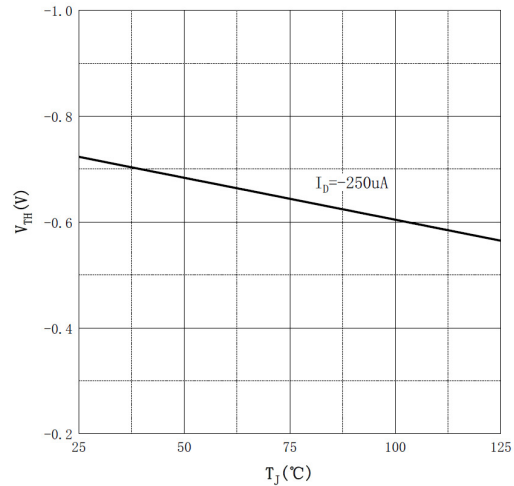
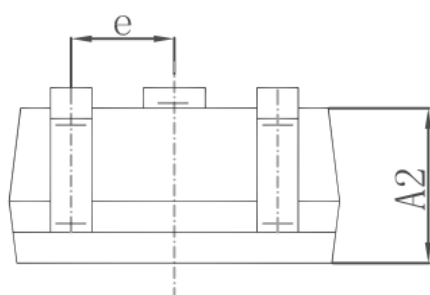
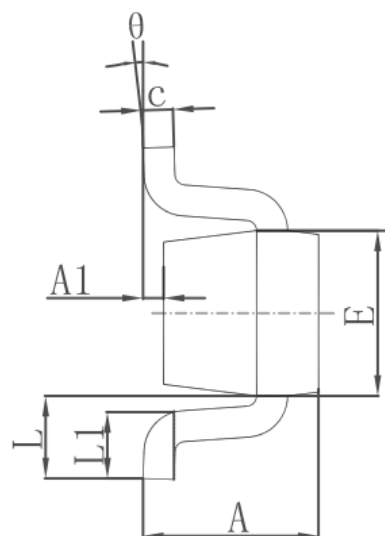
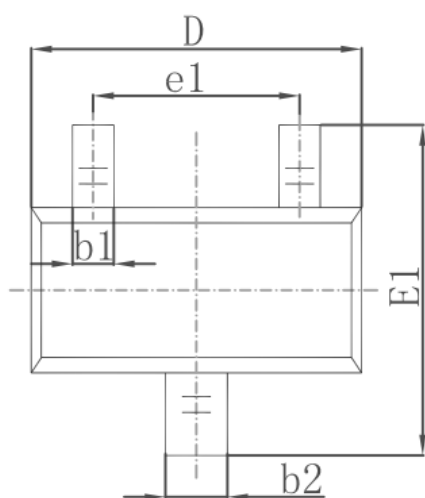


Figure 6. Threshold Voltage

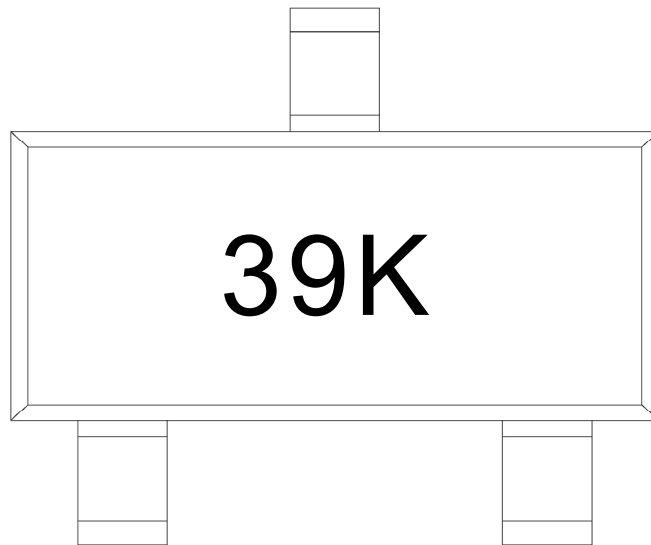
外形尺寸图 / Package Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°



印章说明 / Marking Instructions

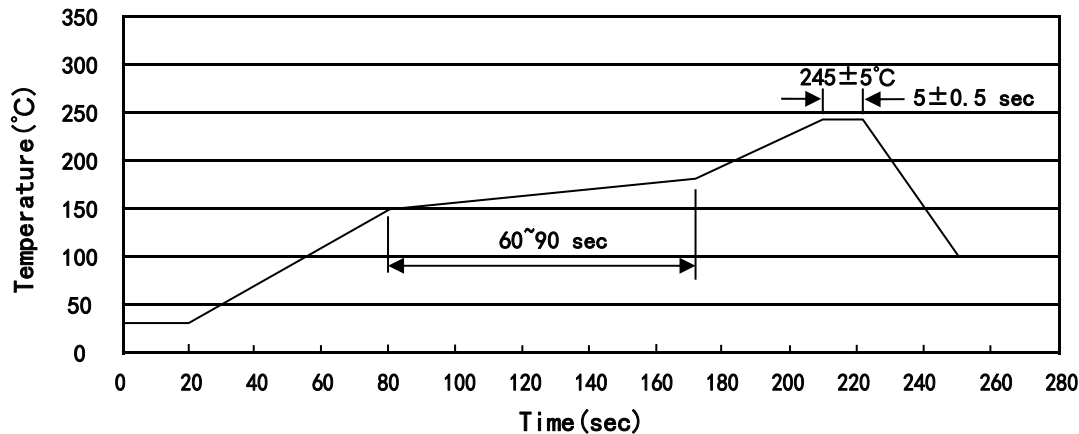


说明：

39K： 为型号代码

Note:

39K: Product Type 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 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-523	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

使用说明 / Notices

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