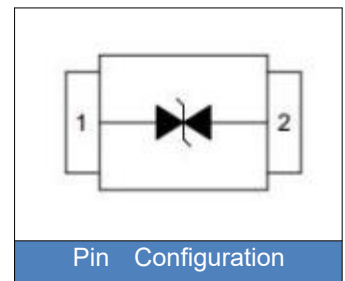


Descriptions

The UP1P523C05P01 is 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 20KV Air, 15KV contact compliance
- ◆ SOD-523 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



Application

- ◆ Cellular Handsets & Accessories
- ◆ Notebooks & Handhelds
- ◆ Portable Instrumentation
- ◆ LVDS Interfaces
- ◆ Peripherals
- ◆ Digital cameras
- ◆ CCD Camera Lines
- ◆ Automobile Applications

Maximum Ratings($T_A=25^{\circ}\text{C}$ Unless Otherwise Noted)

Rating	Symbol	Value	Unit
Peak Pulse Power ($t_p=8/20\mu\text{s}$ waveform)	P_{PP}	60	W
ESD voltage (Contact discharge)	V_{ESD}	± 15	kV
ESD voltage (Air discharge)		± 20	
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}	$I_{BR}=1.0\text{mA}$	6.0			V
Reverse leakage current	I_R	$V_R=5\text{V}$			1	μA
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=1.0\text{A}$			8.5	V
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=3.0\text{A}$			10	V
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=4.5\text{A}$			13	V
Peak Pulse Current($t_p=8/20\mu\text{s}$)	I_{PP}				4.5	A
Off state junction capacitance	C_J	$0\text{Vdc}, f=1\text{MHz}$		0.2		pF

Typical Characteristics Curves($T_A=25^{\circ}\text{C}$ Unless Otherwise Noted)

Figure 1. Pulse Waveforms

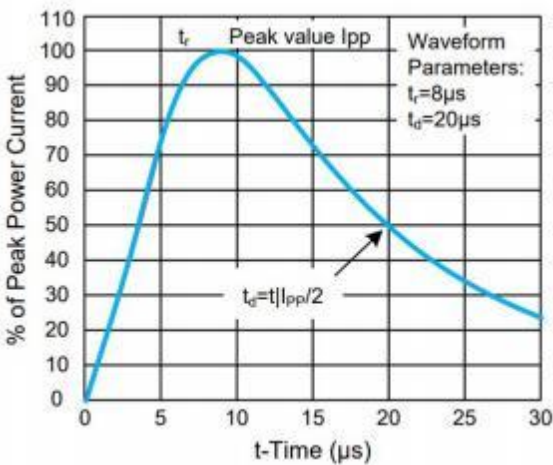


Figure 2. Power Derating Curve

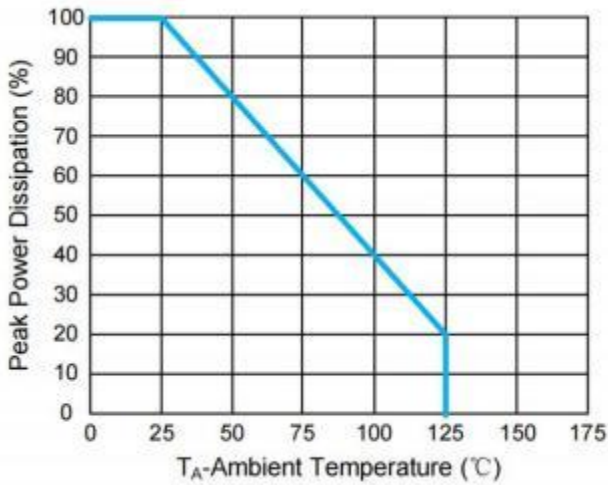


Figure 3. Capacitance vs. Reverse Voltage

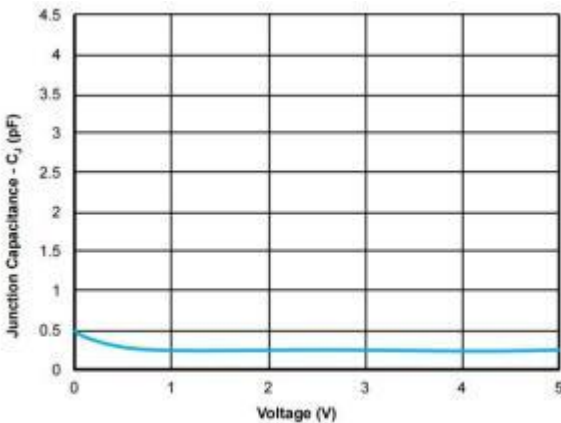
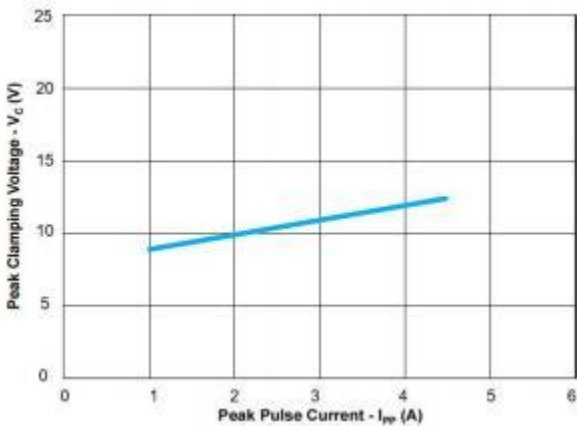
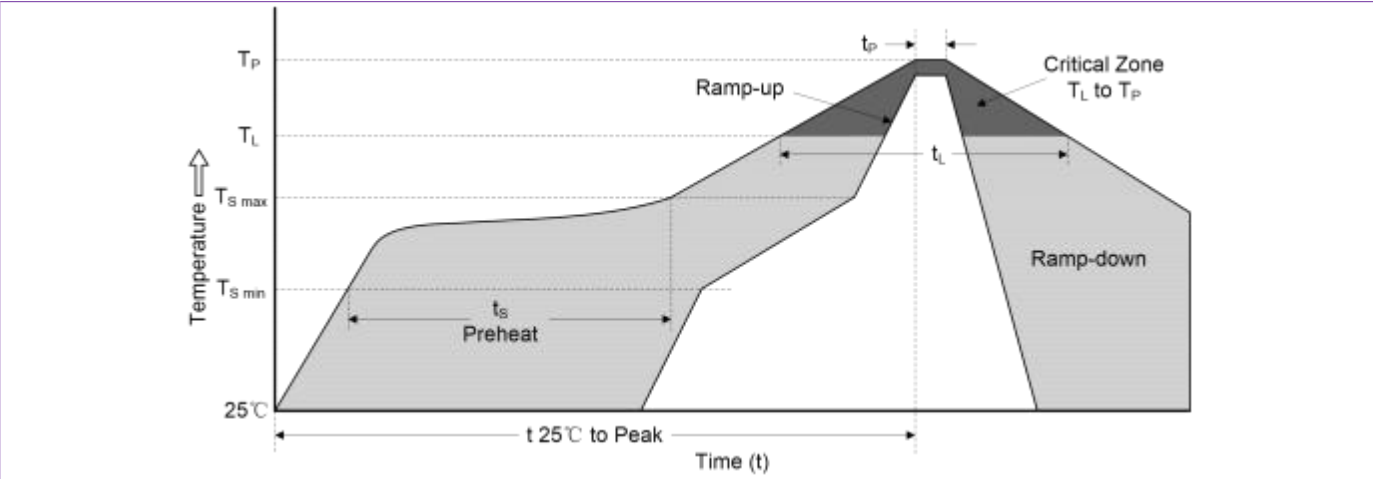


Figure 4. ESD Clamping(8kV Contact IEC61000-4-2)

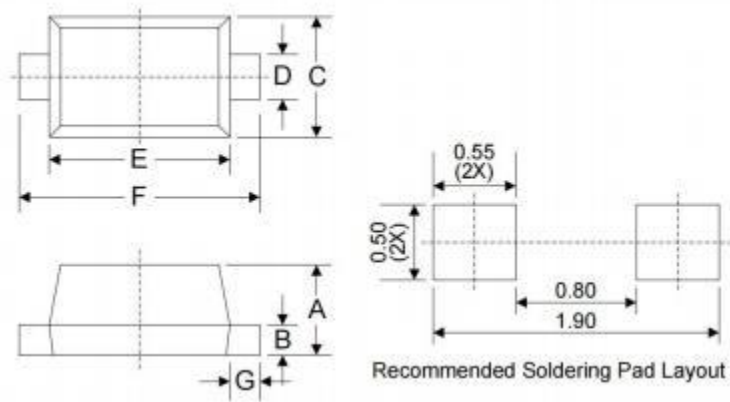


Reflow Soldering Parameters



Reflow Condition		Lead-free Assembly
Pre heat	-Temperature Min (TS min)	150 C
	-Temperature Max (TS max)	200 C
	-Time (min to max) (ts)	60- 180 seconds
Average ramp-up rate (TL to TP)		3 C/ second max.
TS max to TL -Ramp-up Rate		3 C/ second max.
Reflow	-Temperature (TL) (Liquidus)	217 C
	-Time (min to max) (ts)	60- 150 seconds
Peak Temperature (TP)		260(+0/-5)C
Time within 5C of actual Peak Temperature (tp)		20-40 seconds
Ramp-down Rate		6 C/ second max.
Time 25C to Peak Temperature(Tp)		8 minutes max.
Do not exceed		260 C

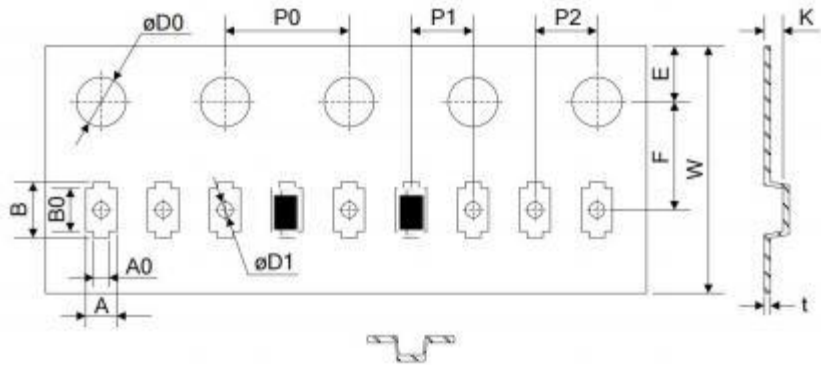
Dimensions (SOD-523)



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

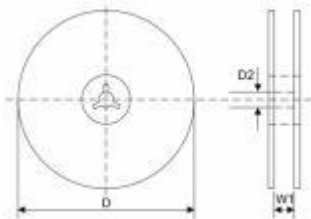
Packaging

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	