

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



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MOV



GDT



PLED

Product data sheet

## GENERAL DESCRIPTION

XC6206系列是高纹波抑制率、低功耗、低压差，具有过流和短路保护的CMOS降压型电压稳压器。这些器件具有很低的静态偏置电流（8.0μA Typ.），它们能在输入、输出电压差极小的情况下提供250mA的输出电流，并且仍能保持良好的调整率。由于输入输出间的电压差很小和静态偏置电流很小，这些器件特别适用于希望延长电池寿命的电池供电类产品，如计算机、消费类产品和工业设备等。

## FEATURES

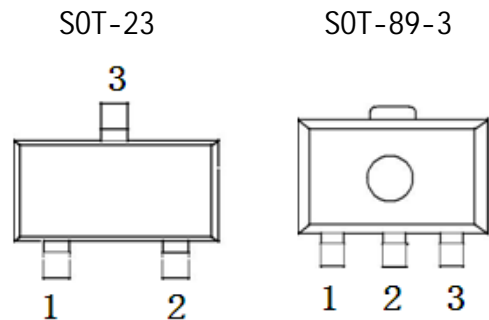
- 高精度输出电压：±2.5%
- 输出电压：1.8V~5.0V(步长0.1V)
- 极低的静态偏置电流(Typ.=8.0μA)
- 低的温度调整系数
- 最高输入电压可达8V
- 带载能力强：当Vin=4.3V且Vout=3.3V时，Iout=250mA
- 可以作为调整器和参考电压来使用
- 输入稳定性好：Typ. 0.03%/V
- 封装形式：SOT89-3、SOT-23

## Application

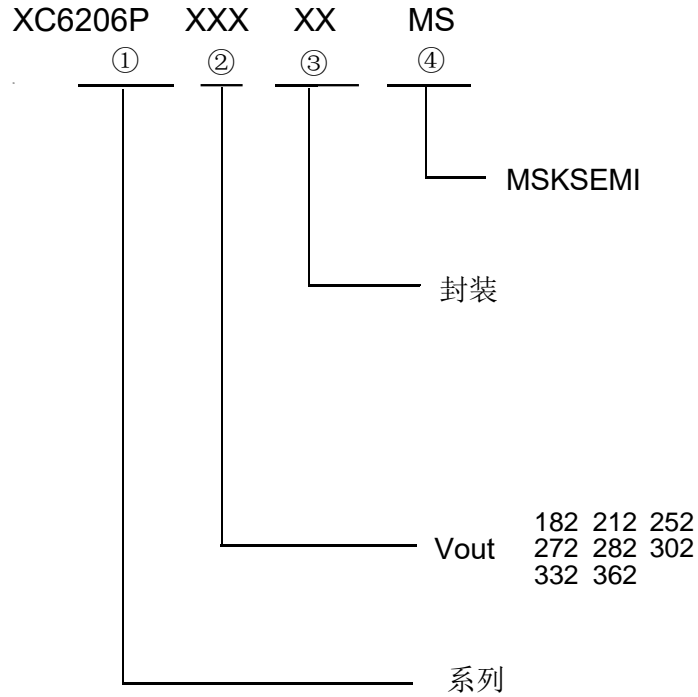
- 电池供电系统
- 无绳电话设备
- 无线控制系统
- 便携/手掌式计算机
- 便携式消费类设备
- 便携式仪器
- 汽车电子设备
- 电压基准源

## PIN CONFIGURATION

管脚序号			管脚定义	功能说明
MR 封装形式	PR 封装形式	P1 封装形式		
SOT-23	SOT89-3	SOT89-3		
1	1	2	VSS	芯片接地端
2	3	1	VOUT	芯片输出端
3	2	3	VIN	启动输入端



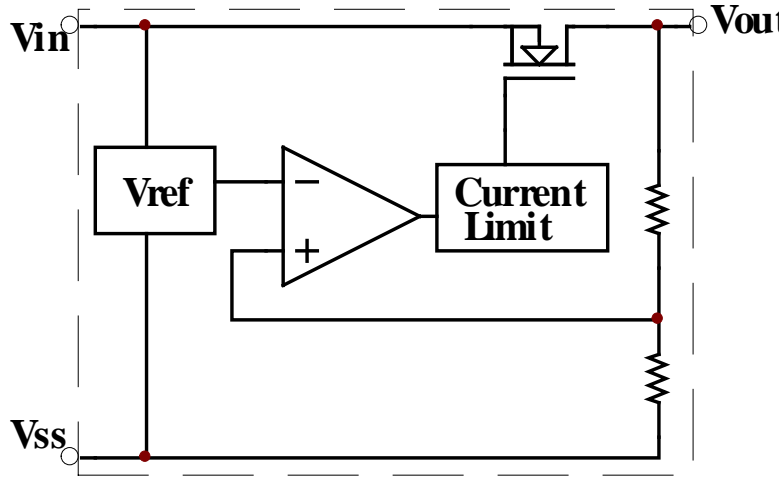
P/N Information



型号选择

① 系列	② 输出电压(V)	③ 封装	④ MS	最高输入电压 (V)	容差
XC6206P	1.8、 2.1、 2.5 2.7、 2.8、 3.0 3.3、 3.6、	PR: SOT-89-3 MR: SOT-23	MSKSEMI	8	±3%

### 功能框图



### 极限参数

项目	符号	参数	极限值	单位
电压	V <sub>in</sub>	输入电压	9	V
	V <sub>out</sub>	输出电压	V <sub>ss</sub> -0.3 ~ V <sub>out</sub> +0.3	V
电流	I <sub>out</sub>	输出电流	500	mA
功耗	PD	SOT23	300	mW
		SOT89-3	500	
温度	T <sub>w</sub>	工作温度	-25~+80	°C
	T <sub>c</sub>	存储温度	-40~+125	°C
	T <sub>h</sub>	焊接温度	260	°C, 10s

**电学特性 (Cin=Cout=10uF,Ta=25°C除特别指定)**

特性	符号	条件	最小值	典型值	最大值	单位
输出电压	$V_{OUT}(E)$	$I_{OUT}=1mA, V_{IN}=V_{OUT}(T)+1V$	$V_{OUT}(T) * 0.98$	$V_{OUT}(T)$	$V_{OUT}(T) * 1.02$	V
最大输出电流	$I_{OUT}(max)$	$V_{IN}=V_{OUT}(T)+1V$	100			mA
跌落压差	$V_{drop}$	$I_{OUT}=50mA$	$1.5V \leq V_{OUT}(T) \leq 2.5V$	200	280	mV
			$2.6V \leq V_{OUT}(T) \leq 3.3V$	160	240	
			$3.4V \leq V_{OUT}(T) \leq 5.5V$	120	200	
静态电流	$I_{SS}$	$V_{IN}=V_{OUT}(T)+1V$		7		$\mu A$
负载稳定度	$\Delta V_{OUT}$	$V_{IN}=V_{OUT}(T)+1V, 1mA \leq I_{OUT} \leq 80mA$		20		mV
输入稳定度	$\Delta V_{OUT}/(\Delta V_{IN} \cdot V_{OUT})$	$I_{OUT}=1mA, V_{OUT}(T)+0.5V \leq V_{IN} \leq 5.5V$		0.1	0.2	%/V
输出电压温度系数	$\Delta V_{OUT}/(\Delta Ta \cdot V_{OUT})$	$V_{IN}=V_{OUT}(T)+1V, I_{OUT}=10mA, -40^\circ C \leq Ta \leq 85^\circ C$		$\pm 100$		ppm/ $^\circ C$
输入电压	$V_{IN}$		1.8	--	8.0	V
纹波抑制比	PSRR	$V_{IN}=[V_{OUT}(T)+1]V + 1V_{p-pAC}, I_{OUT}=10mA, f=1kHz$		40		dB
短路电流	$I_{short}$	$V_{IN}=V_{OUT}(T)+1.5V, V_{OUT}=V_{SS}$		30		mA
过流保护电流	$I_{limit}$	$V_{IN}=V_{OUT}(T)+1.5V$		380		mA

注：

- 1、 $V_{OUT}(T)$ ：规定的输出电压。
- 2、 $V_{OUT}(E)$ ：有效输出电压（即当  $I_{OUT}$  保持一定数值， $V_{IN}=(V_{OUT}(T)+1.0V)$  时的输出电压）。
- 3、 $I_{OUT}(max)$ ： $V_{IN}=V_{OUT}(T)+1V$ ，缓慢增加输出电流，当输出电压  $\leq V_{OUT}(E) * 95\%$  时的电流值。
- 4、 $V_{drop}=V_{IN1}-V_{OUT}(E)_{s}$ ： $V_{IN1}$ =逐渐减小输入电压，当输出电压降为  $V_{OUT}(E)_{1}$  的 98% 时的输入电压。  
 $V_{OUT}(E)_{s}=V_{OUT}(E) * 98\%$   
 $V_{OUT}(E)_{1}$ =当  $V_{IN}=V_{OUT}(T)+1V, I_{out}$ =某一数值时的输出电压值。

**测试电路**

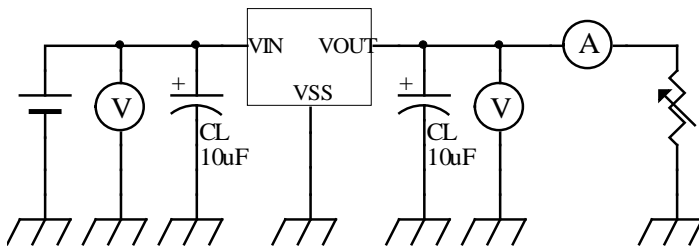


图 1

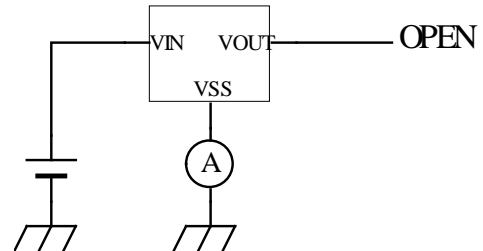
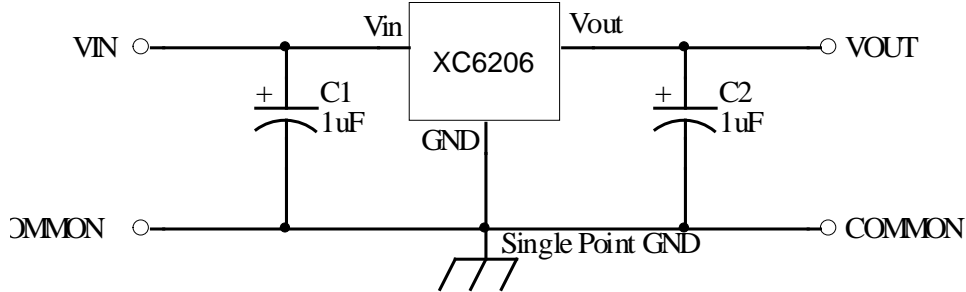


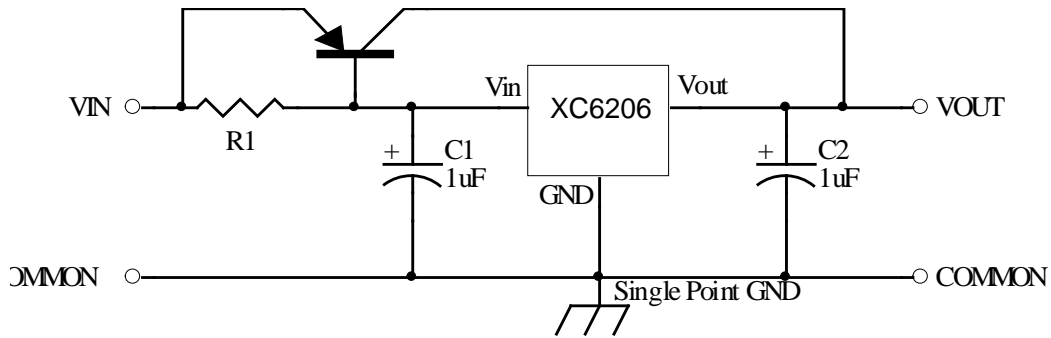
图 2

## 应用电路

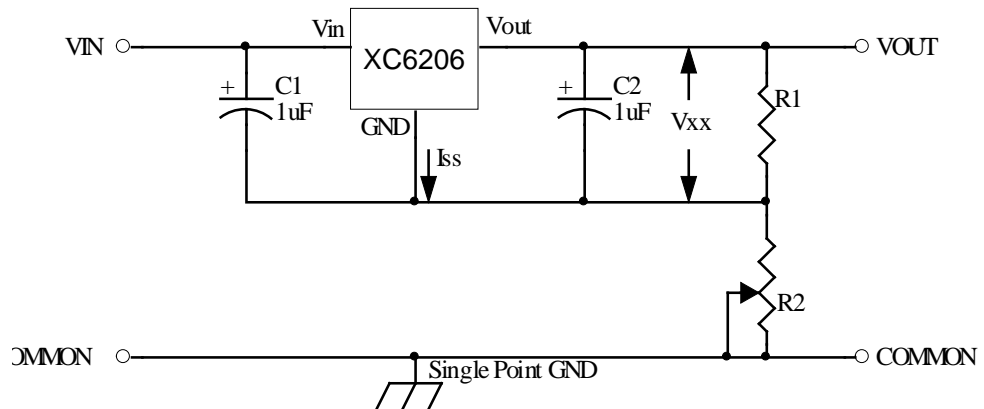
### 1、基本电路



### 2、大输出电流正电压型电压调整器

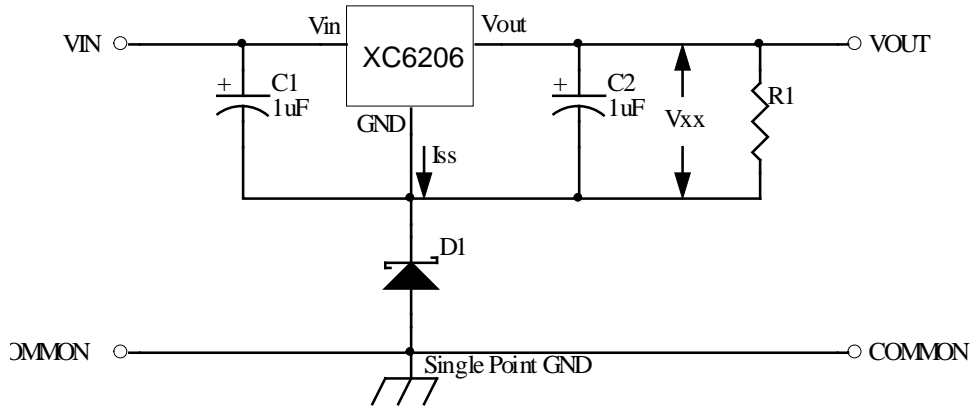


### 3、提高输出电压值电路（1）



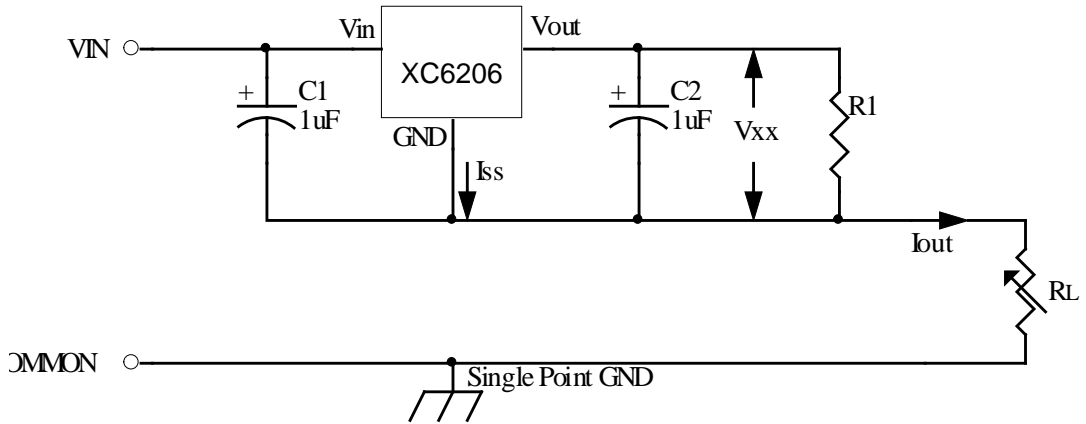
$$V_{out} = V_{xx}(1 + R_2/R_1) + I_{ss}R_2$$

4、提高输出电压电路（2）



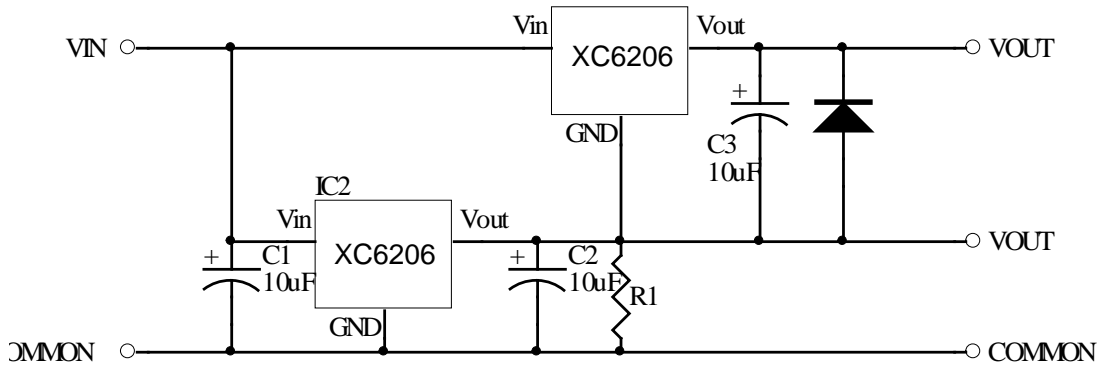
$$V_{out} = V_{xx} + V_{D1}$$

5、恒流调整器



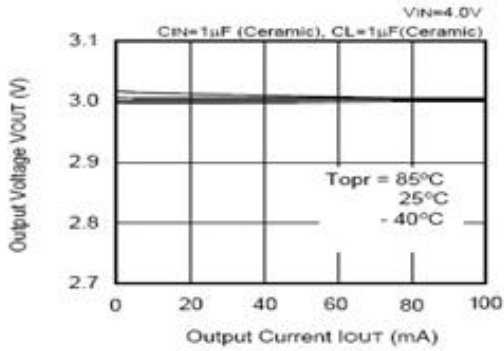
$$I_{out} = V_{xx} / R_A + I_{ss}$$

6、双输出

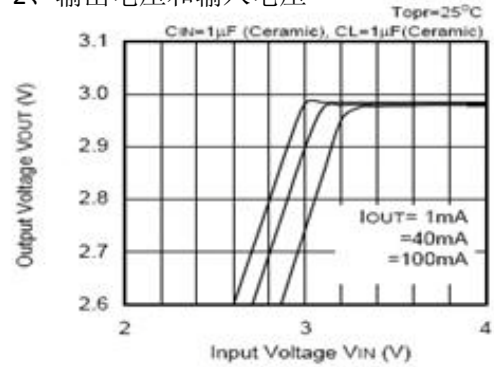


**特性曲线图**

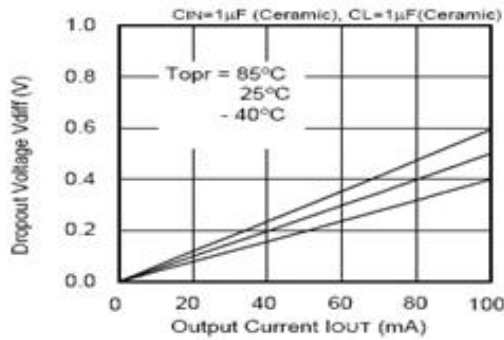
1、输出电压--输出电流（负载电流增加时）



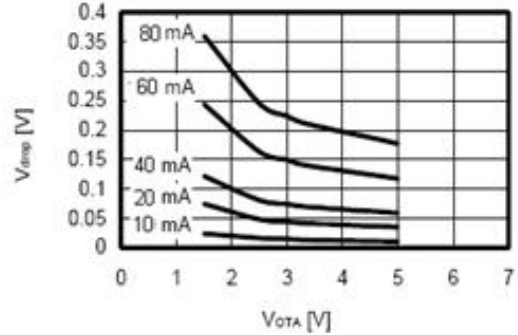
2、输出电压和输入电压



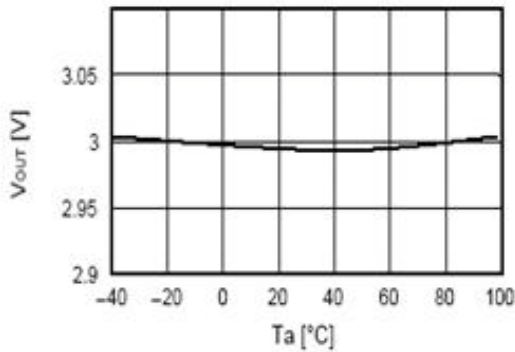
3、Dropout 电压和输出电流



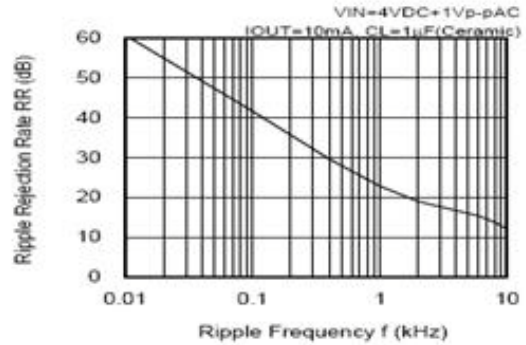
4、Dropout 电压和输出电压



5、输出电压和温度

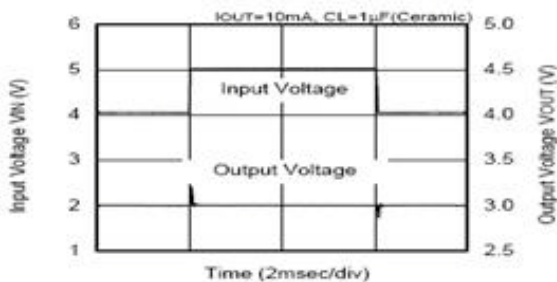


6、纹波抑制

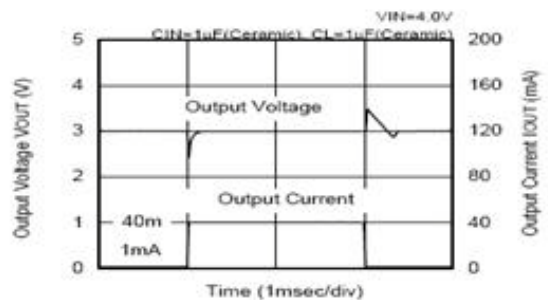


7、瞬态响应

输入过渡响应特性

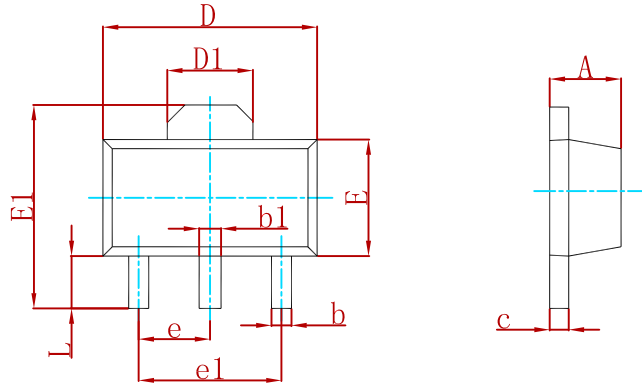


负载过渡输入响应特性



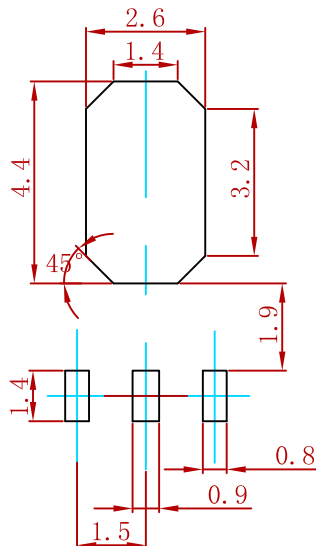


**PACKAGE MECHANICAL DATA**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

**Suggested Pad Layout**

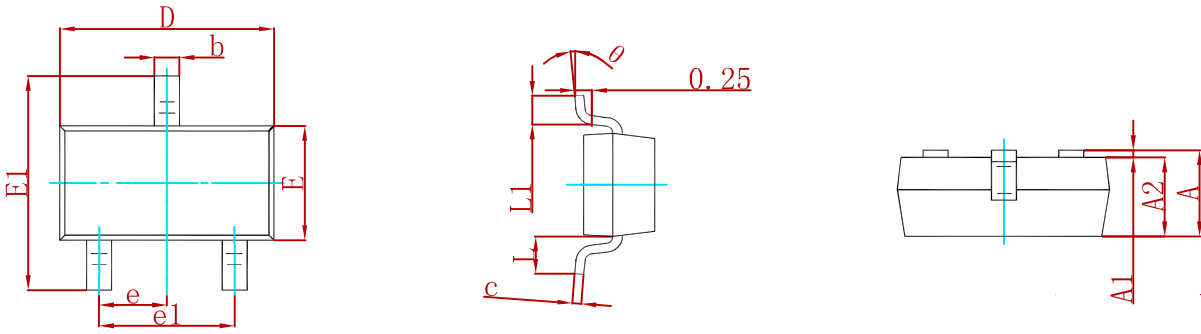


Note:  
 1. Controlling dimension: in millimeters.  
 2. General tolerance:  $\pm 0.05\text{mm}$ .  
 3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

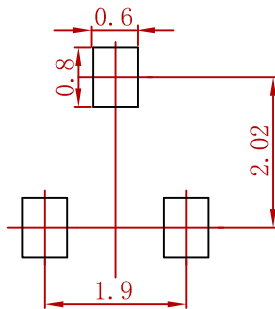
P/N	PKG	QTY
XC6206	SOT-89-3	1000

**PACKAGE MECHANICAL DATA**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

**Suggested Pad Layout**



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance: ± 0.05mm.
  3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
XC6206	SOT-23	3000

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[NCV78M05ABDTRKG](#) [LV5680P-E](#) [L79M05T-E](#) [L78LR05D-MA-E](#) [NCV317MBTG](#) [NTE7227](#) [MP2018GZD-33-P](#) [MP2018GZD-5-P](#)  
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