

L034BT26L3

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Maximum ratings	2
Electrical characteristics.....	2
Rating and characteristic curves.....	3
Pinning information.....	4
Marking.....	4
Suggested solder pad layout.....	4
Packing information.....	5
Reel packing.....	6
Suggested thermal profiles for soldering processes.....	6
High reliability test capabilities.....	7

L034BT26L3

4-Line SMD Low Capacitance TVS for ESD Protection Array: 3.3V

Features

- Low operating and clamping voltage
- IEC 61000-4-2 (ESD) $\pm 30\text{KV}$ (Air) / $\pm 30\text{KV}$ (Contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Surge) 25A (8/20us)
- Suffix "-H" indicates Halogen-free parts, ex. L034BT26L3-H.

Applications

- Ethernet 10/100/1000.
- Wireless data (WAN/LAN) system.
- Desktops, Servers and Notebooks.
- Cellular Phones.
- Switching Systems.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23-6
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.013 gram

Package outline

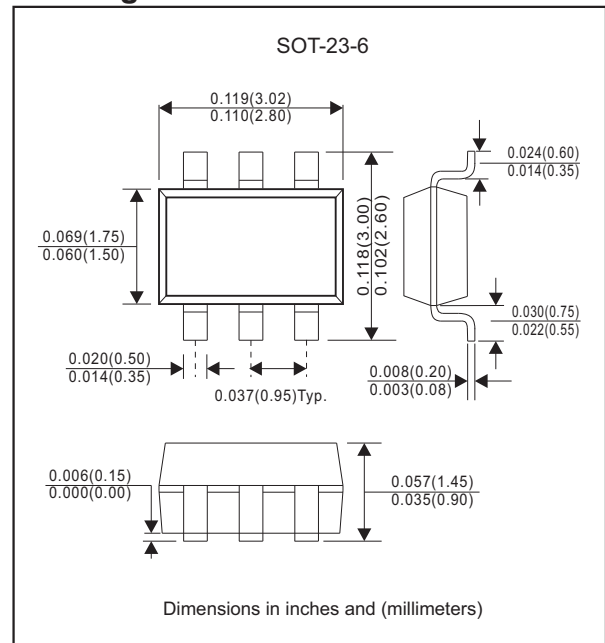


Fig. 1C

Fig. 1A

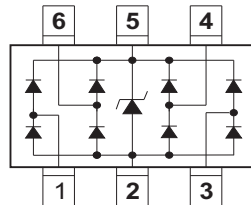
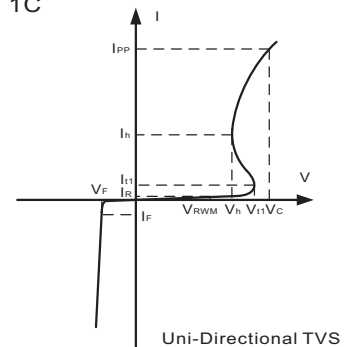
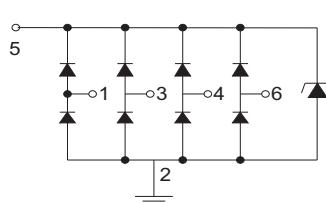


Fig. 1B



Maximum ratings (at $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	Value	UNIT
IEC 61000-4-2 (ESD) Air Contact	V_{ESD}	± 30 ± 30	kV
Peak pulse current (According to IEC 61000-4-5)	I_{PP}	25	A
Peak pulse power (According to IEC 61000-4-5)	P_{PP}	450	W
Operating Junction Temperature Range	T_J	-55to +125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage		V_{RWM}			3.3	V
Trigger Voltage (Ref. Fig.1C)	$I_{T1}=1\text{mA}$	V_{T1}	3.5		6.0	V
Holding Voltage (Ref. Fig.1C)	$I_h=10\text{mA}$	V_h	3.3		4.5	V
Reverse Leakage Current	$V_{RWM}=3.3\text{V}$, $T = 25^\circ\text{C}$	I_R		0.1	1.0	μA
Junction Capacitance	$V_R=0\text{V}$, $f=1\text{MHz}$, I/O pin to GND	C_J		3.8	5.0	pF
	$V_R=0\text{V}$, $f=1\text{MHz}$, Between I/O pins			2.0	2.5	
Clamping Voltage (Note 1)	$I_{PP}=1\text{A}$, $t_p=8/20\mu\text{s}$, Any I/O pin to GND	V_C			5.5	V
	$I_{PP}=10\text{A}$, $t_p=8/20\mu\text{s}$, Any I/O pin to GND				10.0	
	$I_{PP}=25\text{A}$, $t_p=8/20\mu\text{s}$, Any I/O pin to GND				16.0	

Note: 1. Non-repetitive current pulse 8/20 us exponential decay waveform according to IEC61000-4-5.

Rating and characteristic curves (L034BT26L3)

Figure 1. 8/20us Pulse Waveform

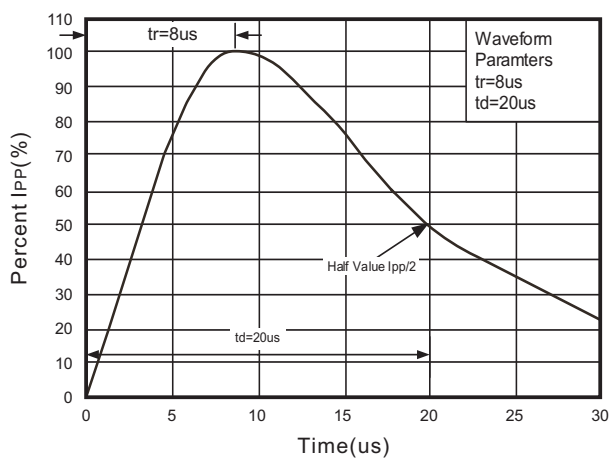


Fig.2 Clamping Voltage VS. Peak Pulse Current

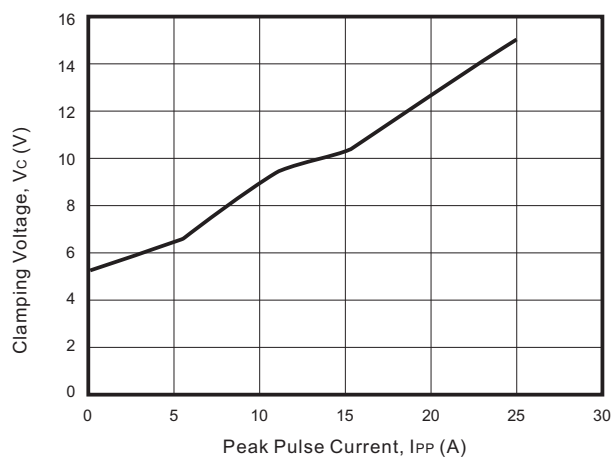


Fig.3 INSERTION LOSS S21 of I/O to GND

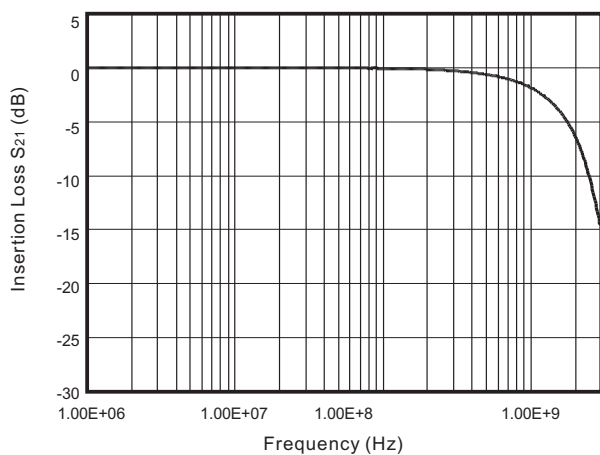


Fig.4 NORMALIZED CAPACITANCE VS. REVERSE VOLTAGE

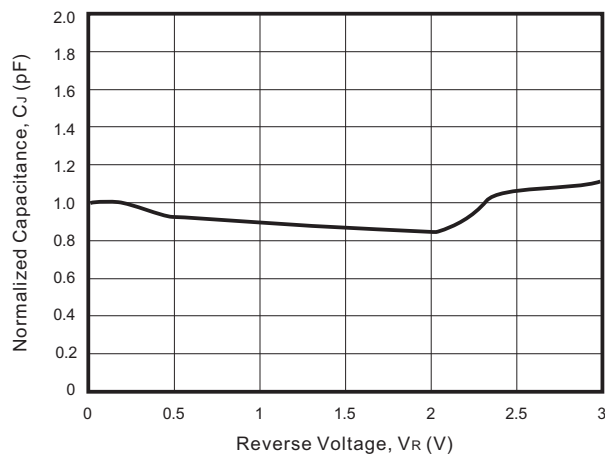


Fig.5 ESD CLAMPING OF I/O TO GND
(+8KV CONTACT PER IEC 61000-4-2)

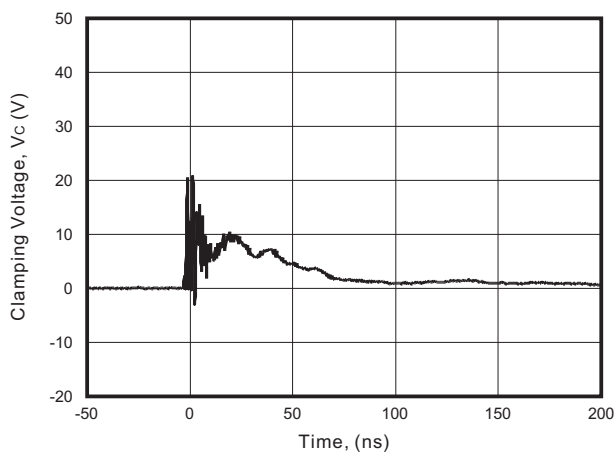
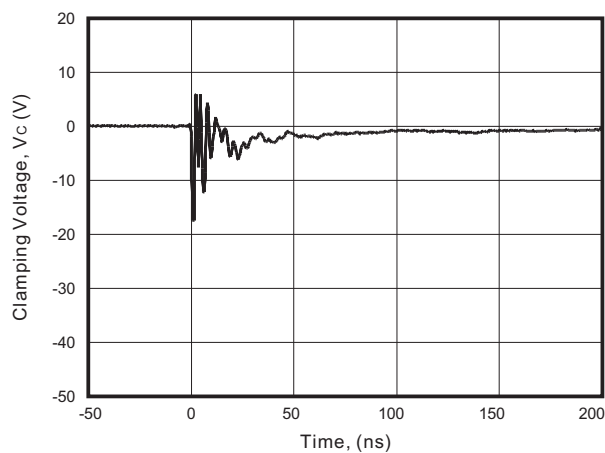
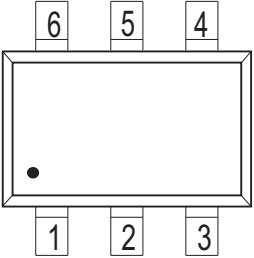
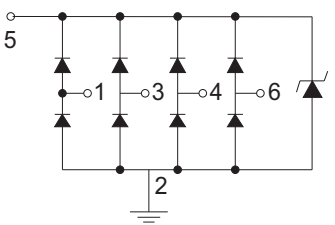


Fig.6 ESD CLAMPING OF I/O TO GND
(-8KV CONTACT PER IEC 61000-4-2)



L034BT26L3

Pinning information

Pin Configuration	Simplified outline	Circuit Diagram
1, 3, 4, 6 I/O 5 VRWM 2 GND		

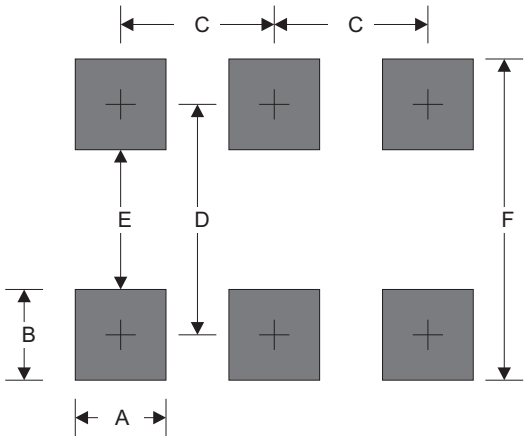
Marking

Type number	Marking code
L034BT26L3	4PXXX (Note)

Note:

- 1. P/N code: “4P”
- 2. L/N code: “XXX”
- 3. Internal code: “Y”

Suggested solder pad layout

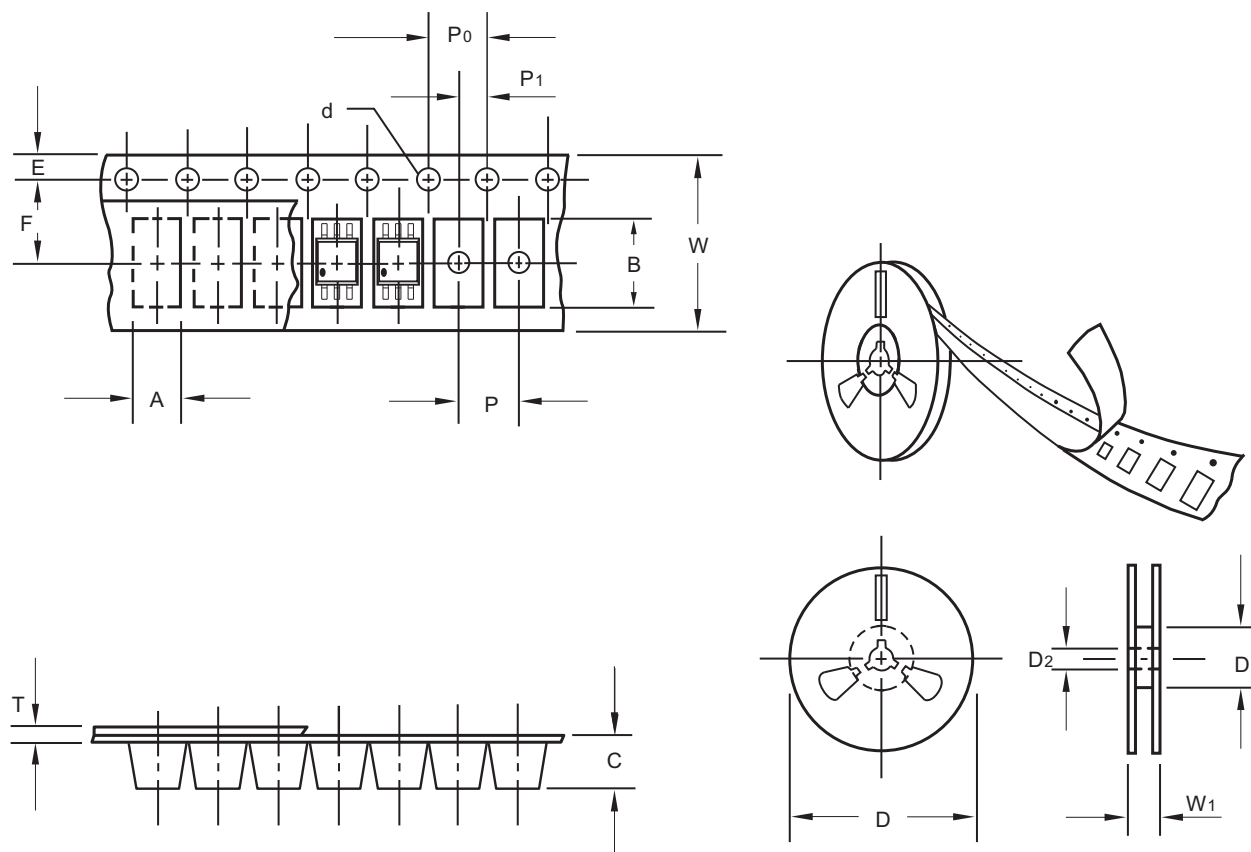


Dimensions in inches and (millimeters)

PACKAGE	A	B	C	D	E	F
SOT-23-6	0.024 (0.60)	0.043 (1.10)	0.037(0.95)	0.098(2.50)	0.055(1.40)	0.142(3.60)

L034BT26L3

Packing information



unit:mm

Item	Symbol	Tolerance	SOT-23-6
Carrier width	A	0.1	3.23
Carrier length	B	0.1	3.17
Carrier depth	C	0.1	1.35
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D1	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D1	min	60.00
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.05	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.05	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.00
Reel width	W1	max	14.40

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

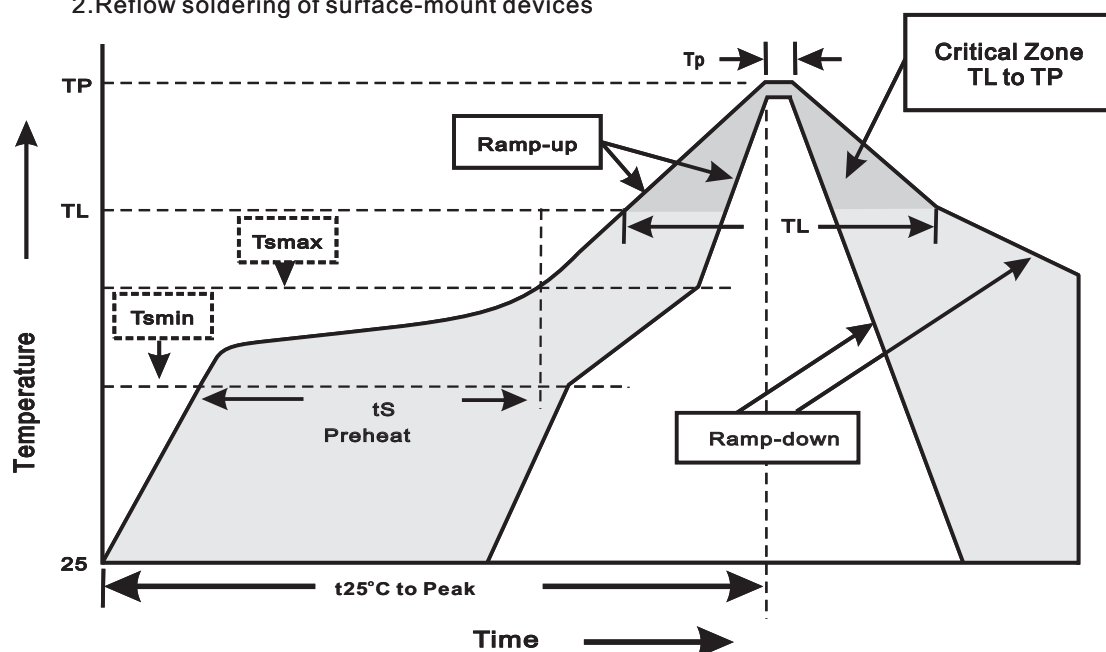
L034BT26L3

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOT-23-6	7"	3,000	4.0	30,000	183*183*123	178	382*262*387	240,000	9.50

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T _L to T _P)	<3°C/sec
Preheat -Temperature Min(T _{Smin}) -Temperature Max(T _{Smax}) -Time(min to max)(t _S)	150°C 200°C 60~120sec
T _{Smax} to T _L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T _L) -Time(t _L)	217°C 60~260sec
Peak Temperature(T _P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t _P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

L034BT26L3

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260\pm5^{\circ}\text{C}$ for $10\pm2\text{sec.}$ immerse body into solder $1/16''\pm1/32''$	MIL-STD-750D METHOD-2031
2. Solderability	at $245\pm5^{\circ}\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_{\text{RWM}}=80\%$ rate at $T_{\text{J}}=85^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Pressure Cooker	$15P_{\text{SIG}}$ at $T_{\text{A}}=121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
5. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
6. Humidity	at $T_{\text{A}}=85^{\circ}\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
7. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031