

Descriptions

The LP1P523C05P01-C3 of Transient Voltage Suppressors (TVS) are designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computer, and PDAs.

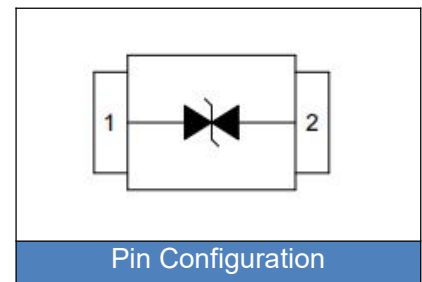
They offer superior electrical characteristics such as lower clamping voltage and no device degradation when compared to MLVs. They are designed to protect sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD), lightning, electrical fast transients (EFT), and cable discharge events (CDE)



Features

- ◆ IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- ◆ SOD523 surface mount package
- ◆ Working voltage: 5V
- ◆ Low leakage current
- ◆ Low operating and clamping voltages
- ◆ Solid-state silicon avalanche technology
- ◆ Lead Free/RoHS compliant
- ◆ Solder reflow temperature: Pure Tin-Sn, 260~270°C
- ◆ Flammability rating UL 94V-0
- ◆ Meets MSL level 1, per J-STD-020

Schematic

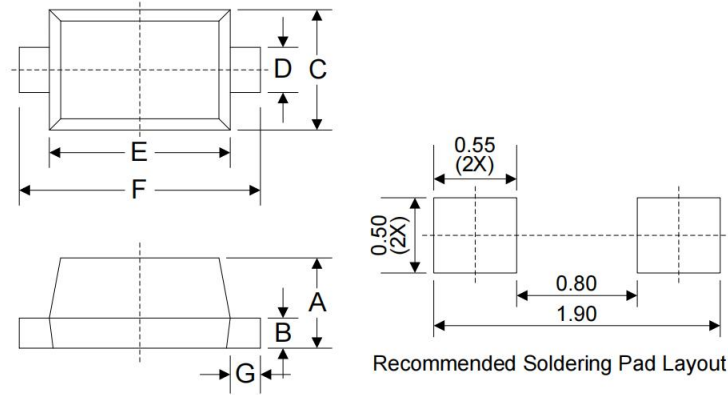


Applications

- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants (PDA's)
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Pagers Peripherals

Dimensions (SOD-523)

Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.50	0.70	0.020	0.028
B	0.07	0.20	0.003	0.008
C	0.70	0.90	0.028	0.035
D	0.25	0.35	0.010	0.014
E	1.10	1.30	0.043	0.051
F	1.50	1.70	0.059	0.067
G	0.15	0.25	0.006	0.010



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

Rating	Symbol	Value	Unit
ESD voltage (Contact discharge)	V_{ESD}	± 8	kV
ESD voltage (Air discharge)		± 15	
Storage & operating temperature range	T_{STG}, T_J	$-55 \sim +150$	$^{\circ}\text{C}$

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				5	V
Reverse breakdown voltage	V_{BR}	$I_{\text{BR}}=1.0\text{mA}$	6.0			V
Reverse leakage current	I_{R}	$V_{\text{R}}=5\text{V}$			1	μA
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_{C}	$I_{\text{PP}}=1.0\text{A}$			9.8	V
Peak Pulse Current($t_p=8/20\mu\text{s}$)	I_{PP}				5	A
Off state junction capacitance	C_J	$0\text{Vdc}, f=1\text{MHz}$		3		pF

Ratings and Characteristic Curves (T_A=25°C unless otherwise noted)

Figure 1. Pulse Waveforms

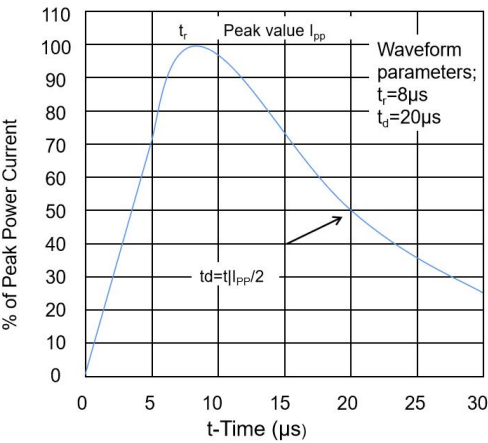


Figure 2. Pulse Derating Curve

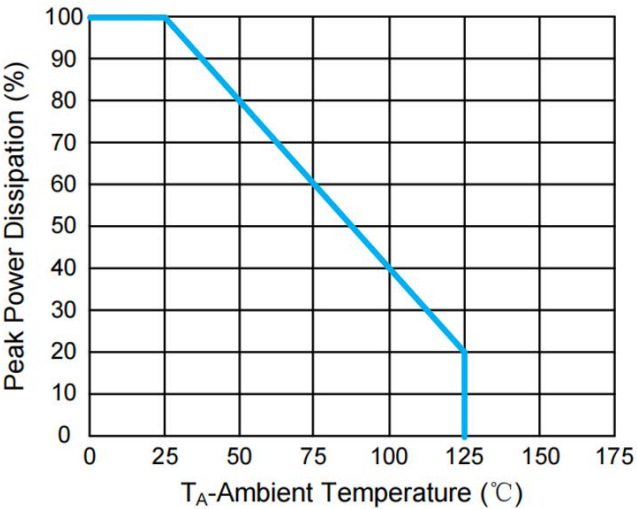


Figure 3. Capacitance vs. Reverse Voltage

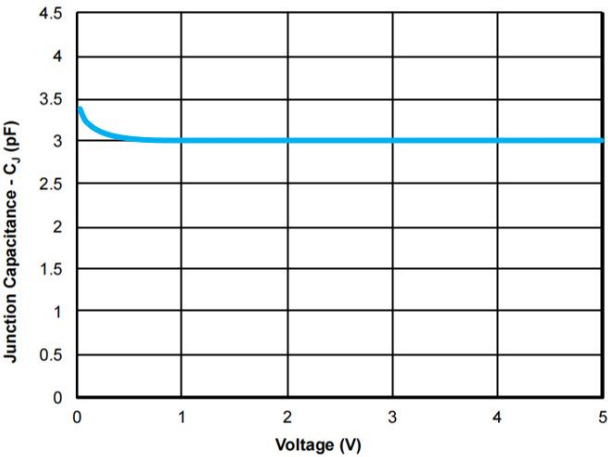
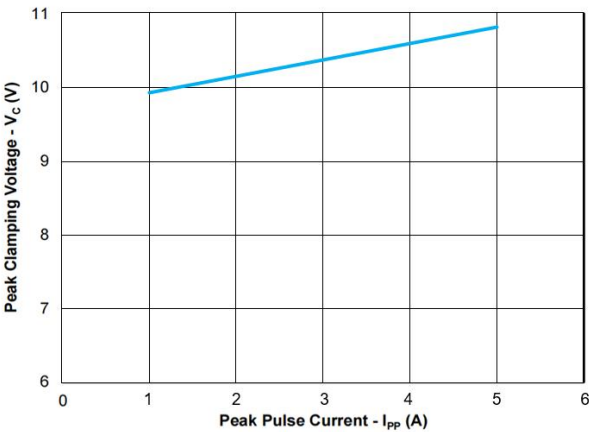
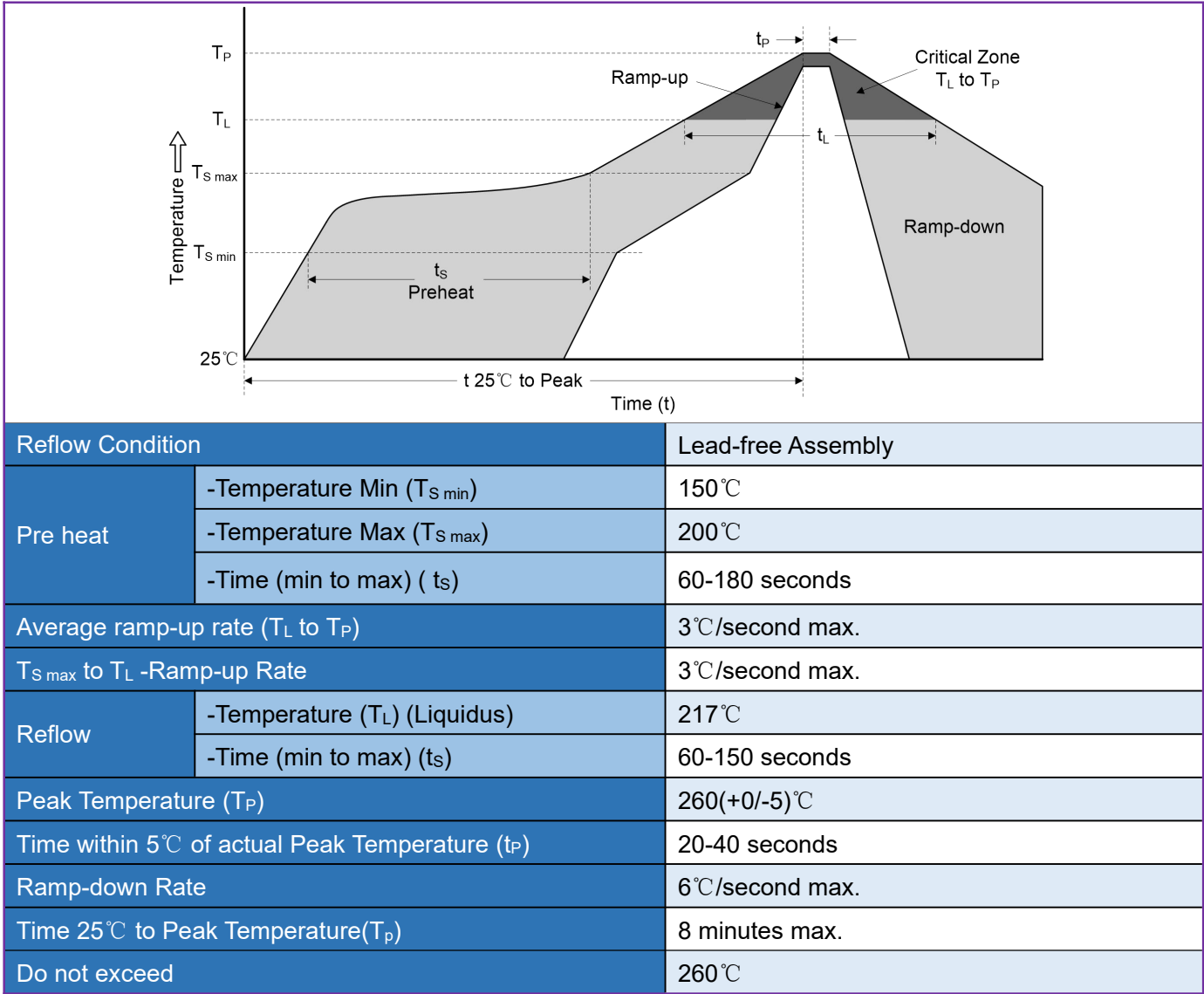


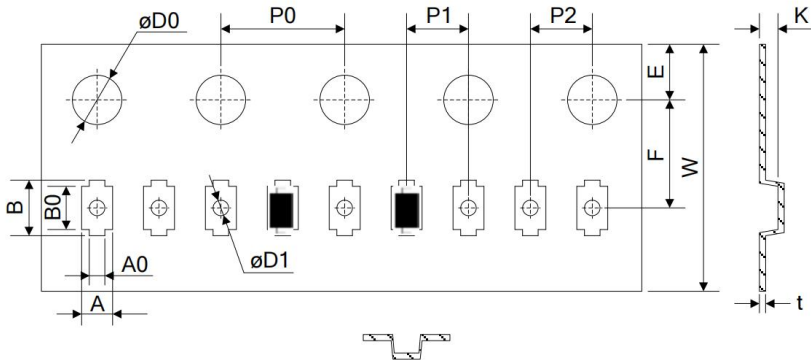
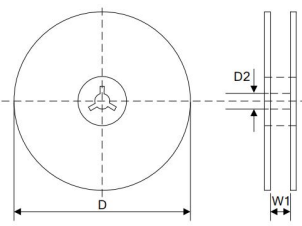
Figure 4. Clamping Voltage vs. Peak Pulse Current



Reflow Soldering Parameters



Packaging

Tape		Symbol	Dimension (mm)
		W	8.00±0.30
		P0	4.00±0.10
		P1	2.00±0.10
		P2	2.00±0.10
		D0	Φ1.55±0.10
		D1	Φ0.50±0.05
		E	1.75±0.10
		F	3.50±0.10
		A	1.00±0.10
		A1	0.50±0.10
		B	1.80±0.10
		B0	1.30±0.10
		K	0.65±0.10
		t	0.20±0.05
Reel		D	Φ178.0±2.0
		D2	Φ13.00
		W1	9.5
		Quantity: 3000PCS	