

# ESD5Z Series

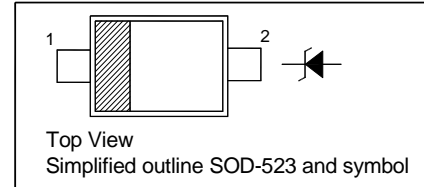
## ESD Protection Diode

### Features

- Excellent clamping capability
- Low leakage
- Fast response time

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

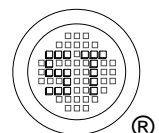


### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
IEC61000-4-2 (ESD) Air Contact	$V_{\text{ESD}}$	$\pm 30$ $\pm 30$	KV
ESD Voltage Per Human Body Model Per Machine Model	$V_{\text{ESD}}$	16 400	KV V
Power Dissipation on FR-5 Board	$P_{\text{tot}}$	200	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{stg}}$	- 55 to + 150	$^\circ\text{C}$

### Characteristics at $T_a = 25^\circ\text{C}$ ( $V_F = 1.1\text{ V Max. at } I_F = 10\text{ mA}$ )

Type	Marking Code	Reverse Stand-off Voltage	Reverse Current	Breakdown Voltage		Clamping Voltage			Reverse Peak Pulse Current	Peak Power Dissipation	Capacitance
		$V_{\text{RWM}}$	$I_{\text{R}}$ at $V_{\text{RWM}}$	$V_{\text{BR}}$	at $I_{\text{T}}$	$V_{\text{C}}$	at $I_{\text{PP}}$	$V_{\text{C}}$ at Max. $I_{\text{PP}}$	$I_{\text{PP}}$	$P_{\text{PK}}$	$C_j$
		Max. (V)	Max. ( $\mu\text{A}$ )	Min. (V)	(mA)	Typ. (V)	(A)	Max. (V)	Max. (A)	Max. (W)	Typ. (pF)
ESD5Z2V5	02	2.5	6	4	1	6.5	5	10.9	11	120	145
ESD5Z3V3	ZE	3.3	0.05	5	1	8.4	5	14.1	11.2	158	105
ESD5Z5V0	05	5	0.05	6.2	1	11.6	5	18.6	9.4	174	80
ESD5Z6V0	06	6	0.01	6.8	1	12.4	5	20.5	8.8	181	70
ESD5Z7V0	07	7	0.01	7.5	1	13.5	5	22.7	8.8	200	65
ESD5Z9V0	09	8.3	0.5	9	1	11.5	5	15	13.3	200	92
ESD5Z12	12	12	0.01	14.1	1	17	5	21.9	8	175	55



# ESD5Z Series

## Electrical characteristic curves

Fig 1. Clamping Voltage Curve (3V3)

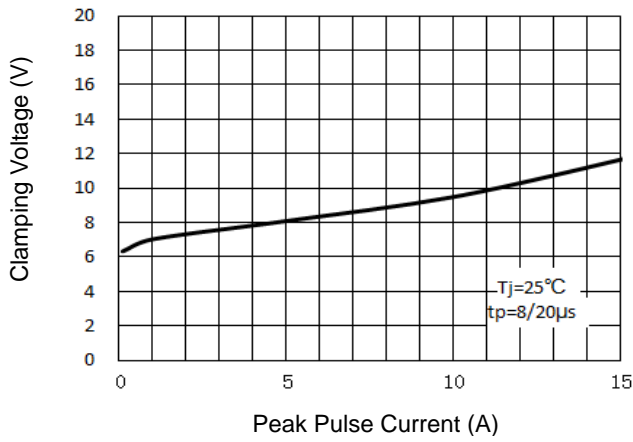


Fig 2. Junction Capacitance (3V3)

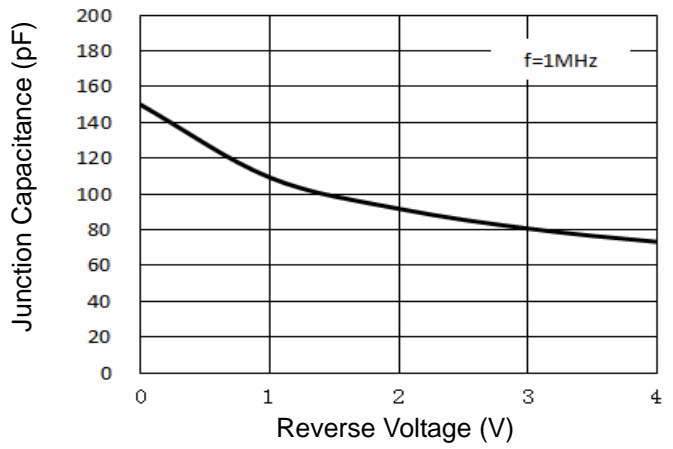


Fig 3. Clamping Voltage Curve (5V0)

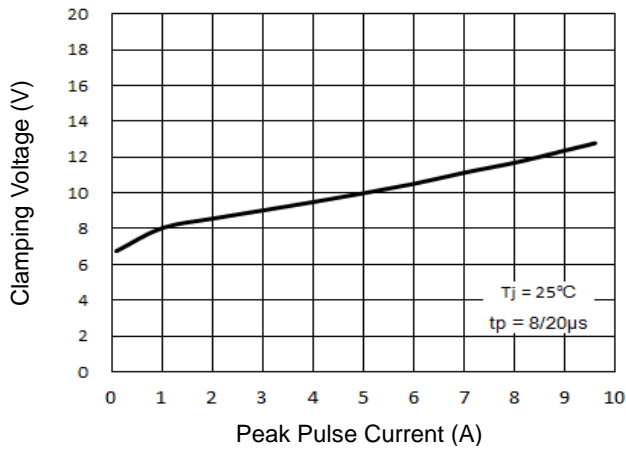


Fig 4. Junction Capacitance (5V0)

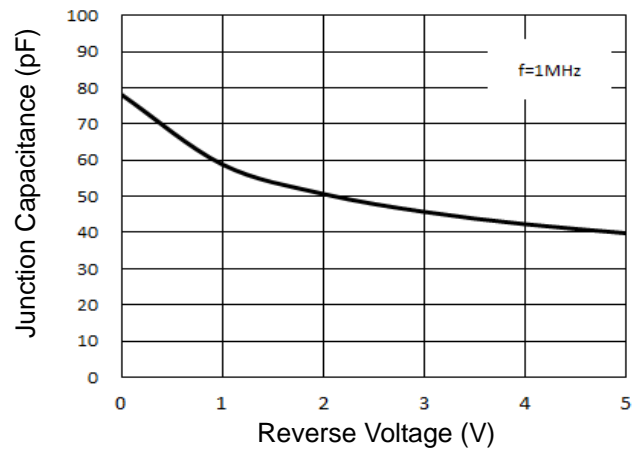
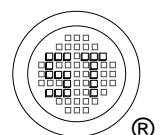
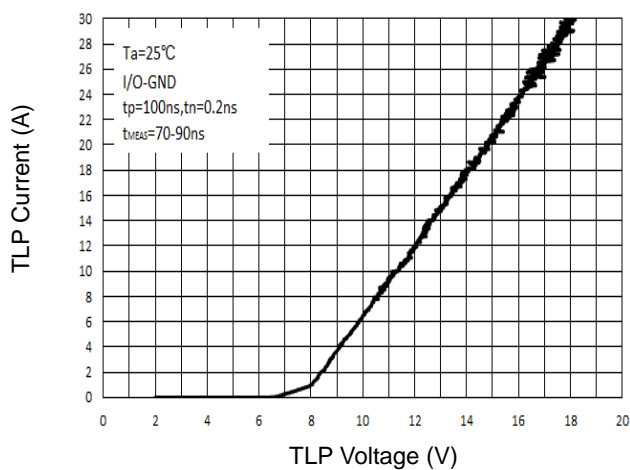


Fig 5. TLP Curve (5V0)



# ESD5Z Series

## Electrical characteristic curves

Fig 6. Clamping Voltage Curve (6V0&7V0)

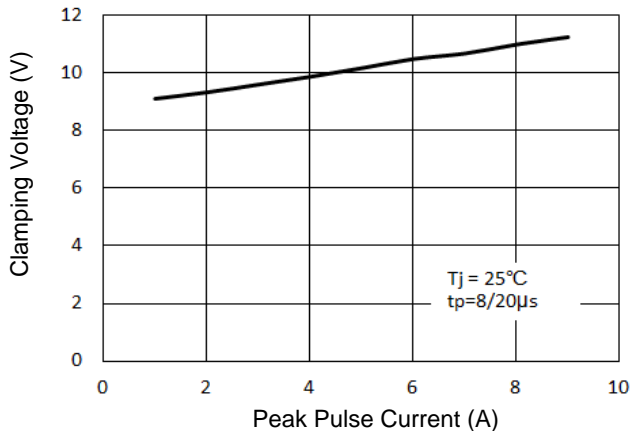


Fig 7. Junction Capacitance (6V0&7V0)

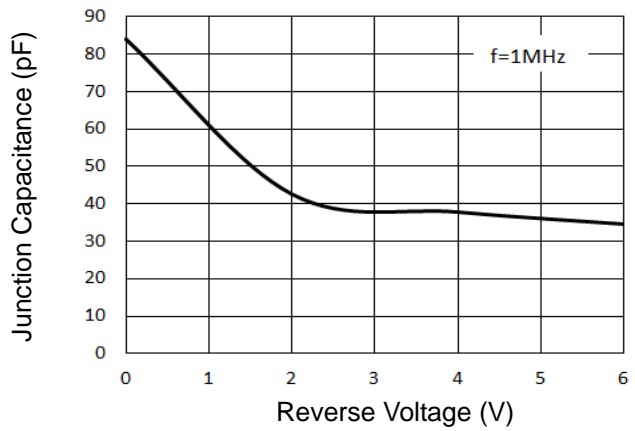


Fig 8. Clamping Voltage Curve (12V)

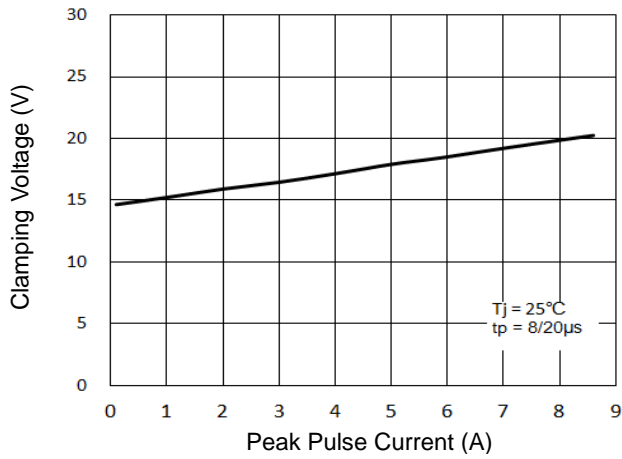


Fig 9. Junction Capacitance (12V)

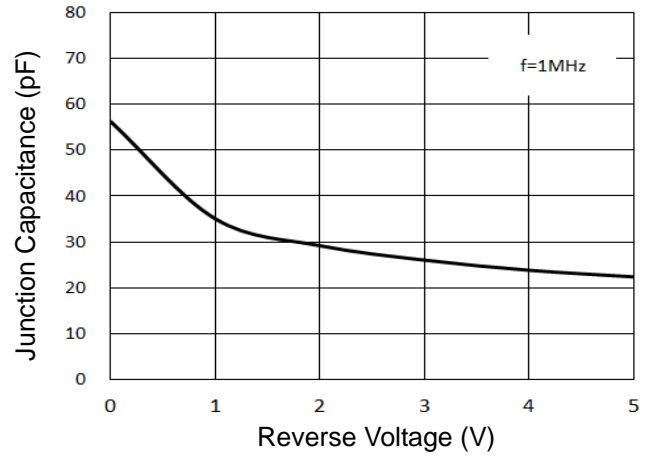


Fig 10. Pulse Waveform

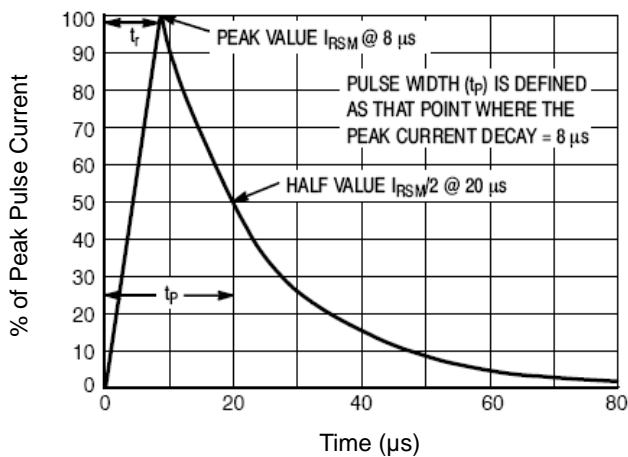
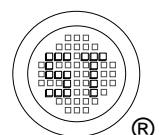
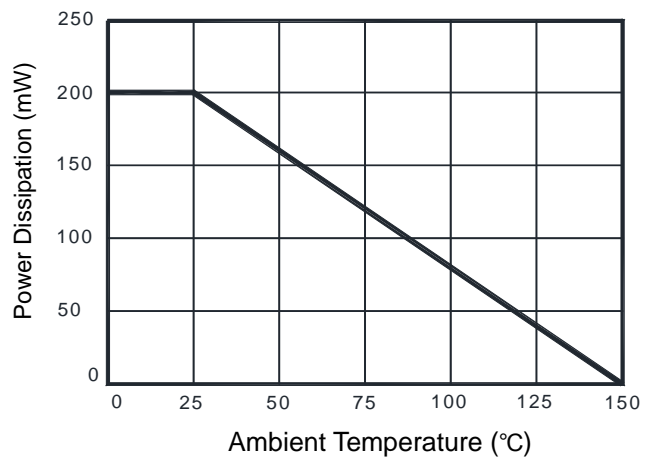


Fig 11. Power Dissipation vs. Ambient Temperature

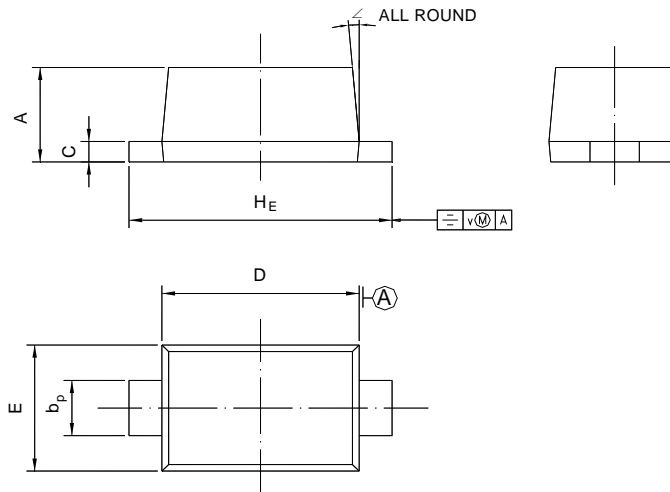


# ESD5Z Series

## PACKAGE OUTLINE

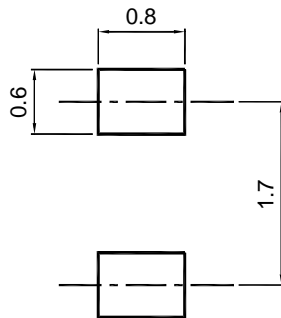
Plastic surface mounted package; 2 leads

SOD-523



UNIT	A	b <sub>p</sub>	C	D	E	H <sub>E</sub>	V	∠
mm	0.70 0.60	0.4 0.3	0.135 0.100	1.25 1.15	0.85 0.75	1.7 1.5	0.1	5°

### Recommended Soldering Footprint



### Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOD-523	8	4 ± 0.1	0.157 ± 0.004	178	7	4,000

### Marking information

" III " = Cathode line

" \*\* " = Part No.

Font type: Arial

