

Transient Voltage Suppressors for ESD Protection

General Description

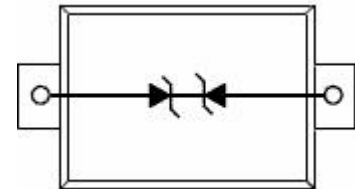
The ESD5Z5CA is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

Applications

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

Features

- Small Body Outline Dimensions
- Low Body Height
- Peak Power up to 200 Watts @ 8 x 20 μ s Pulse
- Low Leakage current
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- IEC61000-4-4 Level 4 EFT Protection



SOD- 523

ORDERING INFORMATION

Device	Package	Shipping
ES5Z5CA	SOD-523	3000/Tape & Reel

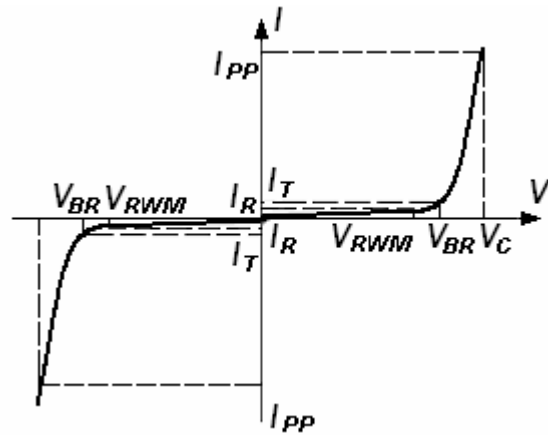
Absolute Ratings (T_{amb}=25°C)

Symbol	Parameter	Value	Units	
P _{PP}	Peak Pulse Power (t _p = 8/20 μ s)	200	W	
T _L	Maximum lead temperature for soldering during 10s	260	°C	
T _{stg}	Storage Temperature Range	-55 to +155	°C	
T _{op}	Operating Temperature Range	-40 to +125	°C	
T _j	Maximum junction temperature	150	°C	
	IEC61000-4-2 (ESD)	air discharge ± 15 contact discharge ± 8	KV	
	IEC61000-4-4 (EFT)	40	A	
	ESD Voltage	Per Human Body Model	16	KV

Transient Voltage Suppressors for ESD Protection

Electrical Parameter

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T



Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified. VF = 0.9V at IF = 10mA

Device	V_{RWM} (V)	I_R (uA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 1)	I_T	V_C (V) @ $I_{PP}=5 A^*$	V_C (V) @ Max I_{PP}^*	I_{PP} (A)*	P_{PK} (W)*	C (pF)
	Max	Max	Min	mA	Typ	Max	Max	Max	Typ
ESD5Z5CA	5.0	1	5.6	1.0	11.6	18.6	9.4	174	25

*Surge current waveform per Figure 1.

- V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C.

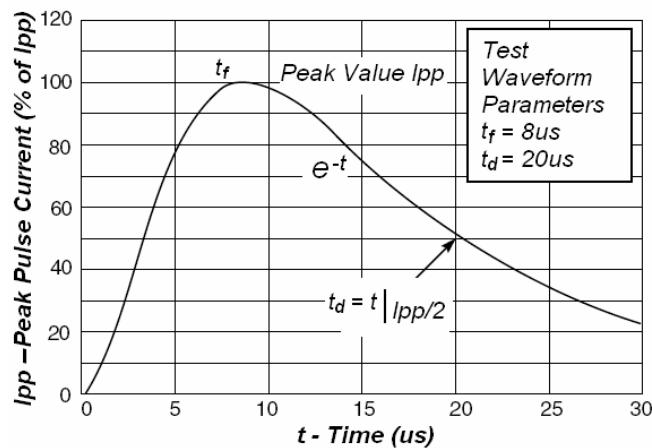


Fig1. Pulse Waveform

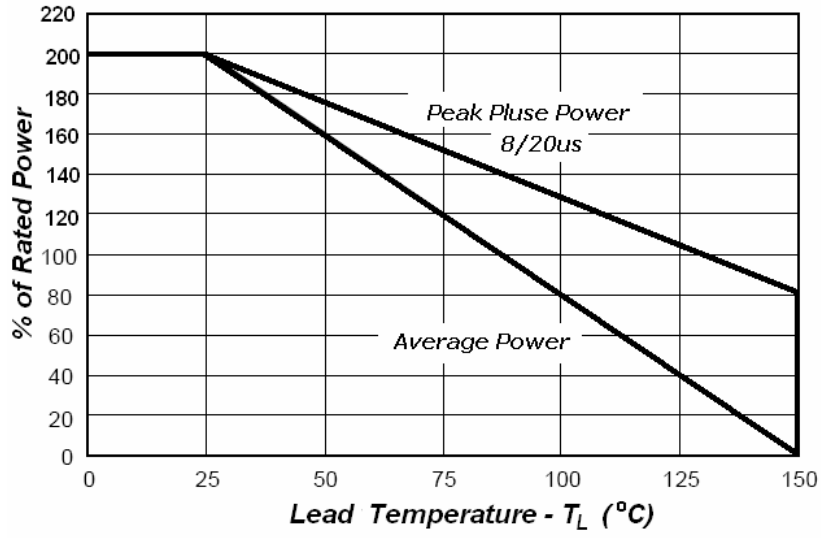
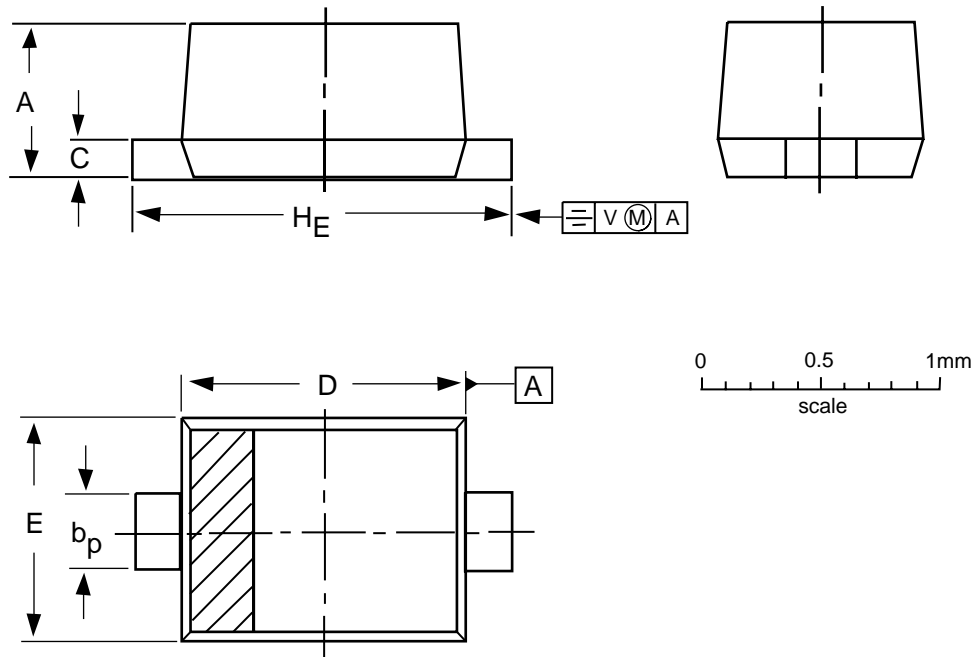


Fig2. Power Derating

SC-79/SOD-523



DIMENSIONS (mm are the original dimensions)

UNIT	A	b _p	c	D	E	H _E	V
mm	0.7	0.35	0.2	1.3	0.9	1.7	0.15
	0.5	0.25	0.1	1.1	0.7	1.5	

Note

1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOD523			SC-79		98-11-25

IMPORTANT NOTICE

and **SXSEMI**[®] are registered trademarks of **SXSEMI Electronics Co., Ltd** (SXSEMI). SXSEMI reserves the right to make changes without further notice to any products herein. SXSEMI makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SXSEMI assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. “Typical” parameters which may be provided in SXSEMI data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including “Typicals” must be validated for each customer application by customer’s technical experts. SXSEMI does not convey any license under its patent rights nor the rights of others. The products listed in this document are designed to be used with ordinary electronic equipment or devices. Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.