

ESD5L5.0A

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75W Surface Mount TVS Uni-Directional For ESD Protection-5.0V

Features

- Protects one data line.
- Operating voltage : 5V.
- Ultra low clamping voltage.
- Complies with following standards :
IEC 61000-4-2 (ESD) immunity test :
- Air discharge : $\pm 25\text{KV}$.
- Contact discharge : $\pm 20\text{KV}$.
- IEC 61000-4-5 (Lightning) 5A (8/20 μs).
- We declare that the material of product compliance with RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex.ESD5L5.0A-H.

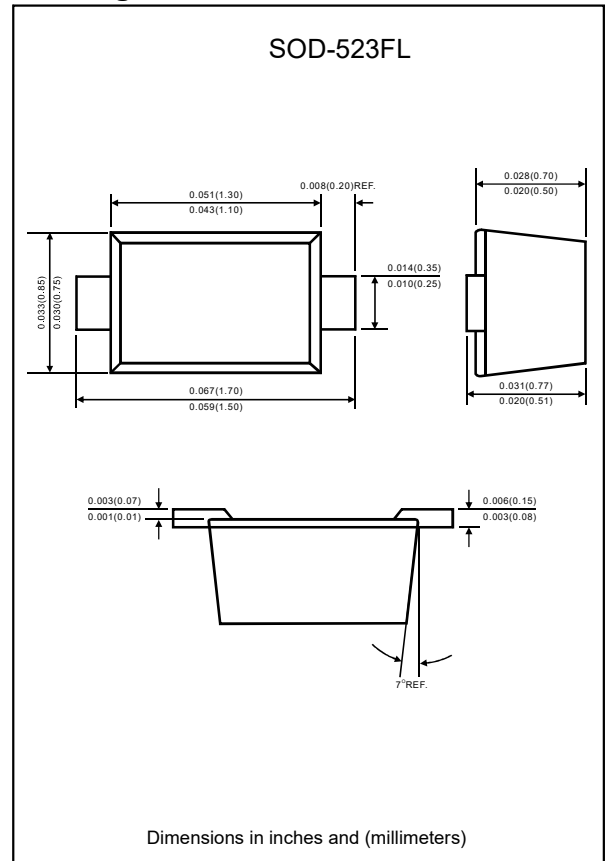
Applications

- Cell phone handsets and accessories.
- Personal digital assistants.
- Notebooks, Desktops, Server.
- USB 2.0 and USB 3.0 Interfaces.
- Ethernet - 10/100/1000 Base T.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-523FL
- Terminals : Solder plated, solderable per
MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.002 gram

Package outline



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

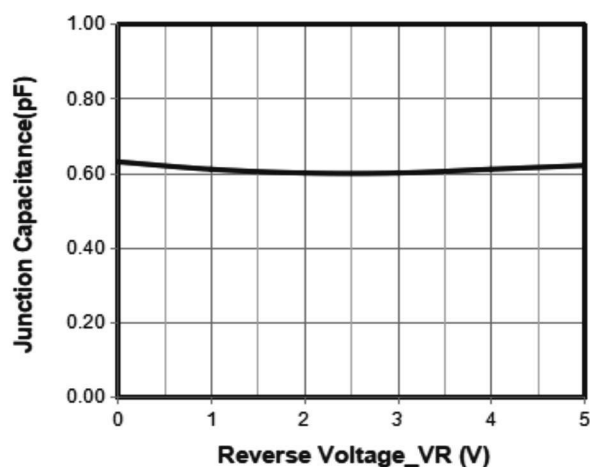
Parameter	Symbol	Value	Unit
Peak pulse power ($t_p=8/20\mu\text{s}$)	P_{PP}	75	W
Peak pulse current ($t_p=8/20\mu\text{s}$)	I_{PP}	5	A
ESD Per IEC 61000-4-2 (Air)	V_{ESD}	± 25	KV
ESD Per IEC 61000-4-2 (Contact)		± 20	
Operating temperature	T_J	+125	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

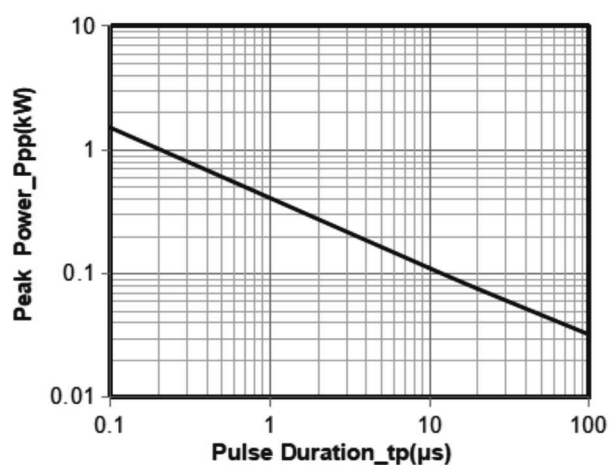
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Reverse stand-off voltage		V_{RWM}			5.0	V
Breakdown voltage	$I_T=1\text{mA}$	V_{BR}	6.5			V
Reverse leakage current	$V_{RWM}=5\text{V}$	I_R			0.5	μA
Clamping voltage	$I_{PP}=1\text{A}$, $t_p=8/20\mu\text{s}$	V_C			10	V
	$I_{PP}=5\text{A}$, $t_p=8/20\mu\text{s}$	V_C			15	V
Junction capacitance	$V_R=0\text{V}$, $f=1\text{MHz}$	C_{ESD}		0.6	0.8	pF

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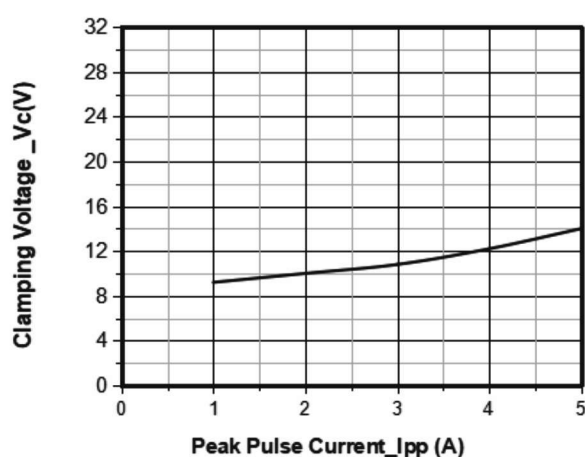
Rating and characteristic curves



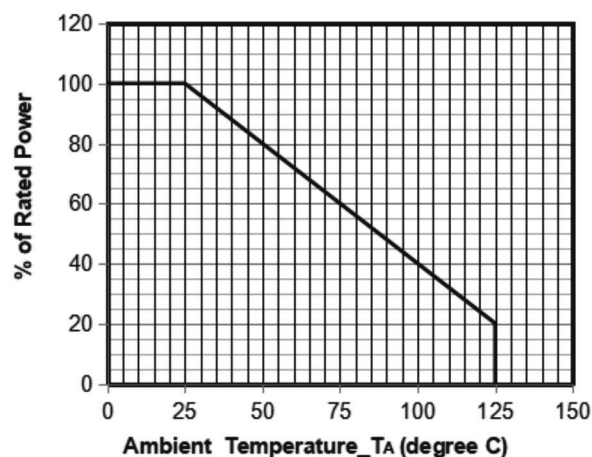
Junction Capacitance vs. Reverse Voltage



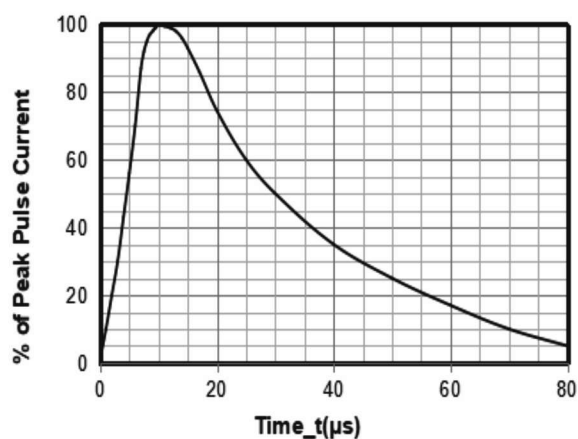
Peak Pulse Power vs. Pulse Time



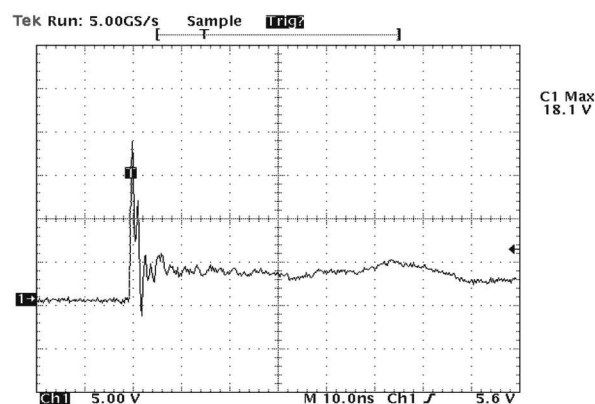
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



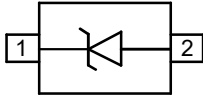
Note : Data is taken with a 10x attenuator

ESD Clamping Voltage

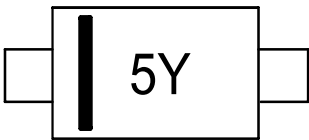
8 kV Contact per IEC61000-4-2

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Pinning information

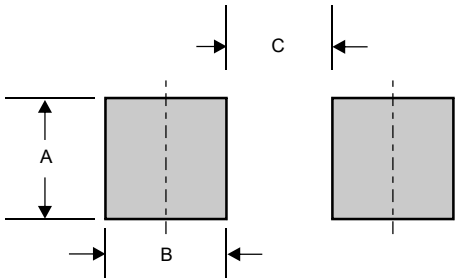
Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking code



5Y = Device Marking Code
Bar denotes cathode

Suggested solder pad layout

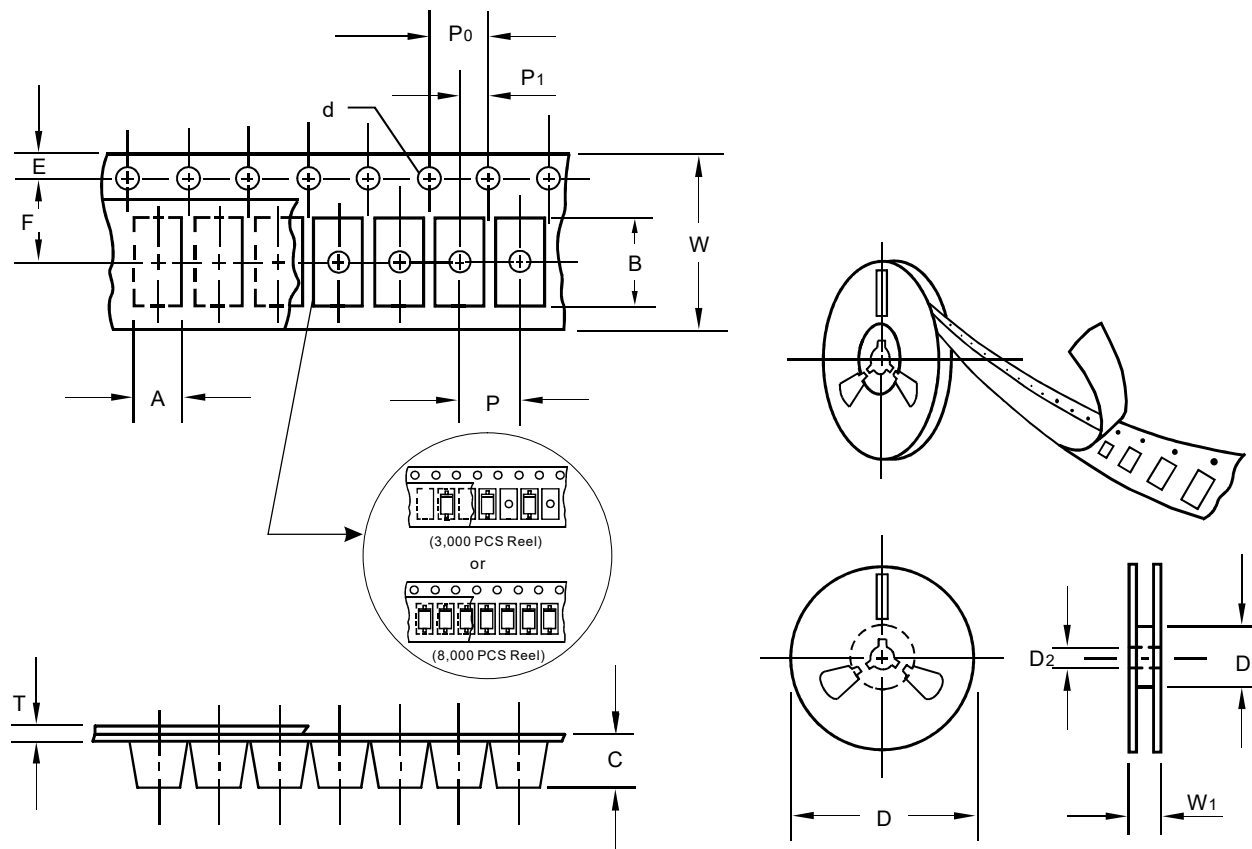


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-523FL	0.032 (0.80)	0.024 (0.60)	0.044 (1.10)

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Packing information



unit:mm

Item	Symbol	Tolerance	SOD-523FL
Carrier width	A	0.1	0.90
Carrier length	B	0.1	1.94
Carrier depth	C	0.1	0.76
Sprocket hole	d	0.1	1.50
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D1	min	50.00
Feed hole diameter	D2	0.2	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	2.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W1	1.0	9.50

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

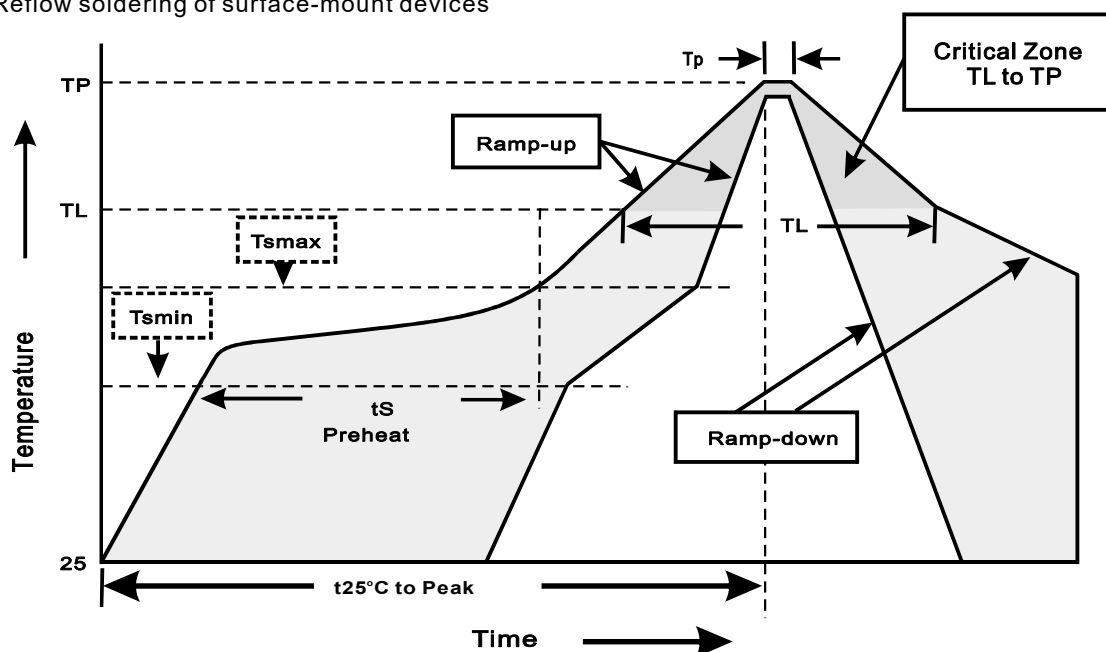
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Reel packing

Package	Reel Size	Reel (pcs)	Component Spacing (m/m)	Box (pcs)	Inner Box	Reel DIA. (m/m)	Carton Size (m/m)	Carton (pcs)	Approx. Gross Weight (kg)
SOT-523FL	7"	3,000	2.0	30,000	183x23x183	178	382x257x387	240,000	8

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