

L052BT523A

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L052BT523A

130W Low Capacitance Bi-Directional TVS For ESD Protection : 5.0V

Features

- 130Watts peak pulse power ($t_p=8/20\mu s$).
- Medium capacitance ($C_J=8pF$ typical).
- Protection one data/power line to:
 - IEC 61000-4-2(ESD) $\pm 30kV$ (Contact), $\pm 30kV$ (Air).
 - IEC 61000-4-4(EFT) 40A (5/50ns).
 - IEC 61000-4-5(Lighting) 10A (8/20 μs).
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex.L052BT523A-H.

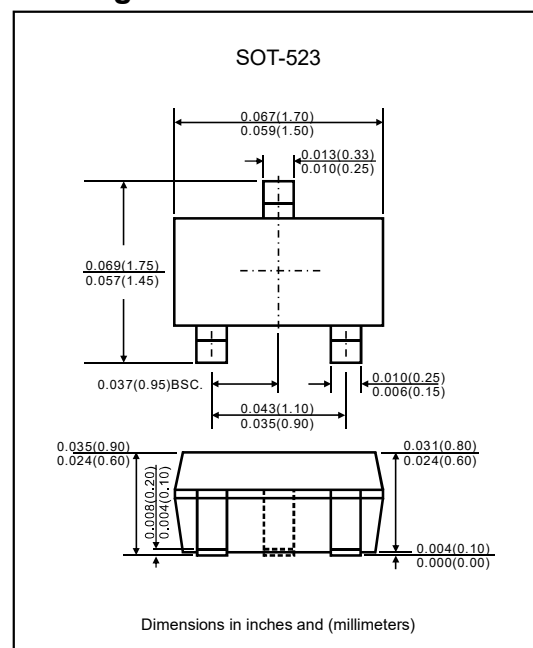
Applications

- Cell phone handsets and accessories.
- Computers, peripherals, and notebook.
- Communication systems.
- Audio and video equipment.
- Portable electronics.

Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : Molded plastic, SOT-523.
- Terminals : High temperature soldering guaranteed, 260°C/10 seconds at terminals.
- Mounting Position : Any.

Package outline



Maximum ratings (At $T_A=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Units
Peak pulse power ($t_p=8/20\mu s$)	P_{PK}	130	W
Peak pulse current ($t_p=8/20\mu s$)	I_{PP}	10	A
ESD per IEC61000-4-2 (Air)	V_{ESD}	± 30	KV
ESD per IEC61000-4-2 (Contact)			
Operating temperature	T_J	+125	$^\circ C$
Storage temperature range	T_{STG}	-55 to +150	$^\circ C$

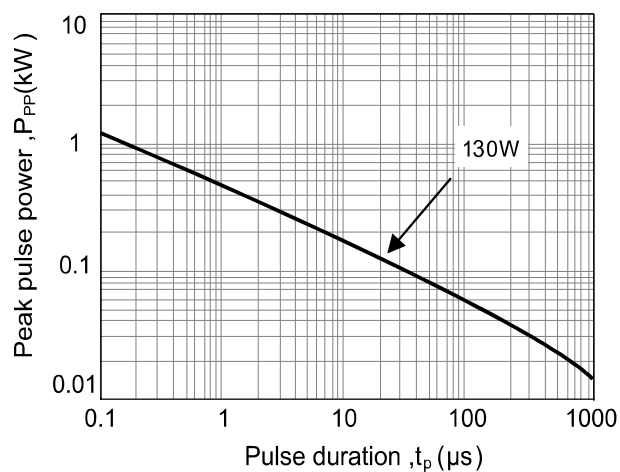
Electrical Characteristics (At $T_A=25^\circ C$ unless otherwise noted)

Parameter	Test condition	Symbol	Min.	Typ.	Max.	Units
Reverse working voltage		V_{RWM}			5.0	V
Holding voltage	$I_T=1mA$	V_{BR}	5.8		7.0	V
Reverse leakage current	$V_{RWM}=5V$	I_R			0.1	μA
Clamping voltage (IEC61000-4-5)	$I_{PP}=1A$	V_C			7.0	V
Clamping voltage (IEC61000-4-5)	$I_{PP}=10A$				13.0	
Junction capacitance	$V_R=0V, f=1.0MHz$	C_J		8.0		pF

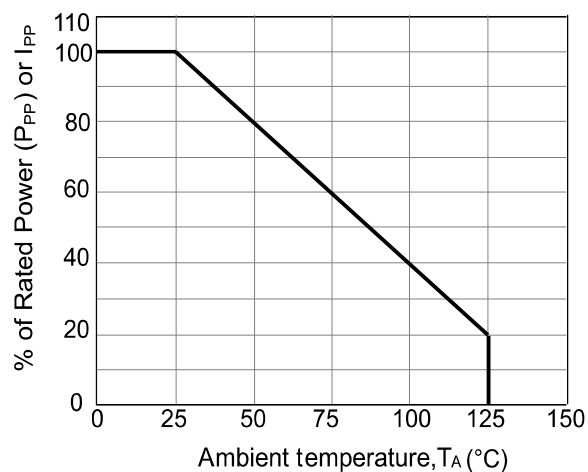
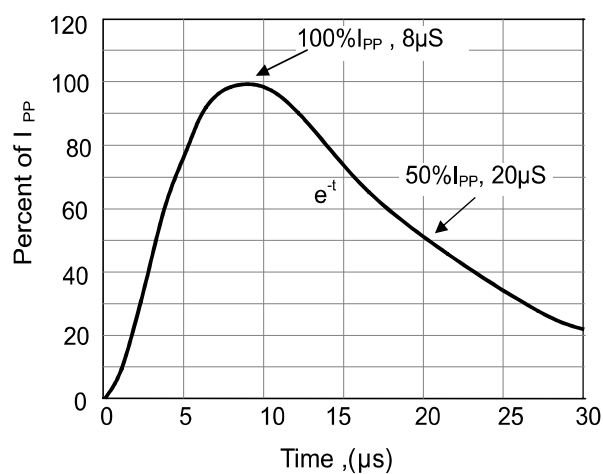
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Rating and characteristic curves

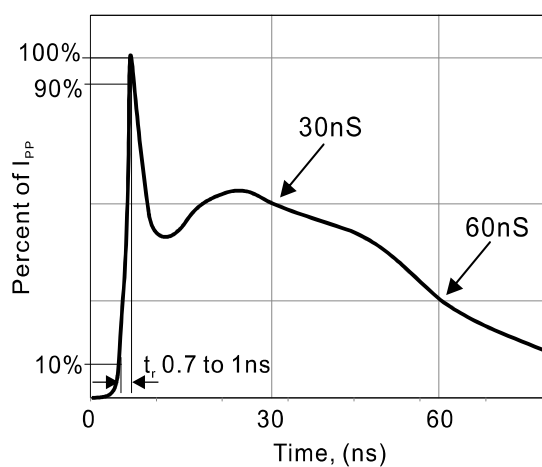
Peak pulse power rating curve



Pulse de-rating curve

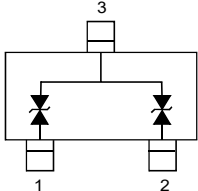
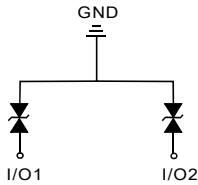
Pulse waveform, 8/20 μ s

Pulse waveform, ESD(IEC61000-4-2)



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Pinning information

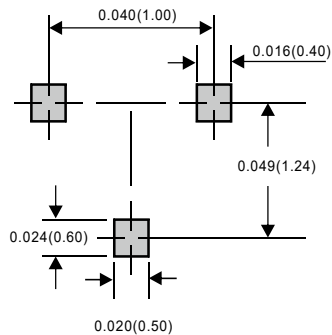
Pin	Simplified outline	Circuit diagram
Pin 1 I/O Pin 2 I/O Pin 3 GND		

Marking

Type number	Marking code
L052BT523A	BL5E

Suggested solder pad layout

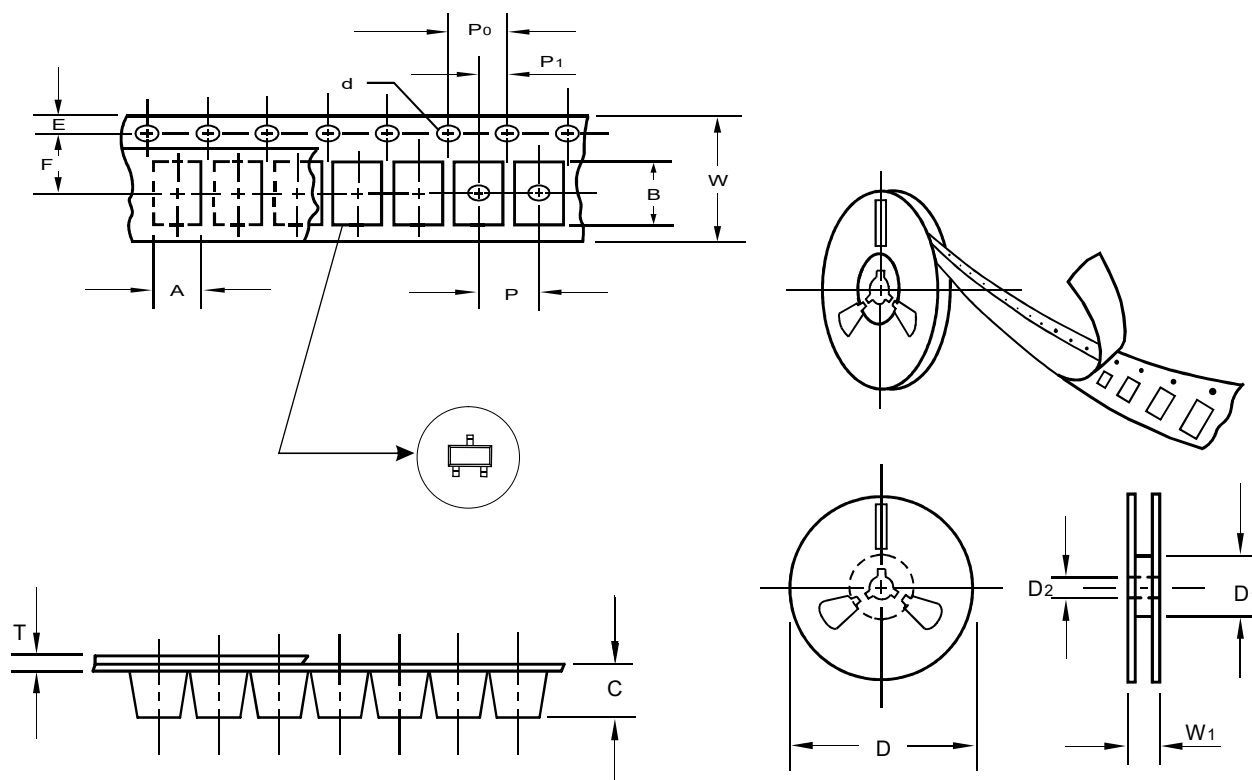
SOT-523



Dimensions in inches and (millimeters)

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Packing information



unit:mm

Item	Symbol	Tolerance	SOT-523
Carrier width	A	0.1	1.85
Carrier length	B	0.1	1.85
Carrier depth	C	0.1	0.875
Sprocket hole	d	0.1	1.5
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D ₁	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D ₁	min	60.00
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W ₁	1.0	9.50

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

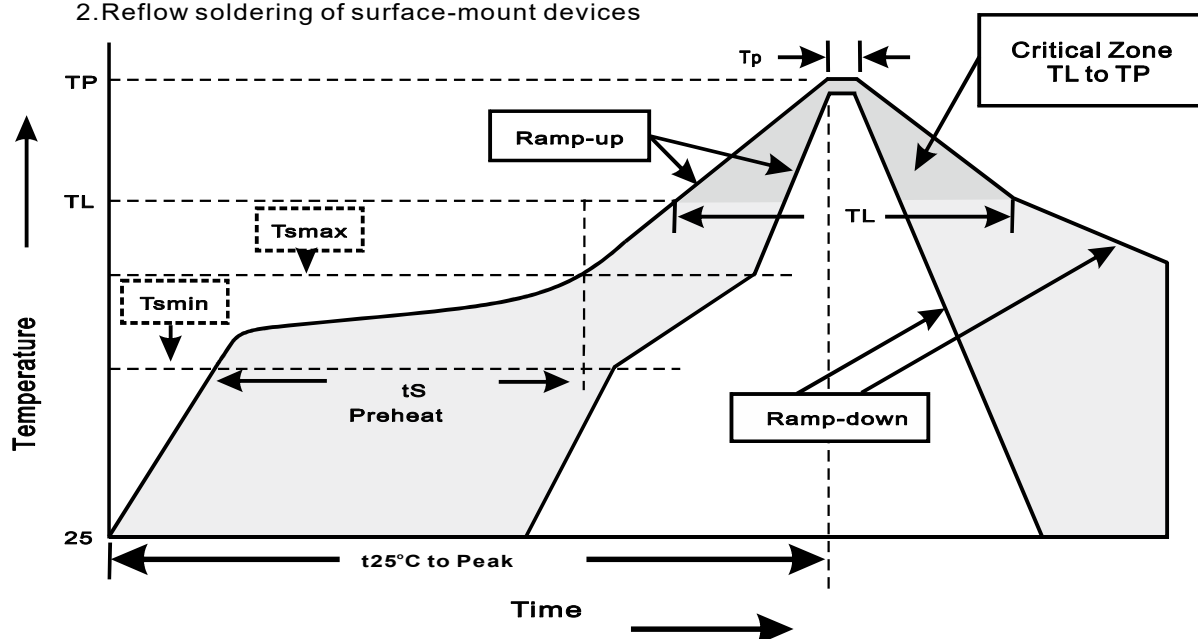
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Reel packing

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)
SOT-523	7"	3,000	4.0	30,000	183*183*123	178	382*262*387	240,000

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