描述 / Descriptions

SOT23-3 塑封封装 P 道 MOS 场效应管。
P- CHANNEL MOSFET in a SOT23-3 Plastic Package.

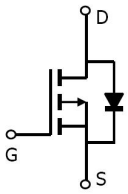
特征 / Features

V_{DS} (V) = -12V
I_D = -6 A (V_{GS} = ±10V)
无卤产品。HF Product.

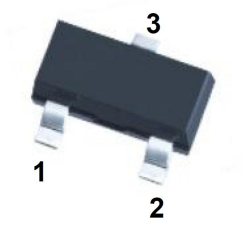
用途 / Applications

用于电源管理，便携式设备和电池供电系统。
Power Management in Notebook computer, Portable Equipment and Battery powered systems.

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.

Marking	A3H

极限参数 / Absolute Maximum Ratings(Ta=25℃)

参数 Parameter		符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage		V_{DSS}	-12	V
Gate-Source Voltage		V_{GSS}	±10	V
Continuous Drain Current		I_D (T_a=25°C)	-6	A
Continuous Drain Current		I_D (T_a=70°C)	-5.2	A
Pulsed Drain Current		I_{DM}	-20	A
Avalanche Current		I_{AS}	15.1	A
Avalanche energy L=0.5mH		E_{AS}	239.4	mJ
Power Dissipation for Single Operation		P_D (T_a=25℃)	1.7	W
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 ~ 150	℃
Maximum Junction-to-Ambient	t≤5s	$R_{\theta JA}$	130	℃/W
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	73.5	

电性能参数 / Electrical Characteristics(Ta=25℃)

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}	I_D=-250μA V_{GS}=0V	-12	-17		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-12V V_{GS}=0V			-1.0	μA
		V_{DS}=-9.6V V_{GS}=0V T_J=55°C			-5.0	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V V_{GS}=±10V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_D=-250μA	-0.4	-0.7	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V I_D=-10A		13	14	mΩ
		V_{GS}=-4.5V I_D=-8A		15	16	
		V_{GS}=-2.5V I_D=-5A		19	21	
Diode Forward Voltage	V_{SD}	I_S=-1A V_{GS}=0V		-0.74	-1.0	V
Gate Resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		6.7		Ω
Input Capacitance	C_{iss}	V_{DS}=-15V V_{GS}=0V f=1.0MHz		2110		pF
Output Capacitance	C_{oss}			550		
Reverse Transfer Capacitance	C_{rss}			385		
Total Gate Charge	Q_g	V_{GS}=-4.5V V_{DS}=-6V I_D=-10A		12.7		nC
Gate-Source Charge	Q_{gs}			1.7		
Gate-Drain Charge	Q_{gd}			3.4		
Turn-on Delay Time	$t_{d(ON)}$	V_{GS}=-4.5V V_{DS}=-6V R_L=0.67Ω R_{GEN}=3Ω		11		ns
Turn-on Rise Time	t_r			25		
Turn-off Delay Time	$t_{d(OFF)}$			70		
Turn-off Fall Time	t_f			41.5		

电参数曲线图 / Electrical Characteristic Curve

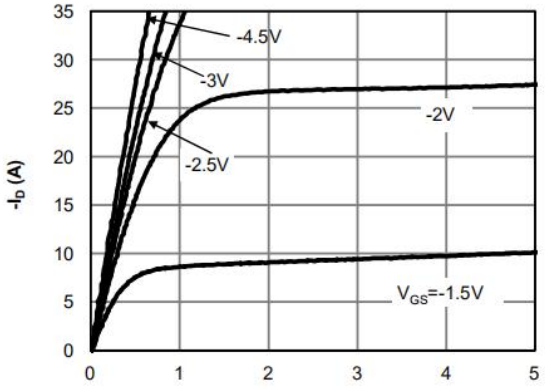


Fig 1: On-Region Characteristics

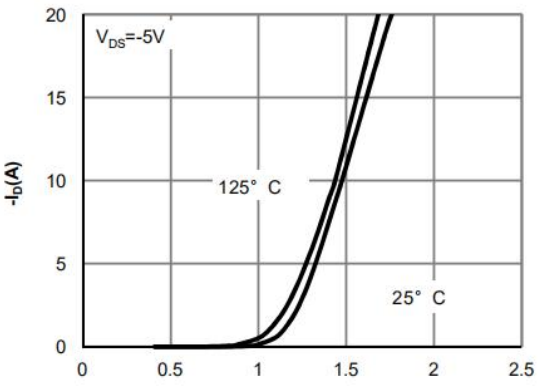


Figure 2: Transfer Characteristics

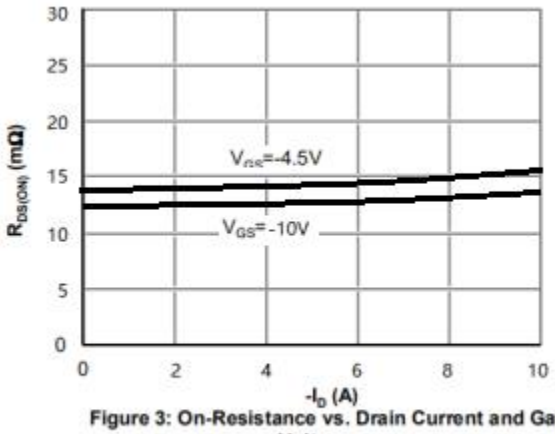


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

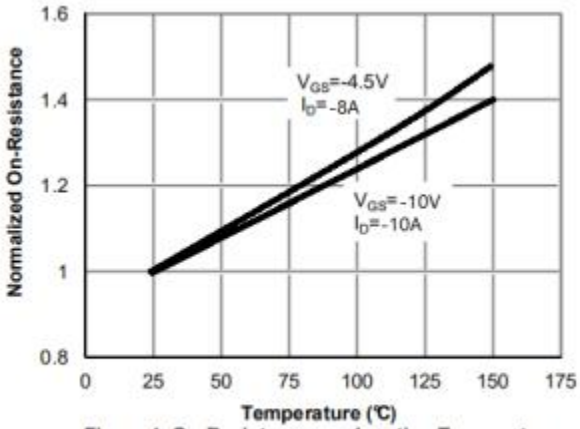


Figure 4: On-Resistance vs. Junction Temperature

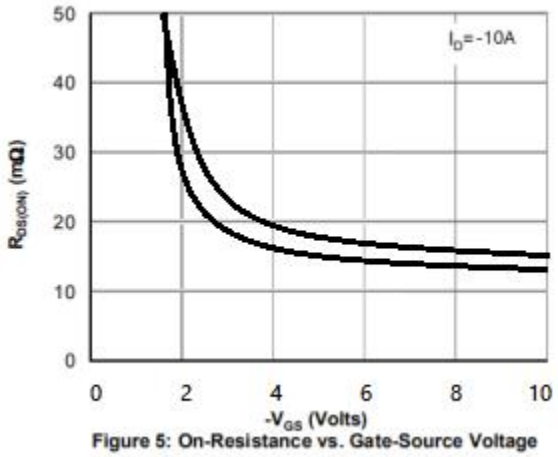


Figure 5: On-Resistance vs. Gate-Source Voltage

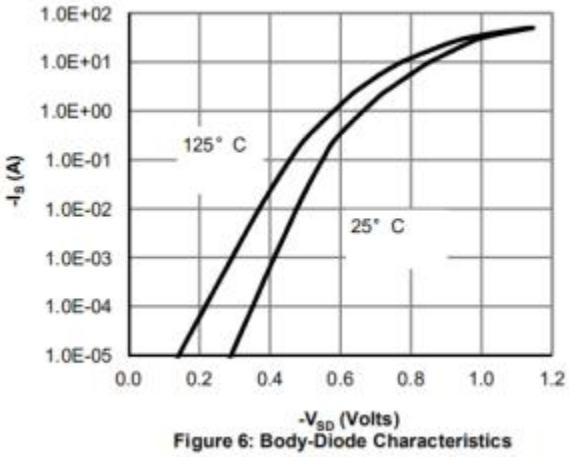


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

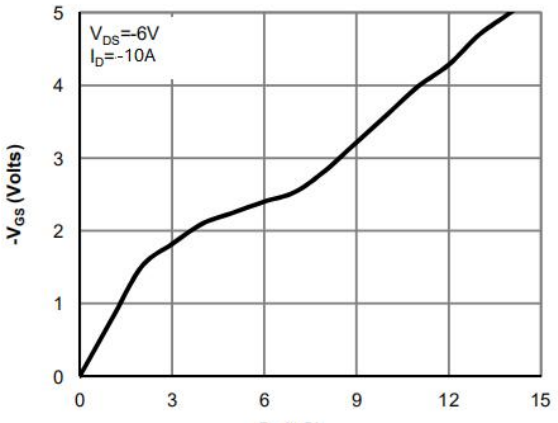


Figure 7: Gate-Charge Characteristics

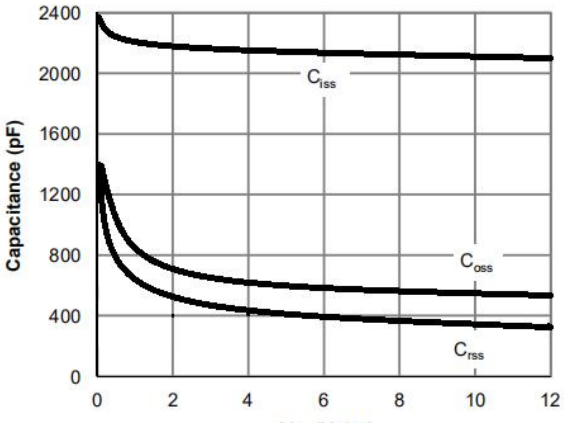


Figure 8: Capacitance Characteristics

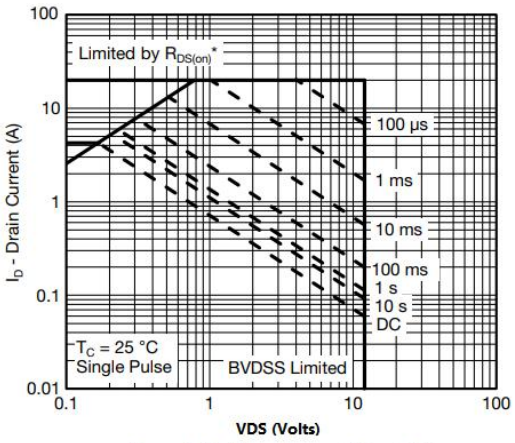


Figure 9: Maximum Forward Biased Safe Operating Area

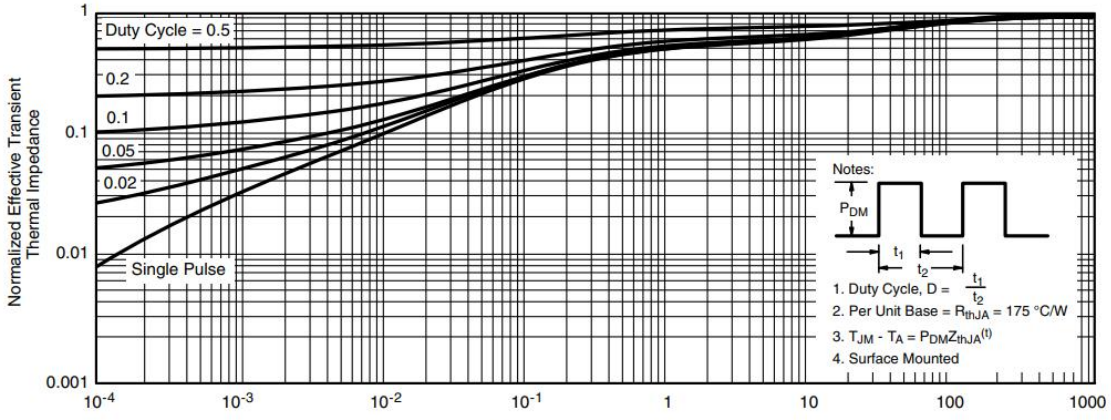
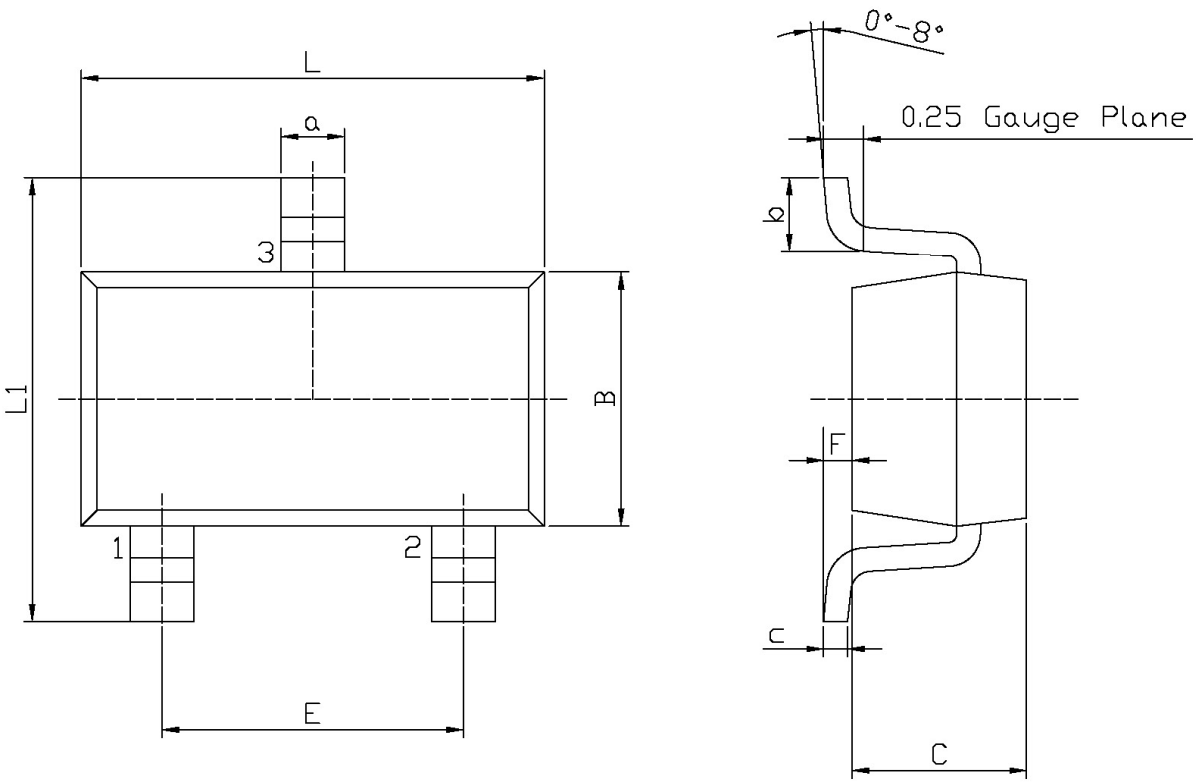


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

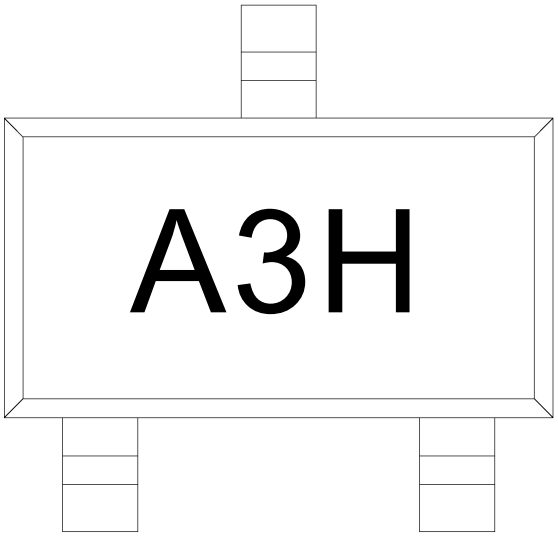


Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	a	0.35	0.50
B	1.50	1.70	c	0.10	0.20
C	0.90	1.30	b	0.35	0.55
L1	2.60	3.00	F	0	0.15
E	1.80	2.00			

SOT23-3

印章说明 / Marking Instructions



说明：

H: 为公司代码

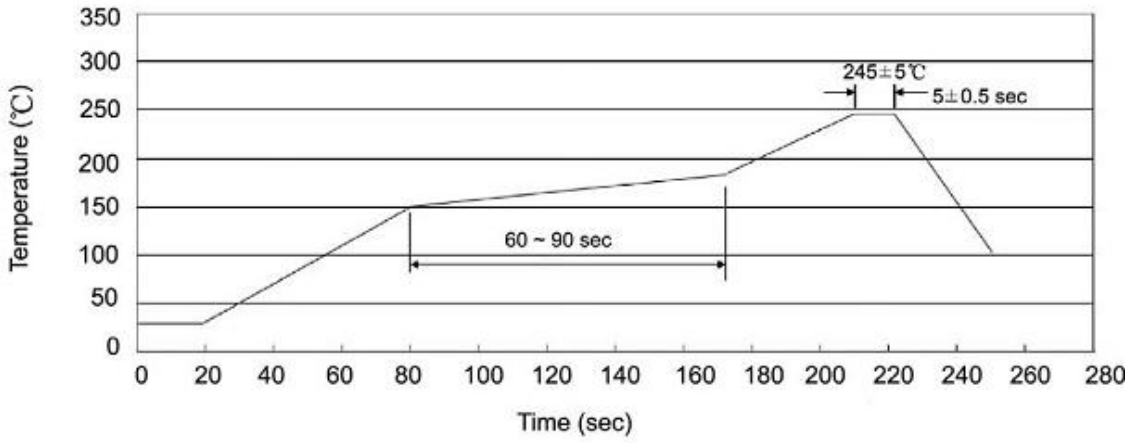
A3: 为型号代码

Note:

H: Company Code.

A3： Product Type

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℃，时间 60～90sec;

2、峰值温度 245±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:150~180℃, Time:60~90sec.

2.Peak Temp.:245±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	445×230×435

使用说明 / Notices