

## SOD-523 Plastic-Encapsulate ESD Protection Diodes

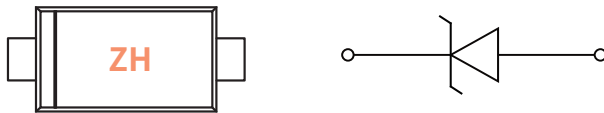
### Features

- Low leakage current
- SOD-523 surface mount package
- IEC 61000-4-2 (ESD Air):  $\pm 30\text{kV}$
- IEC 61000-4-2 (ESD Contact):  $\pm 30\text{kV}$
- IEC 61000-4-5 (Lightning 8/20 $\mu\text{s}$ ): 8A

### Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation, Digital Cameras
- Peripherals
- Audio Players, Industrial Equipment

### Function Diagram



**Reverse Working Voltage**  
7V Max.  
**Normal capacitance**  
65pF(Max.)

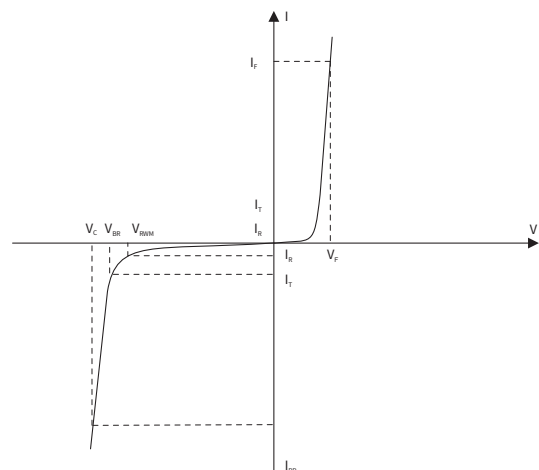


### Maximum Ratings (Ta=25°C Unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>ESD</sub>	Electrostatic Discharge Voltage	ESD per IEC 61000-4-2( Air )	$\pm 30$	KV
		ESD per IEC 61000-4-2( Contact)	$\pm 30$	KV
P <sub>PP</sub>	Peak Pulse Power	tp = 8/20 $\mu\text{s}$	175	W
I <sub>PP</sub>	Rated Peak Pulse Current	tp = 8/20 $\mu\text{s}$	8.0	A
T <sub>J</sub>	Operating Junction Temperature Range	—	-55 to +125	°C
T <sub>STG</sub>	Operating Junction Temperature Range	—	-55 to +150	°C

### Electrical Parameter

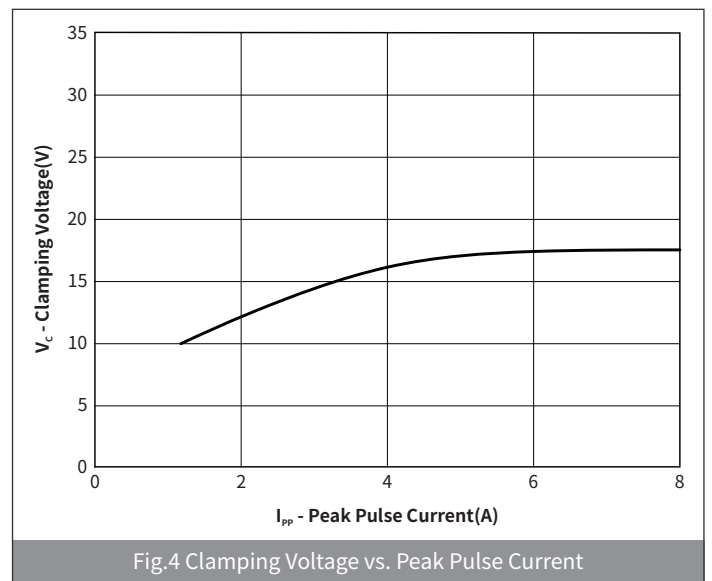
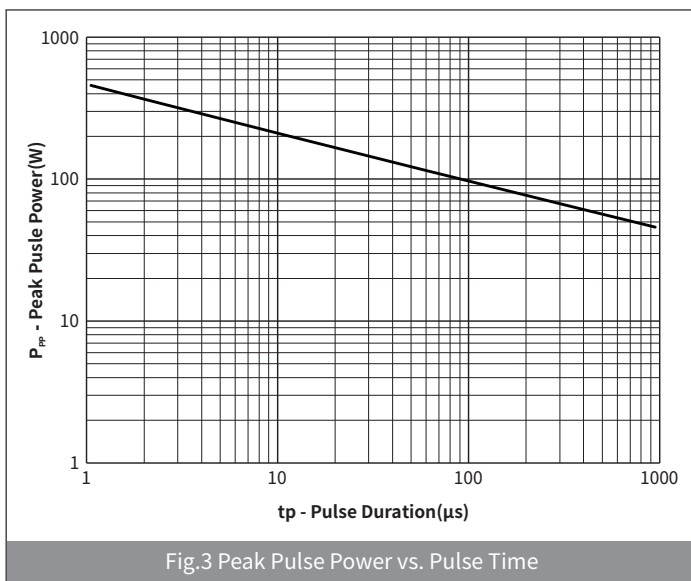
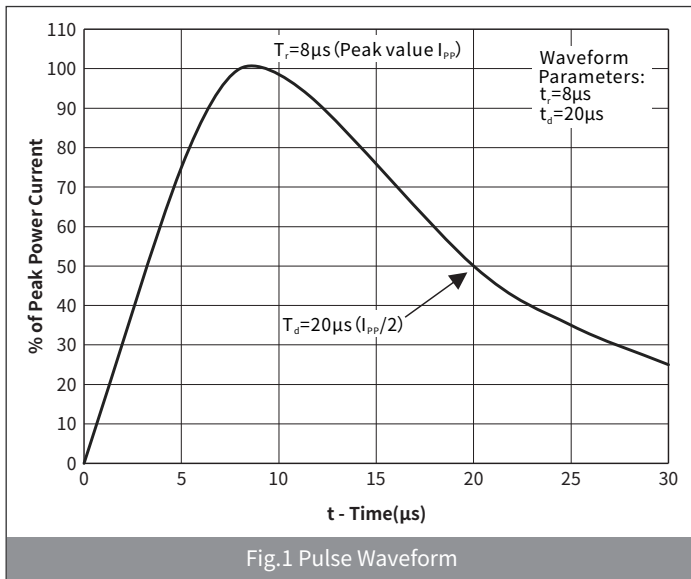
SYMBOL	PARAMETER
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>PP</sub>	Peak Pulse Current
I <sub>T</sub>	Test Current
I <sub>R</sub>	Reverse Leakage Current @ VRWM
V <sub>RWM</sub>	Peak Reverse Working Voltage
P <sub>PP</sub>	Peak Pulse Power Dissipation
C <sub>J</sub>	Junction Capacitance @ V <sub>R</sub> =0V, f=1MHz
I <sub>F</sub>	Forward Current
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>



## ● Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	CONDITION	Min	Typ	Max	UNIT
Peak Reverse Working Voltage	$V_{RWM}$	$T_a=25^\circ\text{C}$	—	—	7.0	V
Breakdown Voltage	$V_{BR}$	$I_R=1.0\text{mA}, T_a=25^\circ\text{C}$	7.5	—	9.5	V
Reverse Leakage Current	$I_R$	$V_R=7.0\text{V}, T_a=25^\circ\text{C}$	—	—	1.0	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP}=1.0\text{A}, t_p=8/20\mu\text{s}$	—	—	14	V
		$I_{PP}=8.0\text{A}, t_p=8/20\mu\text{s}$	—	—	22	
Junction Capacitance	$C_J$	$V_R=0\text{V}, f=1\text{MHz}$	—	—	65	pF

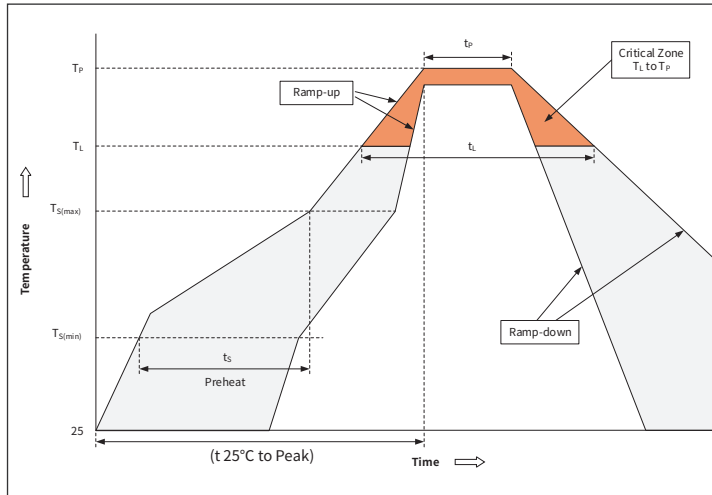
## ● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



## Ordering Information

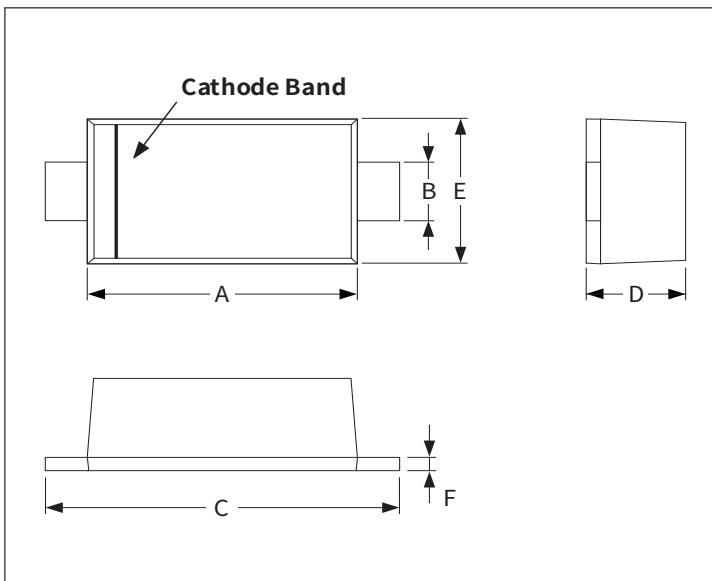
PREFERRED P/N	PACKAGE CODE	PACKAGE	SIZE(mm)	DELIVERY MODE	MPQ(PCS)
H7VND5U	R1	SOD-523	0.30×0.80×0.115	7" REEL	3000
	R1H	SOD-523	0.30×0.80×0.115	7" REEL	8000

## Recommended Soldering Conditions



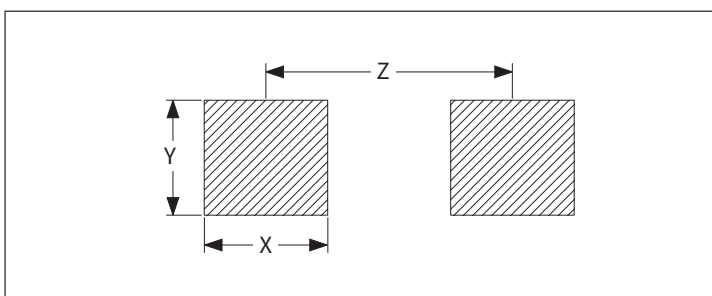
Profile Feature		Pb-Free Assembly
Pre-heat	Temperature Min (T <sub>S(min)</sub> )	+150°C
	Temperature Max(T <sub>S(max)</sub> )	+200°C
	Time (Min to Max) (t <sub>s</sub> )	60-180 secs.
Average ramp up rate (Liquid us Temp (T <sub>L</sub> ) to peak)		3°C /sec. Max
T <sub>S(max)</sub> to T <sub>L</sub> - Ramp-up Rate		3°C/sec. Max
Reflow	Temperature(T <sub>L</sub> )(Liquid us)	+217°C
	Temperature(t <sub>r</sub> )	60-150 secs.
Peak Temp (T <sub>p</sub> )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t <sub>p</sub> )		20-40secs
Ramp-down Rate		6°C /sec. Max
Time 25°C to Peak Temp (T <sub>p</sub> )		8 min. Max
Do not exceed		+260°C

## Package Outline Dimensions (SOD-523)



Symbol	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	1.10	1.30	0.043	0.051
B	0.25	0.35	0.010	0.014
C	1.50	1.70	0.059	0.067
D	0.50	0.70	0.020	0.027
E	0.70	0.90	0.027	0.035
F	0.05	0.20	0.002	0.008

## Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
X	0.55	0.65	0.022	0.026
Y	0.65	0.75	0.026	0.029
Z	1.37	1.47	0.054	0.058

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