

承 認 書

SPECIFICATION FOR APPROVAL

CUSTOMER'S APPROVAL CHOP 客 戶 確 認 蓋 章 條件附確認: Approval's condition: _____ 確認日期 Approved date: _____

確認這制品, 請簽回一套給我司并蓋上貴司的正式印章
KINDLY RETURN A SET WITH YOUR COMPANY'S OFFICIAL
STAMP ON APPROVAL OF THIS ITEM

客 戶 名 稱 : CUSTOMER'S NAME :	_____
客 戶 機 型 : CUSTOMER'S MODEL NO. :	_____
客戶型號 : CUSTOMER'S PART NO. :	_____
類 別 : DESCRIPTION :	Low Capacitance TVS Diode Array
晶 訊 編 號 : Semitel'S MODEL NO. :	SESLC5VT23S-6
版本 : VERSION :	A
日期 : DATE :	2016-8-24

承認書附件: Attachments:

- ☐ 制品規格書
Product specification
- ☐ 樣品/Sample Qty.:
- ☐ 測試參數
Test data

Prepared By	Checked By	Approved By
Hebe 2016-8-24	Liang 2016-8-24	Alan 2016-8-24

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Semitel International Ltd.	12F, No.183, Sec.1, Datong Rd., Xizhi Dist., New Taipei City 22145, Taiwan

Features:

- * ESD protection for high-speed data lines to IEC 61000-4-2(ESD)±15kV(air),±8kV(contact) IEC 6100-4-5(Lightning)12A(8/20μS) IEC 6100-4-4 (EFT) 40A (5/50us)
- * Array of surge rated diodes with internal TVS Diode
- * Small package saves board space
- * Protects four I/O lines
- * Low capacitance: 0.8PF typical
- * Low clamping voltage
- * Low operating voltage:5.0V
- * Solid-state silicon-avalanche technology

Applications

- * USB2.0 Power and Data Line Protection
- * Digital Visual Interfaces (DVI)
- * 10/100/1000M Ethernet Interfaces
- * Desktops, Servers and Notebooks
- * SIM Ports
- * Monitors and Flat Panel Displays
- * Video Graphics Cards

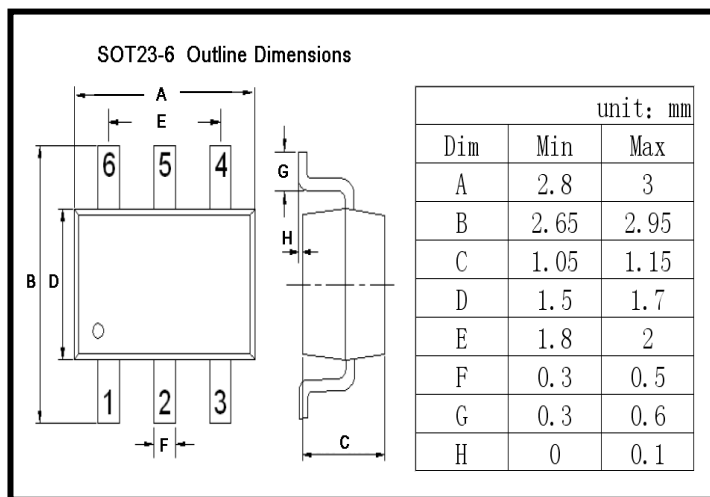
Description

SESLC5VT23S-6 is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 5pF only, SESLC5VT23S-6 is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 (±15kV air, ±8kV contact discharge), IEC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc. SESLC5VT23S-6 uses small SOT23-6L package. Each SESLC5VT23S-6 device can protect four high-speed data lines. The combined features of low capacitance, small size and high ESD robustness make SESLC5VT23S-6 ideal for high-speed data ports and high-frequency lines (e.g., USB2.0) applications. The low clamping voltage of the SESLC5VT23S-6 guarantees a minimum stress on the protected IC.

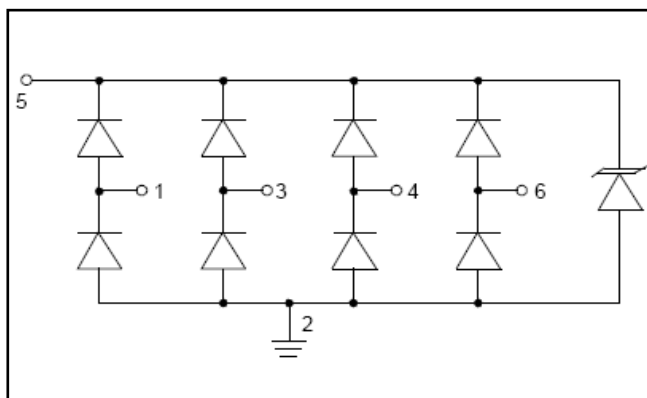
晶訊編號: SEMTEL'S MODEL NO. :	SESLC5VT23S-6	客戶機型: CUSTOMER'S MODEL NO.:	
版本/VERSION :	A	客戶型號: CUSTOMER'S PART NO. :	
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Mechanical Characteristics

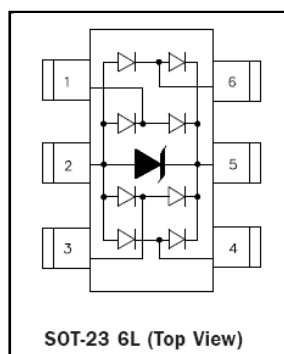
- * SOT23-6L package
- * Marking: Part number, Date
- * Packaging: Tape and Reel



Circuit Diagram



Pin Configuration



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Absolute Maximum Rating

Rating	Symbol	Value	Unit
Peak Pulse Current ($t_p = 8/20\mu s$)	I_{PP}	4	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	15	kV
ESD per IEC 61000-4-2 (Contact)		8	
Lead Soldering Temperature	T_L	260 (10 sec.)	$^{\circ}C$
Operating Temperature	T_J	-25 to +125	$^{\circ}C$
Storage Temperature	T_{STG}	-25 to +125	$^{\circ}C$

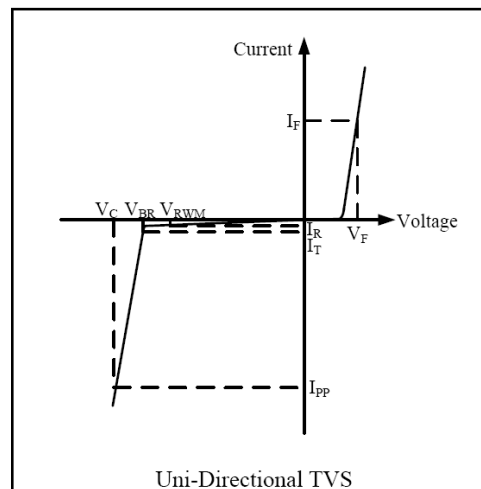
Electrical Characteristics

Characteristic	Symbol	Conditions	Min	Typical	Max	Unit
Reverse Stand-Off Voltage	V_{RWM}	Pin 5 to 2			5	V
Reverse Breakdown Voltage	V_{BR}	$I_t=1mA$ Pin 5 to 2	6			V
Reverse Leakage Current	I_R	$V_{RWM}=5V$, $T=25^{\circ}C$ Pin 5 to 2			1	μA
Clamping Voltage	V_C	$I_{PP}=4A$, $t_p=8/20\mu s$ Any I/O pin to Ground		15		V
Junction Cap	C_j	$V_R=0V$, $f=1MHz$ Any I/O pin to Ground		0.8		PF
		$V_R=0V$, $f=1MHz$ Between I/O pin		0.4		PF

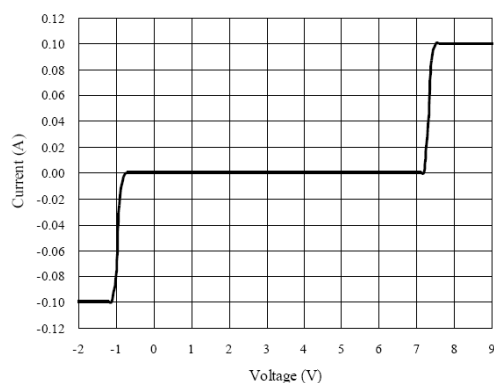
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Electrical Characteristics (T = 25°C)

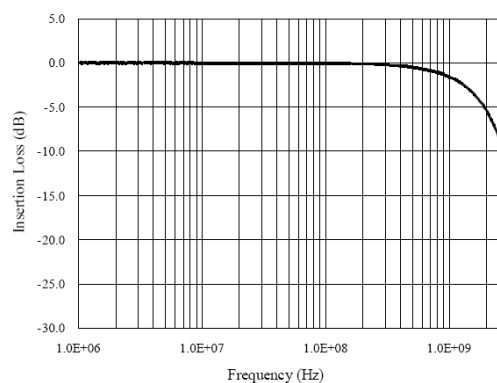
Symbol	Parameter
V_{RWM}	Nominal Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Reverse Breakdown Voltage @ I_T
I_T	Test Current for Reverse Breakdown
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Maximum Peak Pulse Current
C_{ESD}	Parasitic Capacitance
V_R	Reverse Voltage
f	Small Signal Frequency
I_F	Forward Current
V_F	Forward Voltage @ I_F



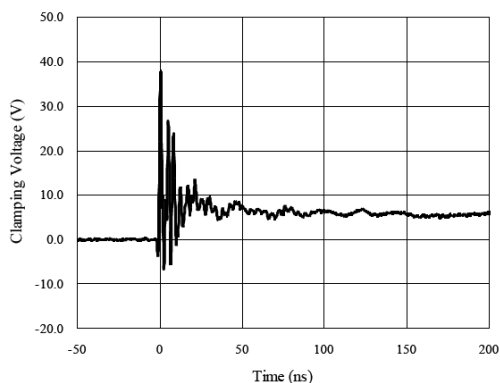
Voltage Sweeping of I/O to GND



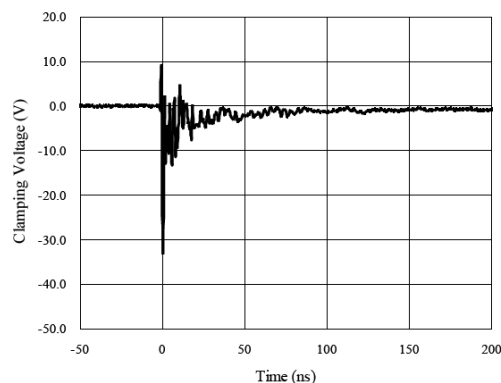
Insertion Loss S21 of I/O to GND



ESD Clamping of I/O to GND (+8kV Contact per IEC 61000-4-2)



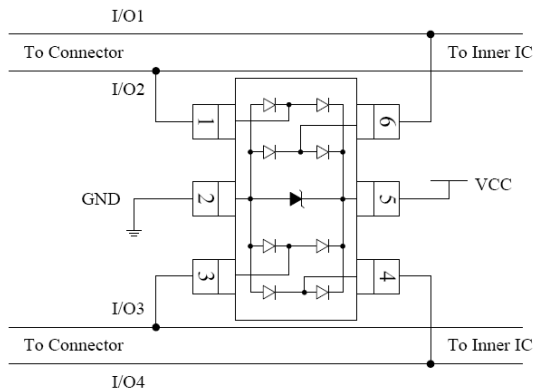
ESD Clamping of I/O to GND (-8kV Contact per IEC 61000-4-2)



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Application Information Pin Connection in PCB

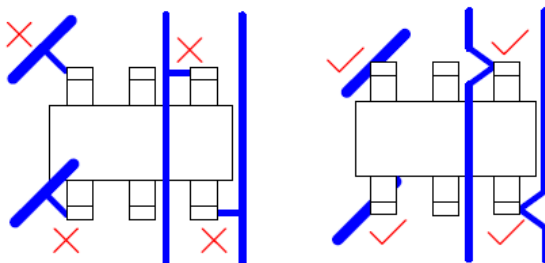
SESLC5VT23S-6 is capable to provide ESD protection for four data lines simultaneously. The pin connection is shown in Figure 1. Four parallel data lines, from inner IC to I/O port connector, could connect to SESLC5VT23S-6 four I/O pins directly. Pin 2 of SESLC5VT23S-6 is the negative reference pin, which should connect to the GND of PCB; while Pin 5 of SESLC5VT23S-6 is the positive reference pin, which should connect to the power supply of PCB. The connection wires should be as short as possible in order to minimize the parasitic



PCB Layout Guidelines

For optimum ESD protection and the whole circuit performance, the following PCB layout guidelines are recommended:

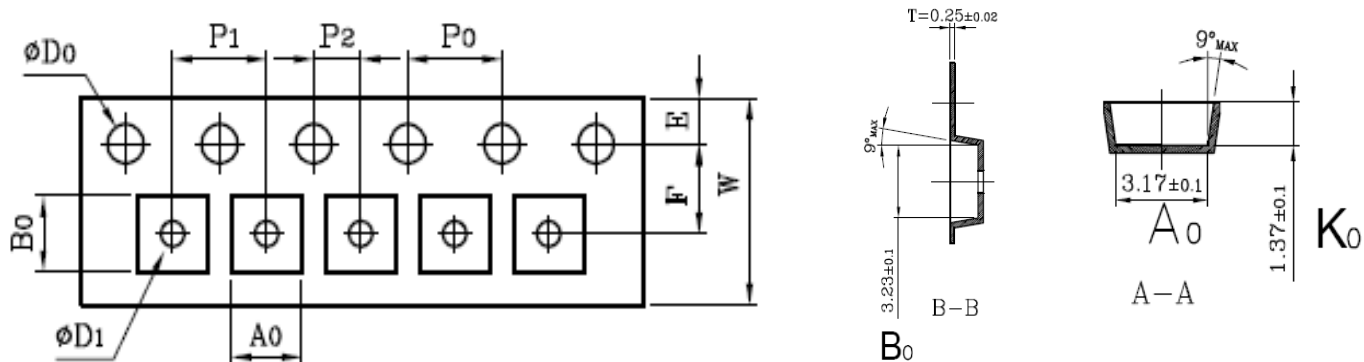
- * SESLC5VT23S-6 GND pin to the PCB GND rail path should be as short as possible. It could reduce the ESD transient return path to GND.
- * The vias connecting SESLC5VT23S-6 VCC & GND pins to the PCB VCC & GND should be wide.
- * Place SESLC5VT23S-6 as close to the connector port as possible. It could reduce the parasitic inductance and restrict ESD coupling into adjacent traces.
- * Avoid running critical signals near board edges.



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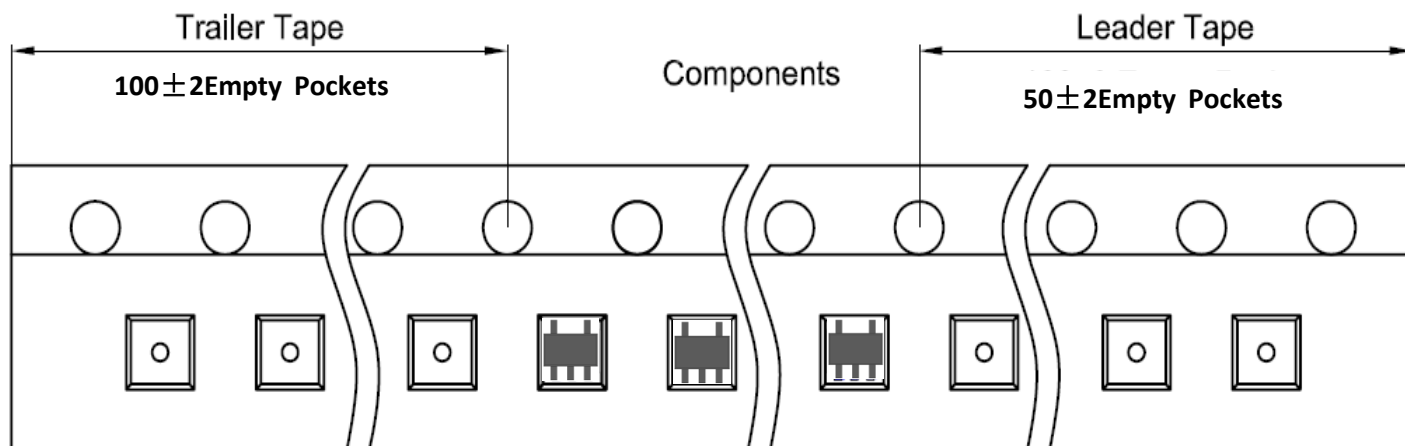
包装规范

1、载带尺寸图



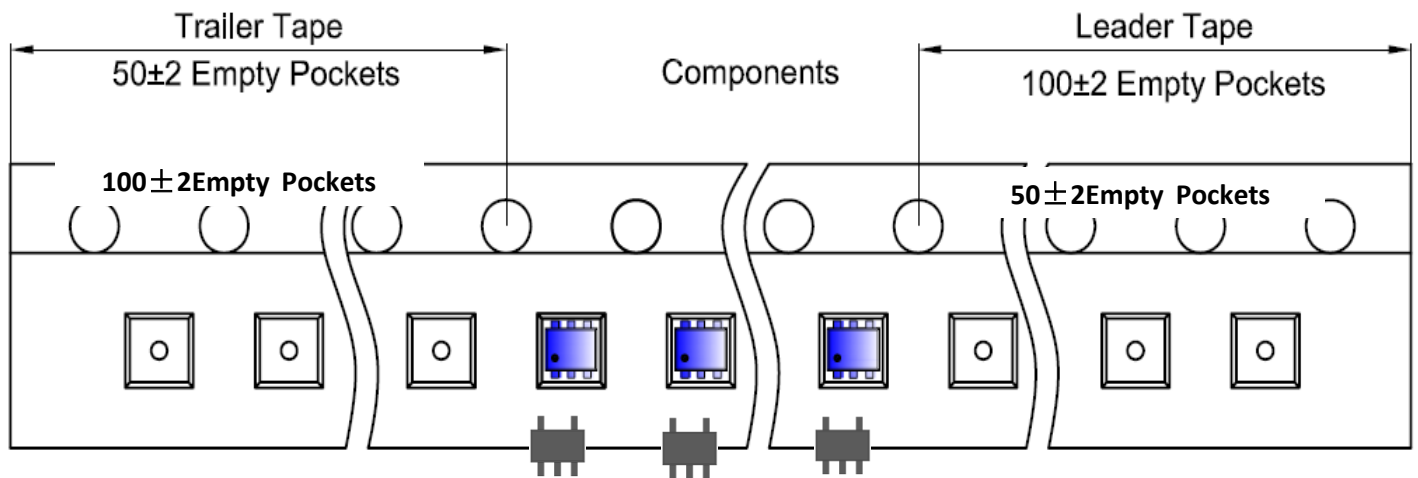
Dimensions are in millimeter											
Pkg Type	A0	B0	K0	D0	D1	W	P0	E	F	P1	P2
SOT-23-6L	3.17	3.23	1.37	$\phi 1.55$	$\phi 1.0$	8	4	1.75	3.5	4	2
Tolerance	± 0.1	± 0.1	± 0.1	± 0.1	$+0.25/-0$	$+0.3/-0.1$	± 0.1	± 0.1	± 0.1	± 0.1	± 0.1

2、编带空格

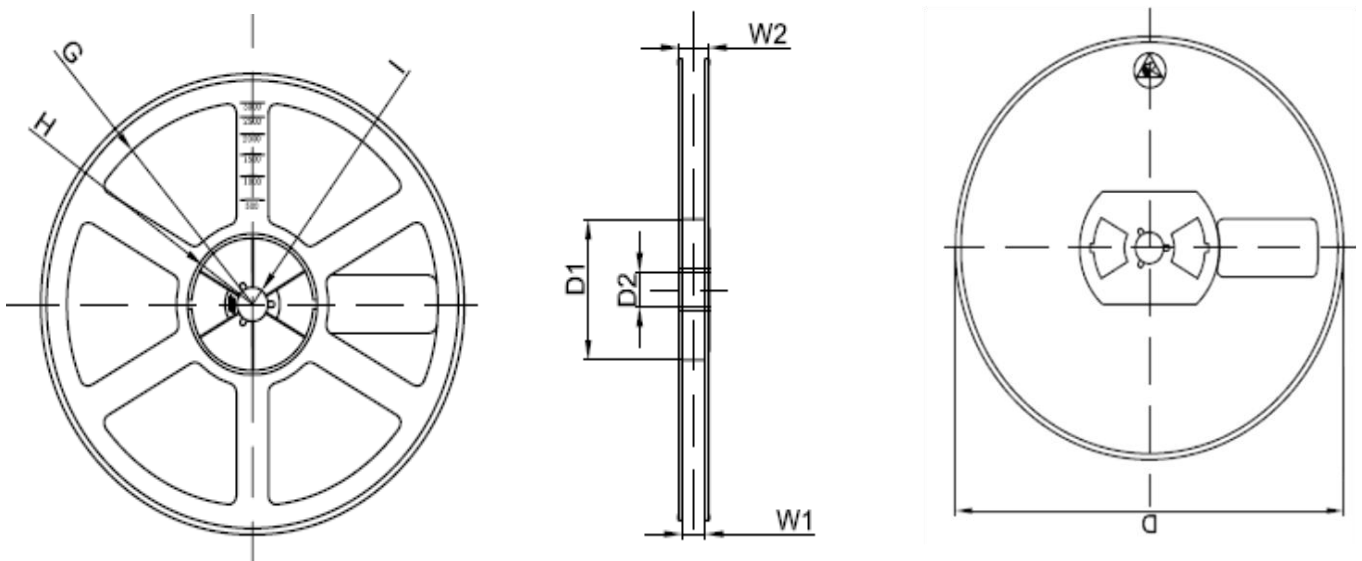


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2、编带空格



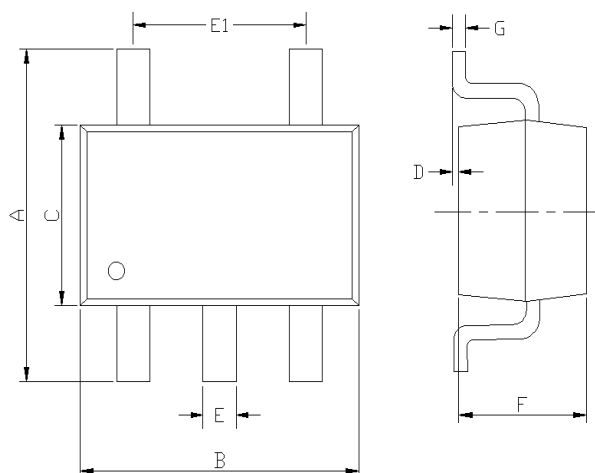
3、卷盘尺寸图



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	+/-2	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1

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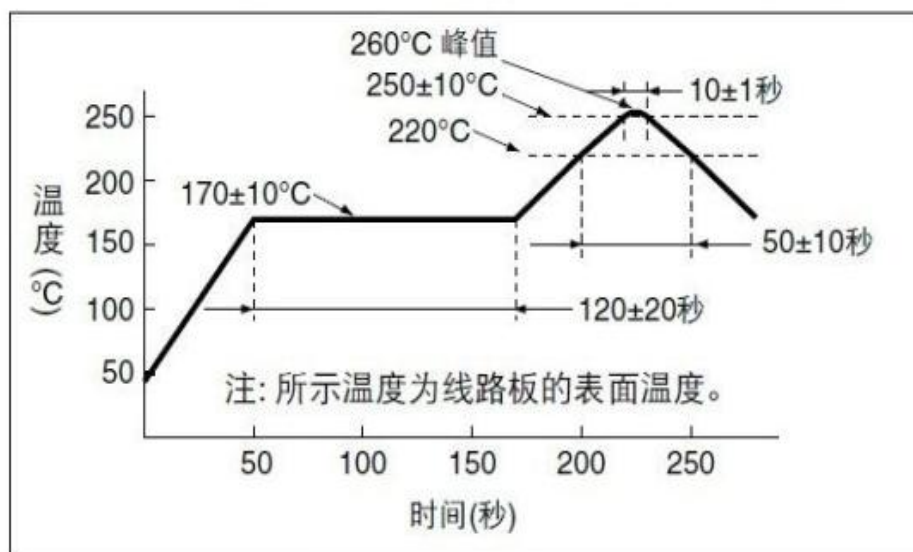
4、外形尺寸图



Symbol	Dimensions In Millimeters	
	Min	Max
A	2.650	2.950
B	2.820	3.020
C	1.500	1.700
D	0.000	0.100
E	0.300	0.500
E1	1.800	2.000
F	1.050	1.150
G	0.100	0.200

5、回流焊温度曲线图

SMD产品的焊接条件示例 (260°C 峰值: 无铅产品)



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6. 外箱



7. 內盒



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