

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

$V_{DS} (V) = -30V$

$I_D = -4.1 A$

$R_{DS(ON)} < 60m\Omega (V_{GS} = -10V)$

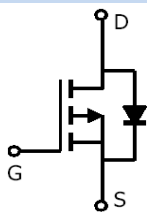
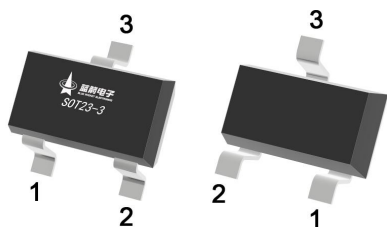
$R_{DS(ON)} < 85m\Omega (V_{GS} = -4.5V)$

无卤产品。HF Product.

用途 / Applications

适用于作负载开关或脉宽调制应用。

This device is suitable for use as a load switch or in PWM 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	A7H
---------	-----

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}	-30	V
Drain Current – Continuous	I_D	-4.1	A
Drain Current- Continuous	$I_D(T_a=70^{\circ}\text{C})$	-3.5	A
Pulsed Drain Current	I_{DM}	-20	A
Gate-Source Voltage	V_{GS}	± 20	V
Total Power Dissipation	P_D	1.4	W
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}\text{C}$
Thermal Resistance-Junction to Ambient ($t \leq 10\text{s}$)	$R_{\theta JA}$	90	$^{\circ}\text{C/W}$
Thermal Resistance-Junction to Lead	$R_{\theta JL}$	80	

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

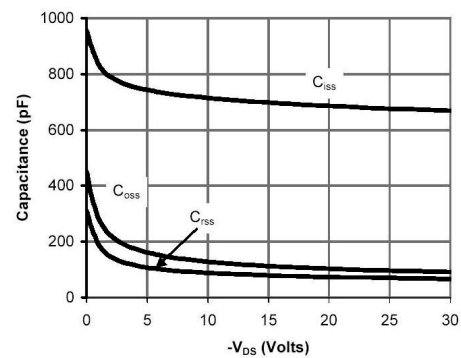
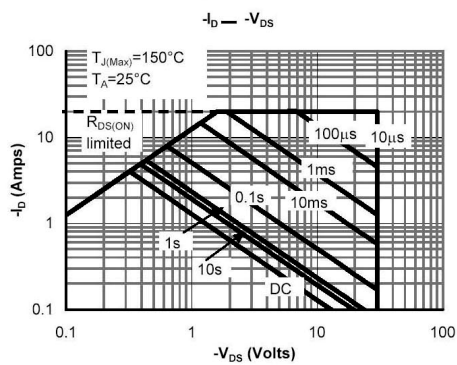
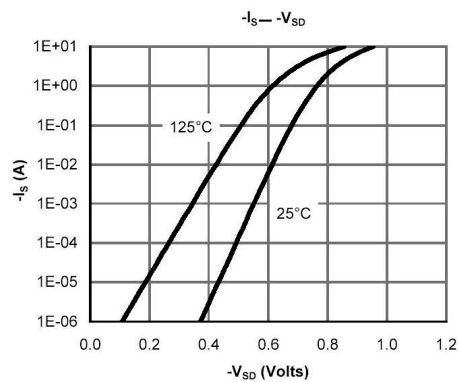
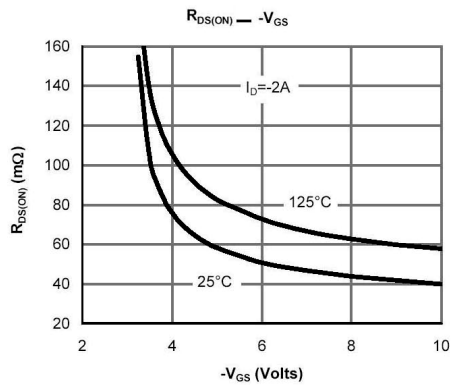
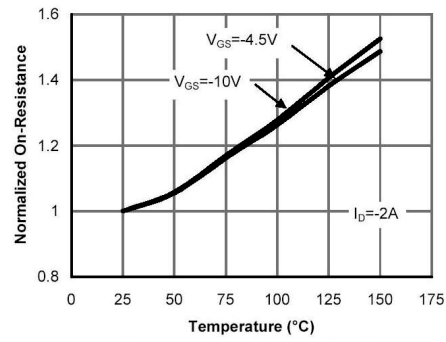
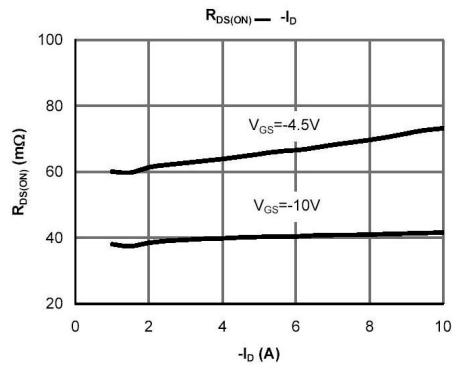
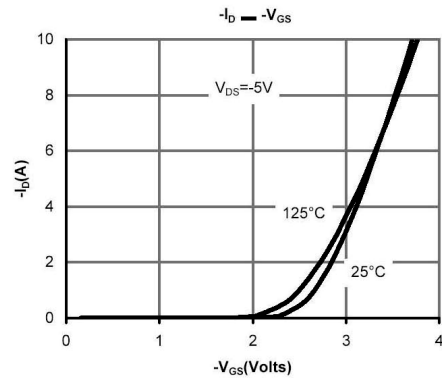
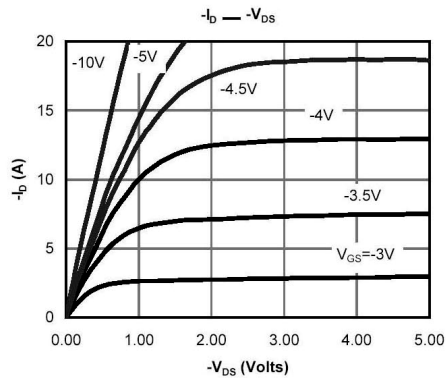
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain–Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{V}$ $I_D=-250\mu\text{A}$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24\text{V}$ $V_{GS}=0\text{V}$			-1	μA
		$V_{DS}=-24\text{V}$ $V_{GS}=0\text{V}$ $T_J=55^{\circ}\text{C}$			-5	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 20\text{V}$ $V_{DS}=0\text{V}$			± 0.1	μA
On–State Drain Current	$I_{D(on)}$	$V_{GS}=-4.5\text{V}$ $V_{DS}=-5\text{V}$	-10			A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu\text{A}$	-1	-1.4	-3	V
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=-10\text{V}$ $I_D=-4.1\text{A}$		54	60	m Ω
	$R_{DS(on)2}$	$V_{GS}=-10\text{V}$ $I_D=-4.1\text{A}$ $T_J=125^{\circ}\text{C}$		57	73	
	$R_{DS(on)3}$	$V_{GS}=-4.5\text{V}$ $I_D=-3\text{A}$		77	85	
Forward Transconductance	g_{FS}	$V_{DS}=-5\text{V}$ $I_D=-4\text{A}$	5.5	8.2		S
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$ $I_S=-1\text{A}$		-0.77	-1	V
Input Capacitance	C_{iss}	$V_{DS}=-15\text{V}$ $V_{GS}=0\text{V}$ $f=1\text{MHz}$		700		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			75		

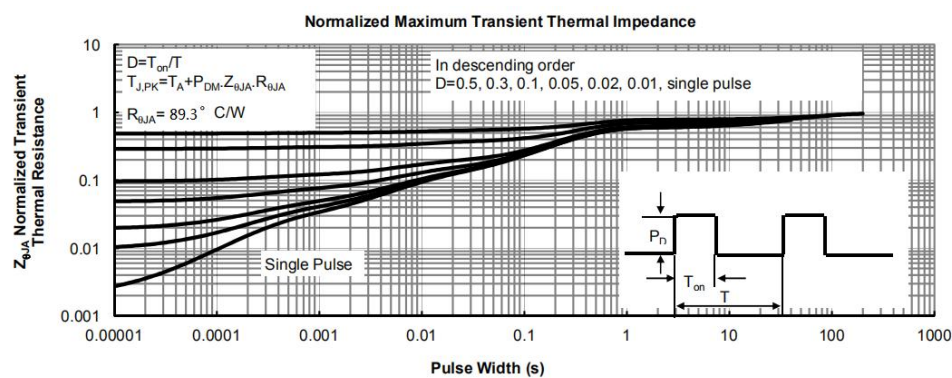
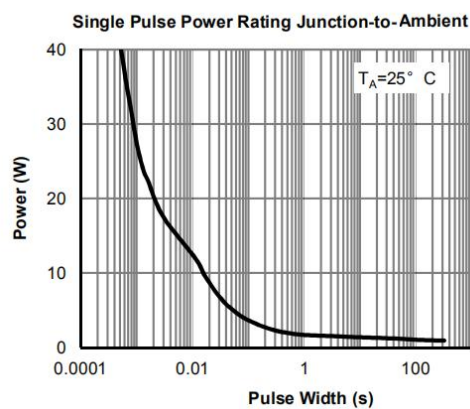
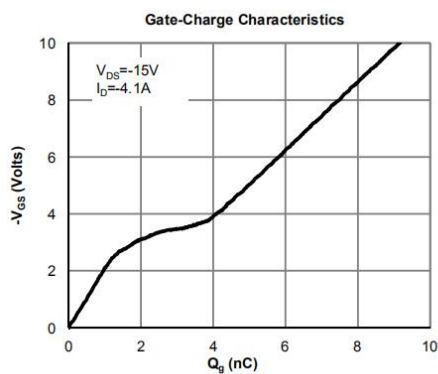


电性能参数 / Electrical Characteristics(Ta=25°C)

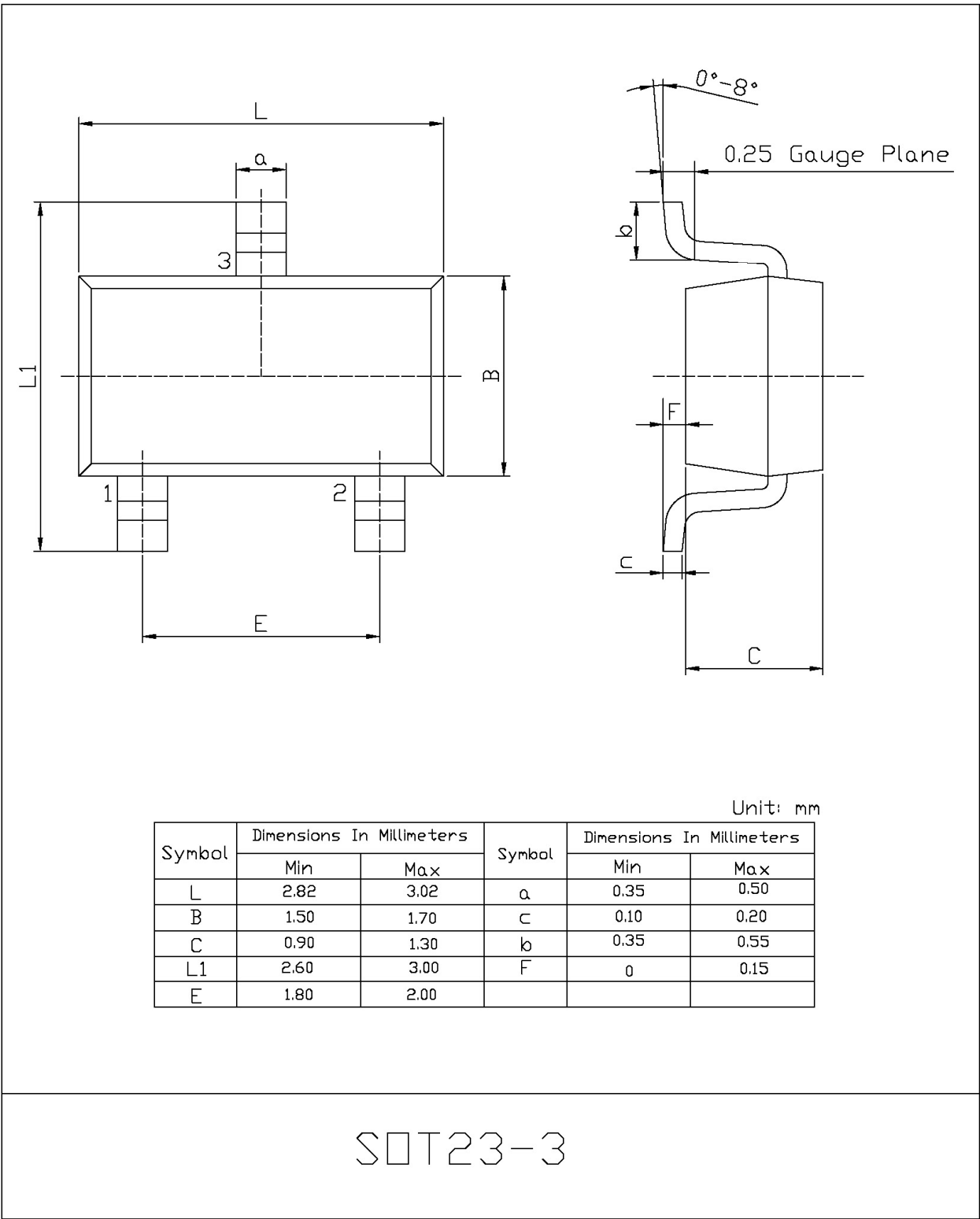
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Total Gate Charge	$Q_g(10V)$	$V_{GS}=-10V, V_{DS}=-15V,$ $I_D=-4.1A$		9		nC
Total Gate Charge	$Q_g(4.5V)$			4.5		
Gate Source Charge	Q_{gs}			1.5		
Gate Drain Charge	Q_{gd}			2.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-10V R_L=3.6\Omega$ $V_{DS}=-15V R_{GEN}=3\Omega$		8.6		ns
Turn-On Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			28.2		
Turn-Off Fall Time	t_f			13.5		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=-4.1A, di/dt=100A/\mu s$		13		ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F=-4.1A, di/dt=100A/\mu s$		5.5		nC

电参数曲线图 / Electrical Characteristic Curve

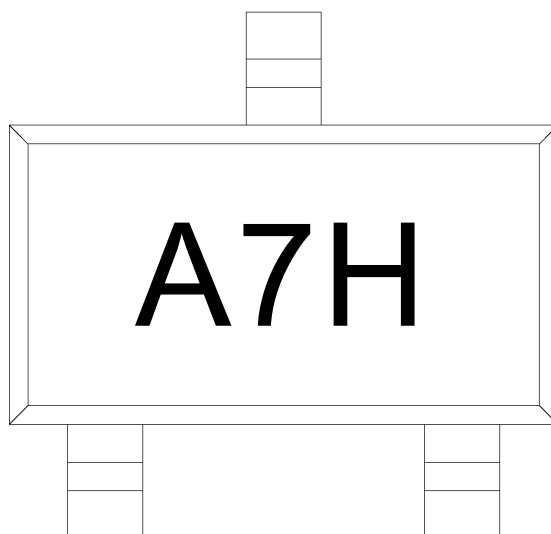



电参数曲线图 / Electrical Characteristic Curve


外形尺寸图 / Package Dimensions



印章说明 / Marking Instructions



说明：

A7： 为型号代码

H： 为公司代码

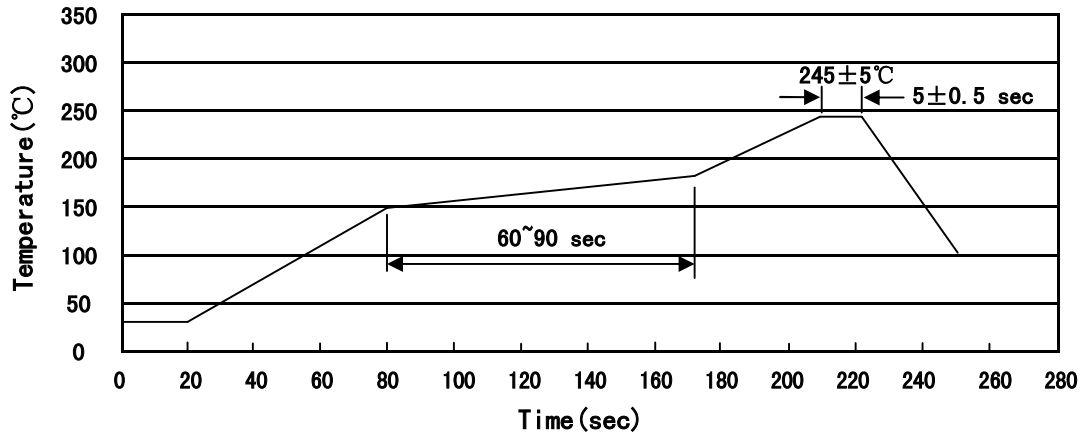
Note:

A7: Product Type

H: Company 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-23-3	3,000	10	30,000	4	120,000	7" ×8	210×205×205	445×230×435

使用说明 / Notices