

描述 / Descriptions

SOT23-6 塑封封装 锂电池保护 IC。Single li-Ion Battery Protection in a SOT23-6 Plastic Package.

特征 / Features

超小型 SOT23-6 封装，只需外接一个电容，过充电流保护功能。两步过流检测功能：过度放电电流和负载短路电流。充电时高精度电压检测功能，低电流消耗，CRE 兼容，无铅产品。

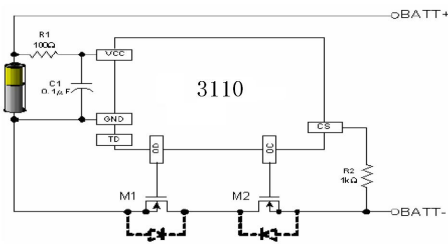
Ultra-small SOT23-6 Package, Only One External Capacitor, Overcharge Current Protection, Two-step Over current Detection -Over discharge Current/ -Load Short Circuiting,Charger Detection Function, High-accuracy Voltage Detection, Low Current Consumption,CRE Compliant and Lead (Pb) Free.

用途 / Applications

适用于一个锂离子电池，锂聚合物电池的内置方案。

One-Cell Lithium-ion Battery Pack , Lithium-Polymer Battery Pack.

内部等效电路 / 应用电路 Equivalentent Circuit or Application Circuit



引脚排列 / Pinning



PIN DESCRIPTION

PIN NO.	PIN Name	PIN DESCRIPTION
1	OD	MOSFET gate connection pin for discharge control
2	CS	Input pin for current sense, charger detect
3	OC	MOSFET gate connection pin for charge control
4	TD	Test pin for reduce delay time
5	VDD	Power supply, through a resistor (R1)
6	GND	Ground pin

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	数值 Rating	单位 Unit
Input voltage between VCC and GND *	-0.3 to 5	V
OC output pin voltage	V _{CC} -24 to V _{CC} +0.3	V
OD output pin voltage	G _{ND} -0.3 to V _{CC} +0.3	V
CS input pin voltage	V _{CC} -24 to V _{CC} +0.3	V
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range	-40 to +125	°C

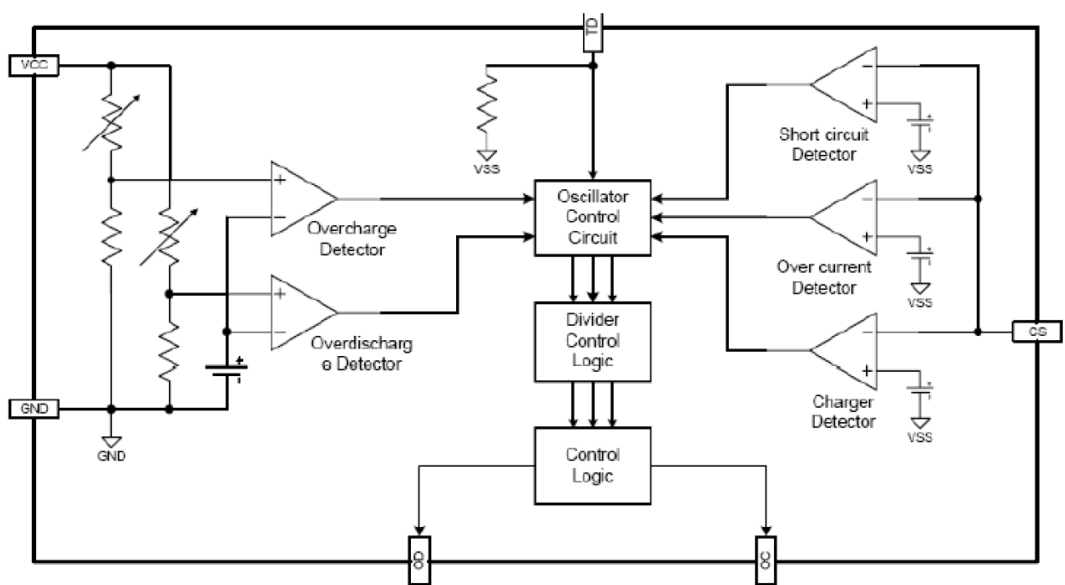
Note:

3110 contains a circuit that will protect it from static discharge; but please take special care that no excessive static electricity or voltage which exceeds the limit of the protection circuit will be applied to it.

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

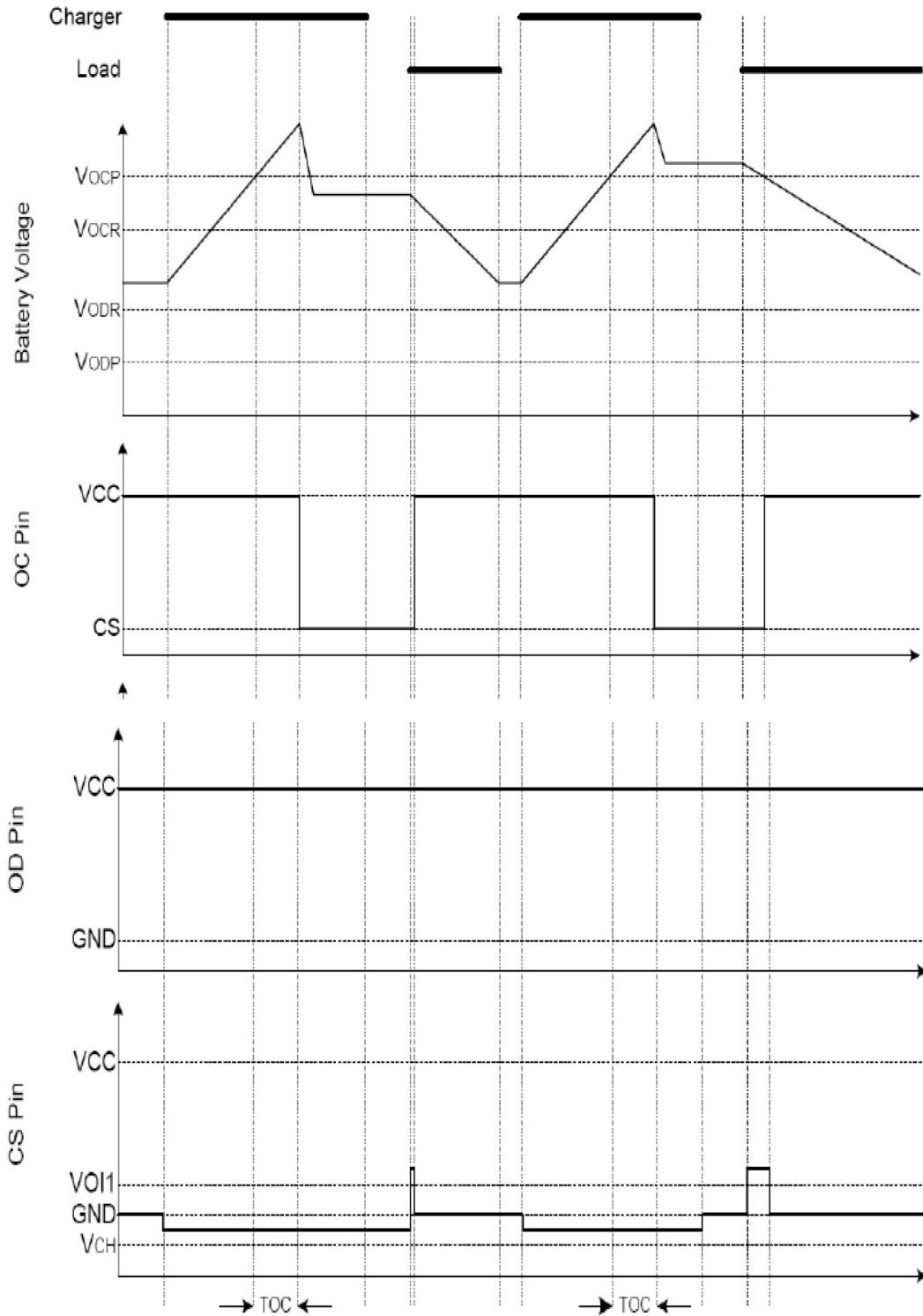
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Overcharge Detection Voltage	V _{OCP}	Detect rising edge of supply voltage	4.35	4.40	4.45	V
Overcharge Release Voltage	V _{OCR}		4.15	4.20	4.25	V
Over-discharge Detection voltage	V _{ODP}		2.30	2.4	2.5	V
Over-discharge Release Voltage	V _{ODR}		2.90	3.0	3.1	V
Over-current Protection Voltage	V _{OIP}		120	150	180	mV
Short Current Protection Voltage	V _{SIP}	VCC=3.6V	1.0	1.35	1.7	V
Charger Detection Threshold Voltage	V _{CHA}		-1.2	-0.7	-0.2	V
Over-discharge Current Detection	I _{DET2}	VDD=3.0V	2.0	3.25	4.5	A
Load Short-Circuiting Detection	I _{short}	VDD=3.6V		15		A
Supply current	I _Q	VDD=3.9V		3.0	6.0	μA
Standby current	I _{standby}	VDD=2.0V			0.1	μA
Output delay of over charge	T _{OC}	VDD=3.6V to 4.4V	80	120	200	mS
Output delay of over-discharge	T _{OD}	VDD=3.6V to 2.0V	40	70	100	mS
Over-current Delay Time (1)	T _{O11}	VDD=3.6V		10	20	mS
Over-current Delay Time (2)	T _{O12}	VDD=3.6V			500	μS

原理框图 / Functional Block Diagram



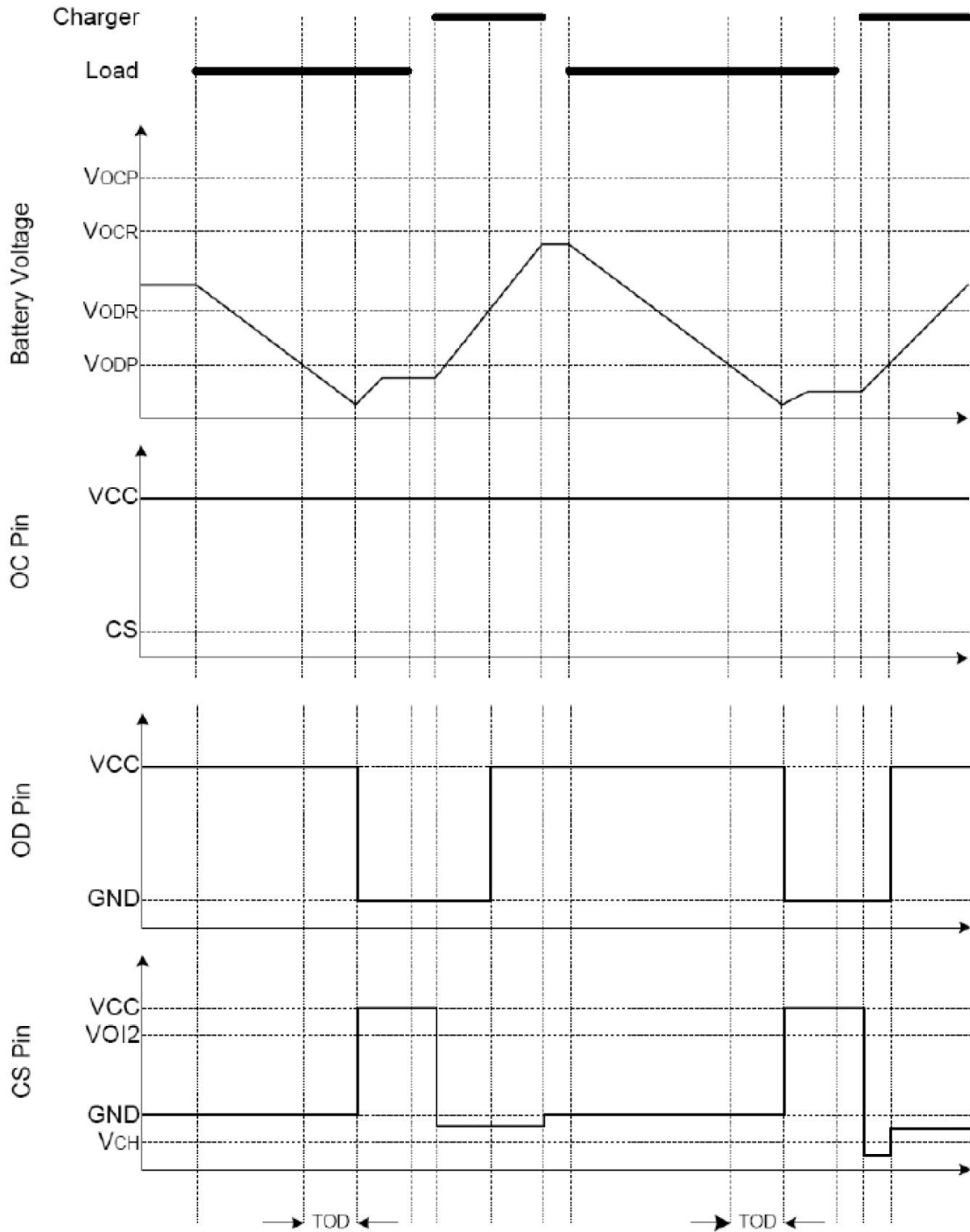
脉冲波形图/ Timing Chart

1. Overcharge Condition 、 Load Discharging 、 Normal Condition

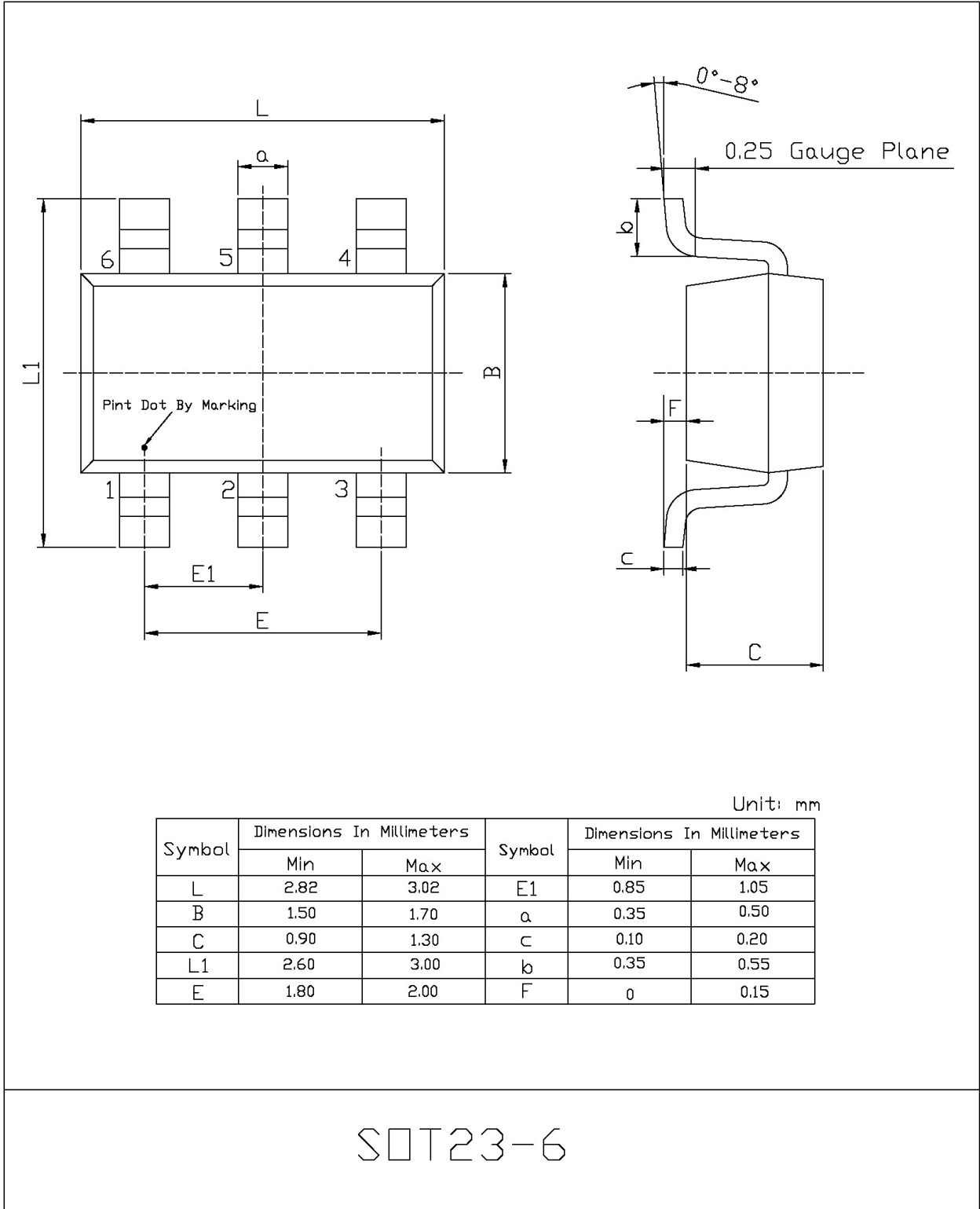


脉冲波形图/ Timing Chart

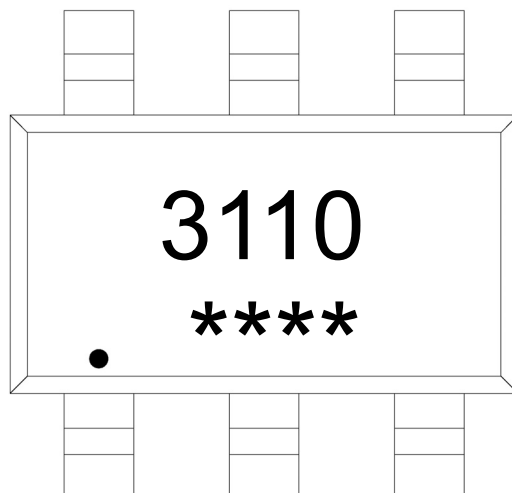
2. Overdischarge Condition 、 Charging by a Charger 、 Normal Condition



外形尺寸图 / Package Dimensions



印章说明 / Marking Instructions



说明：

3110：为型号代码

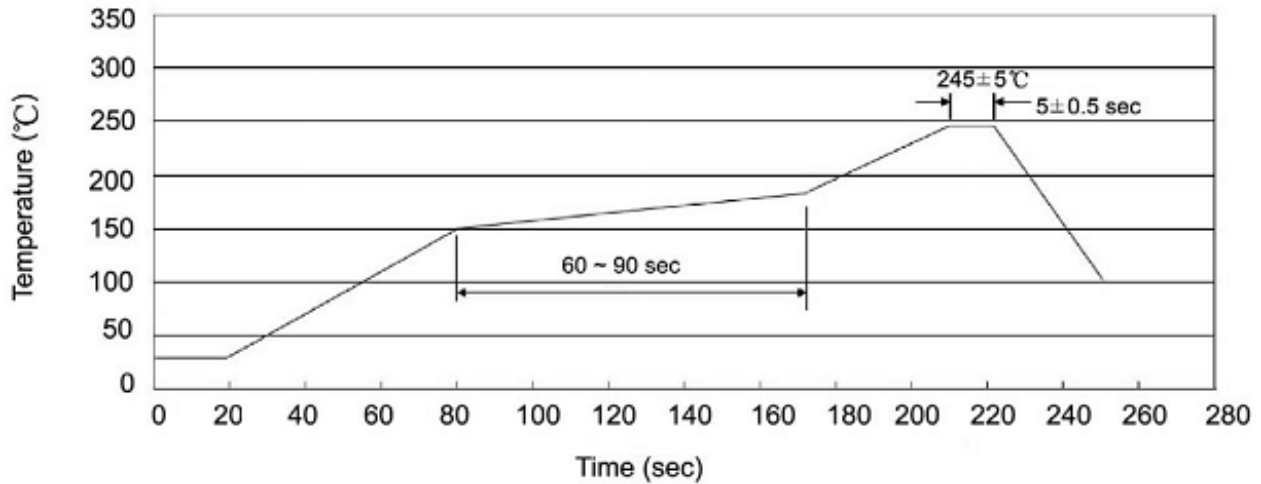
****：为生产批号代码，随生产批号变化。

Note:

3110: Product Type Code.

****: Lot No. Code, code change with Lot No.

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
SOT23-5/6	3,000	10	30,000	4	120,000	7" x8	210×205×205	445×230×435

使用说明 / Notices