

描述 / Descriptions

SOT23-3 塑封封装 P 道场效应管。

P- CHANNEL MOSFET in a SOT23 -3 Plastic Package.

特征 / Features

$V_{DS}=-60V$; $I_D=-3A$

$R_{DS(on)1}@-10V \leq 100m\Omega$ (Type.83m Ω)

$R_{DS(on)2}@-4.5V \leq 130m\Omega$ (Type.100m Ω)

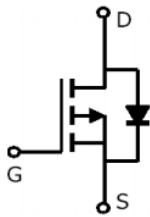
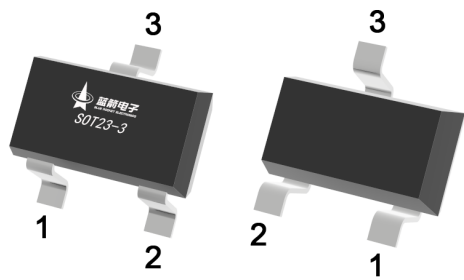
符合 AEC-Q101 标准高可靠性要求，无卤产品。

Qualified to AEC-Q101 Standards for High Reliability, HF Product.

用途 / Applications

PWM 应用与负载开关，满足汽车应用的严格要求。

PWM application & Load switch, 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

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}	-60	V
Gate-Body Leakage Voltage	V_{GSS}	± 20	V
Drain Current – Continuous	I_D	-3	A
Pulsed Drain Current	I_{DM}	-16	A
Power Dissipation	P_D	1.4	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55~150	°C
Maximum Junction-to-Ambient	$R_{\theta JA}$	89	°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	$V_{(BR)DSS}$	$V_{GS}=0V$ $I_D=-250\mu A$	-60	-65		V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1	-1.6	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V$ $I_D=-2A$		83	100	mΩ
		$V_{GS}=-4.5V$ $I_D=-1A$		100	130	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V$ $V_{GS}=0V$			-1.0	μA
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $T_J=25^\circ C$ $I_S=-1A$			-1.2	V
Gate resistance	R_g	$f=1MHz$		6.5		Ω
Input Capacitance	C_{iss}	$V_{DS}=-25V$ $V_{GS}=0V$ $f=1.0MHz$		890		pF
Output Capacitance	C_{oss}			90		
Reverse Transfer Capacitance	C_{rss}			64		
Total Gate Charge	$Q_{g(-10V)}$	$V_{DS}=-10V$ $V_{GS}=-10.0V$ $I_D=-3A$		12.3		nC
Total Gate Charge	$Q_{g(-4.5V)}$			6.3		
Gate-to-Source Charge	Q_{gs}			1.6		
Gate-to-Drain Charge	Q_{gd}			2.4		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-10V$ $R_L=5.4\Omega$ $V_{GS}=-10V$ $R_{GEN}=3\Omega$		12		ns
Turn-On Rise Time	t_r			20		
Turn-Off Delay Time	$t_{d(off)}$			20		
Turn-Off Fall Time	t_f			25		

电参数曲线图 / Electrical Characteristic Curve

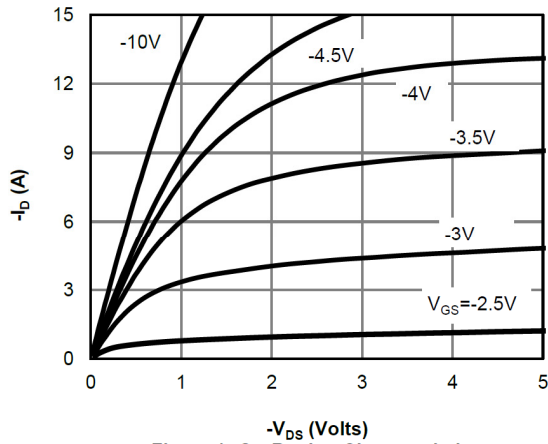


Figure 1: On-Region Characteristics

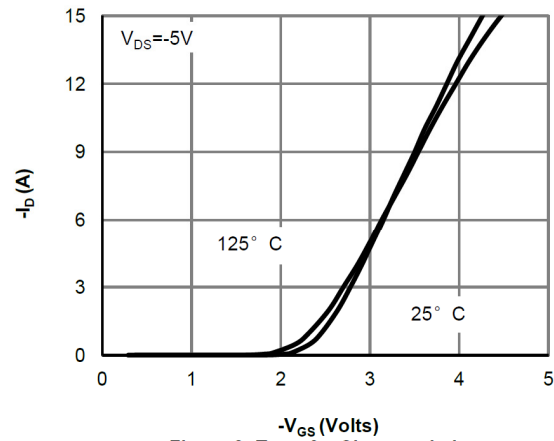


Figure 2: Transfer Characteristics

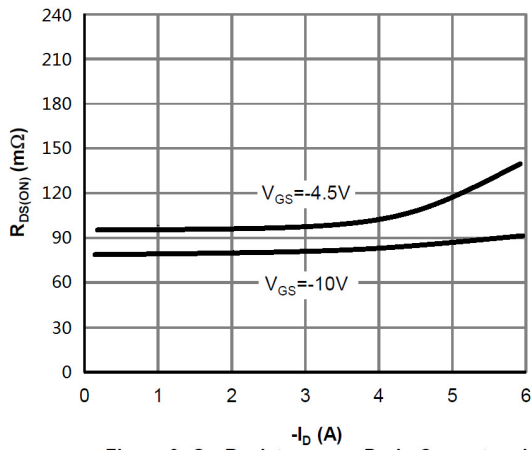


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

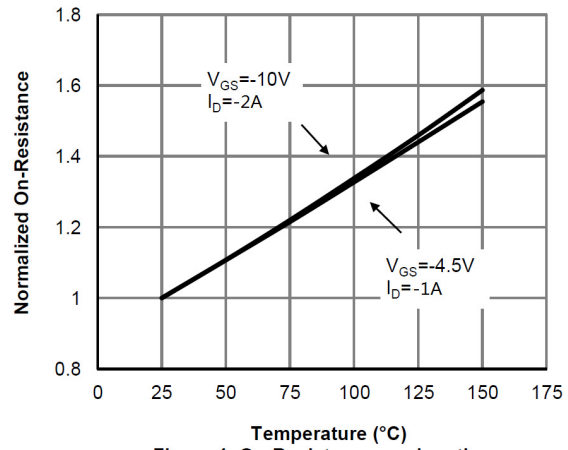


Figure 4: On-Resistance vs. Junction Temperature

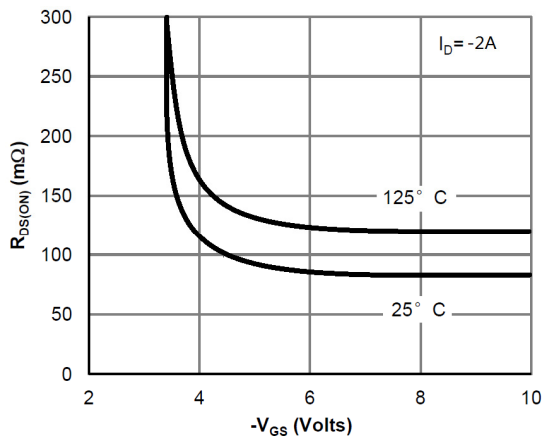


Figure 5: On-Resistance vs. Gate-Source Voltage

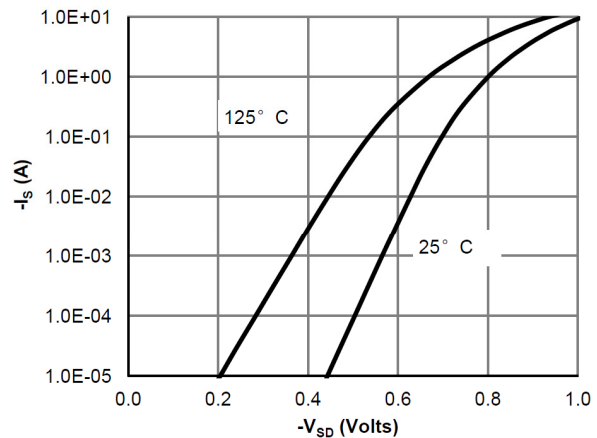


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

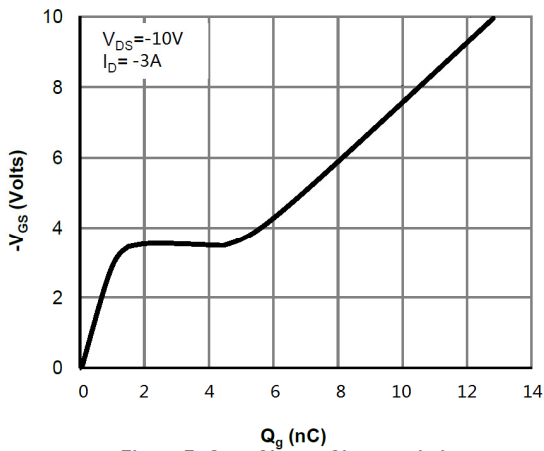


Figure 7: Gate-Charge Characteristics

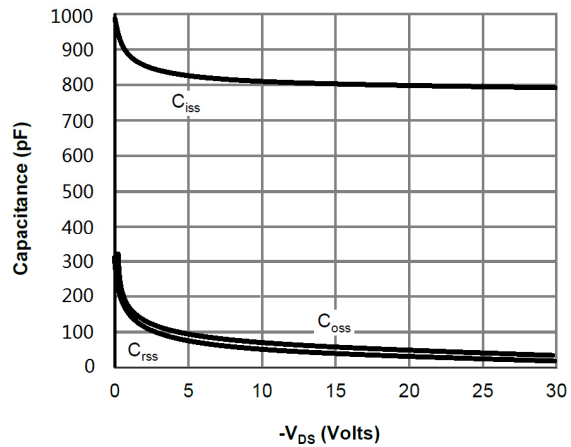


Figure 8: Capacitance Characteristics

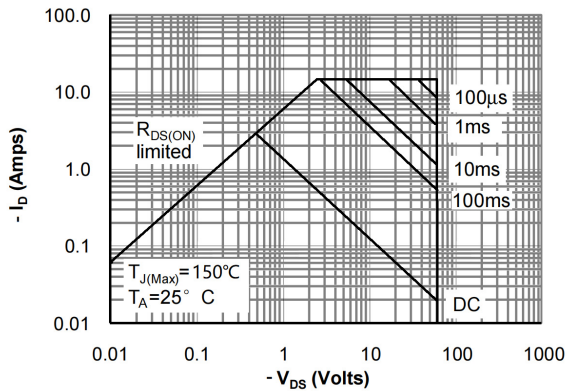


Figure 9: Maximum Forward Biased Safe Operating Area

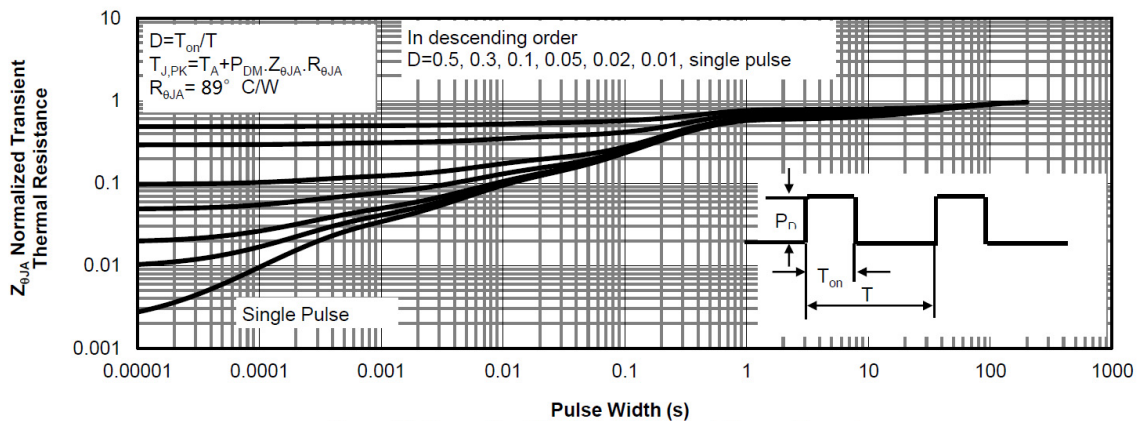
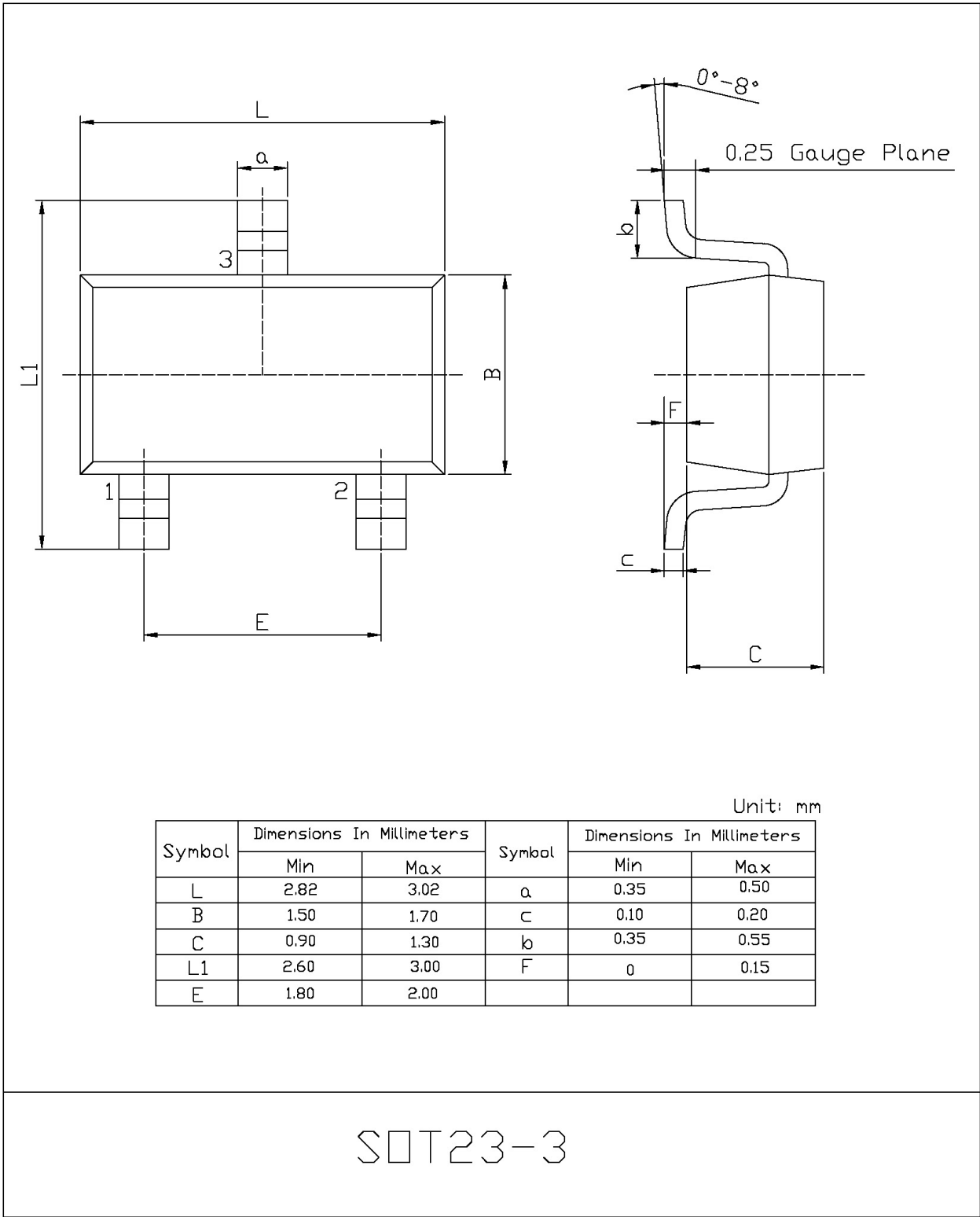


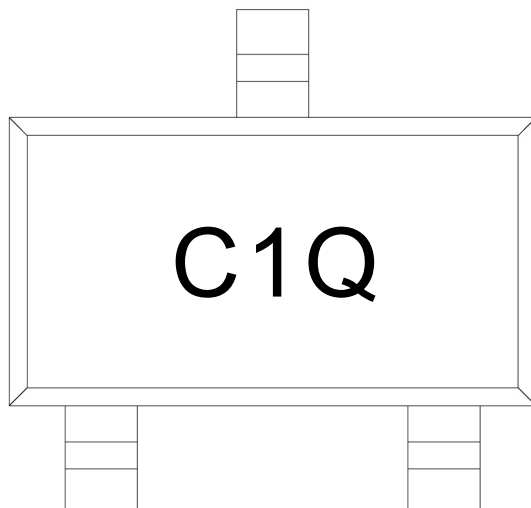
Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions





印章说明 / Marking Instructions



说明：

Q： 为汽车无卤产品标识

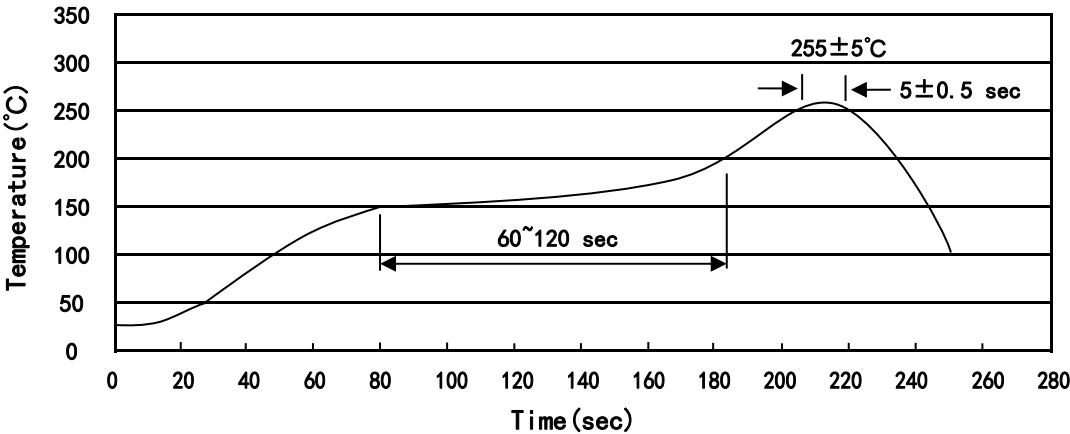
C1： 为型号代码

Note:

Q: Automobile halogen-free product Code

C1: 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 ~ 200℃，时间 60 ~ 120sec;
 - 2、峰值温度 255±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:150~200℃, Time:60~120sec.
 - 2.Peak Temp.:255±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