ESD5Z15V

ESD Protection Diode

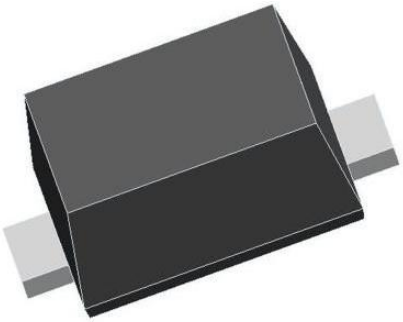
Features

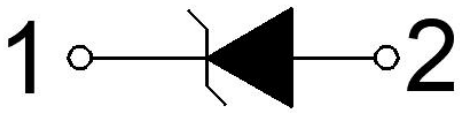
- Junction capacitance (Max value:80pF)
- Peak Pulse current (8/20μs) Max:12A
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- Low clamping voltage
- Low leakage current
- Working voltages:15V
- RoHS Compliant

Mechanical Characteristics

- Package: SOD-523
- Lead Finish:Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020

Appearance & Symbol



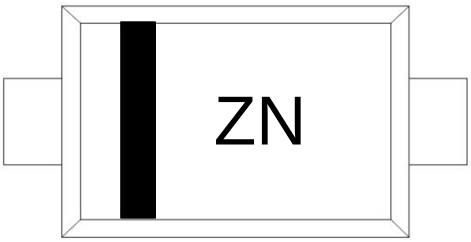


Uni-directional

Applications

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

Marking Information



ZN=Marking Code

Absolute Maximum Ratings (T=25ºC, RH=45%-75%, unless otherwise noted)

Parameters	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P_{PP}	385	W
Peak Pulse Current (8/20μs)	I_{PP}	12	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	KV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T=25ºC, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				15	V
Reverse Breakdown Voltage	V_{BR}	I_R = 1mA	15.5		19	V
Reverse Leakage Current	I_R	V_R = 15V			0.1	uA
Clamping voltage	V_C	I_{PP} = 5A,T_P=8/20us			25	V
Clamping voltage	V_C	I_{PP} = 12A,T_P=8/20us			32	V
Junction capacitance	C_J	V_R =0V,f =1MHz			80	pF

Typical Characteristics

FIG1：Power rating derating curve

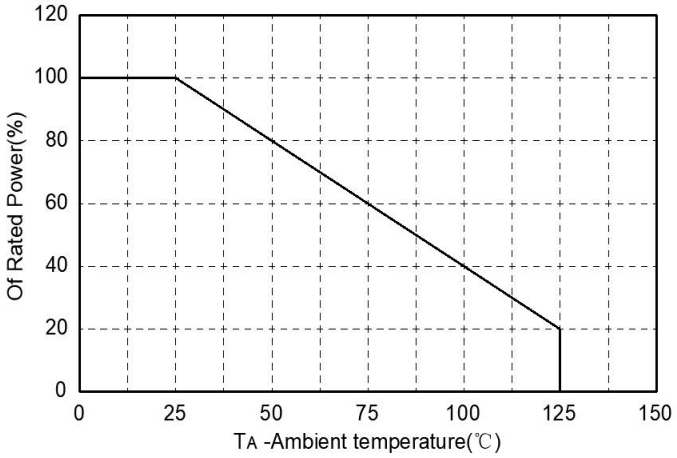


FIG2： pulse Waveform

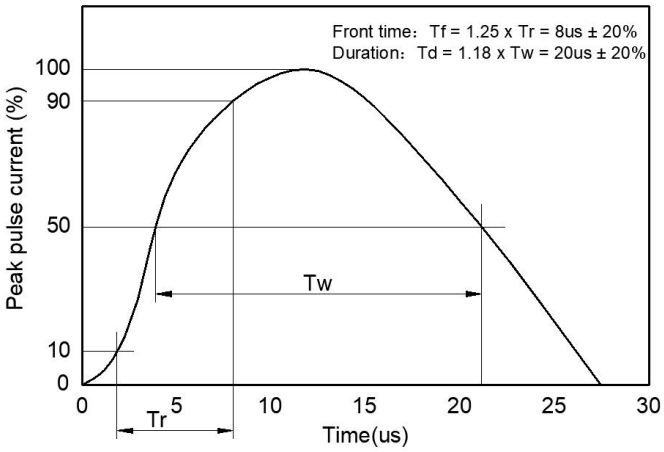


FIG3：Capacitance between teminals charateristics

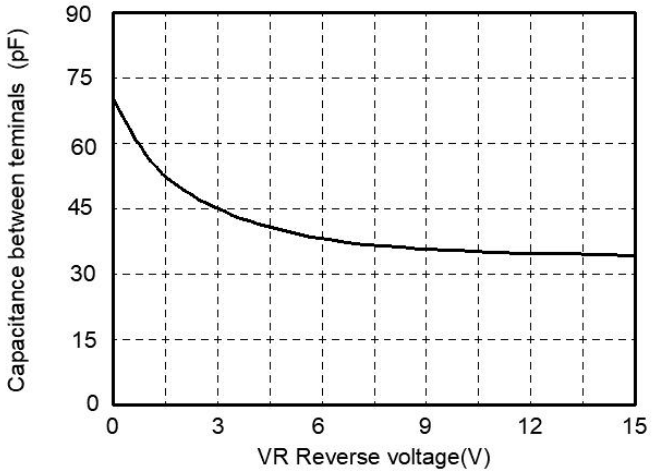
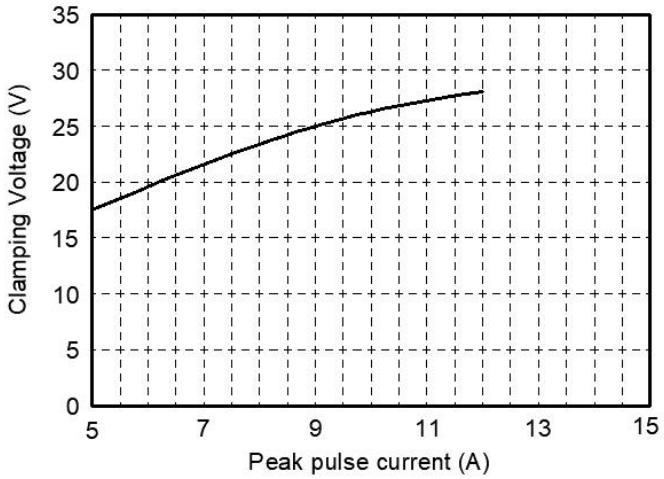
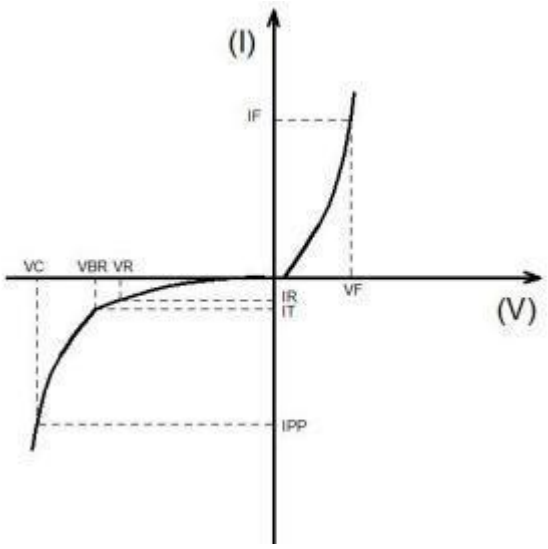


FIG4: Clamping Voltage vs. Peak Pulse Current



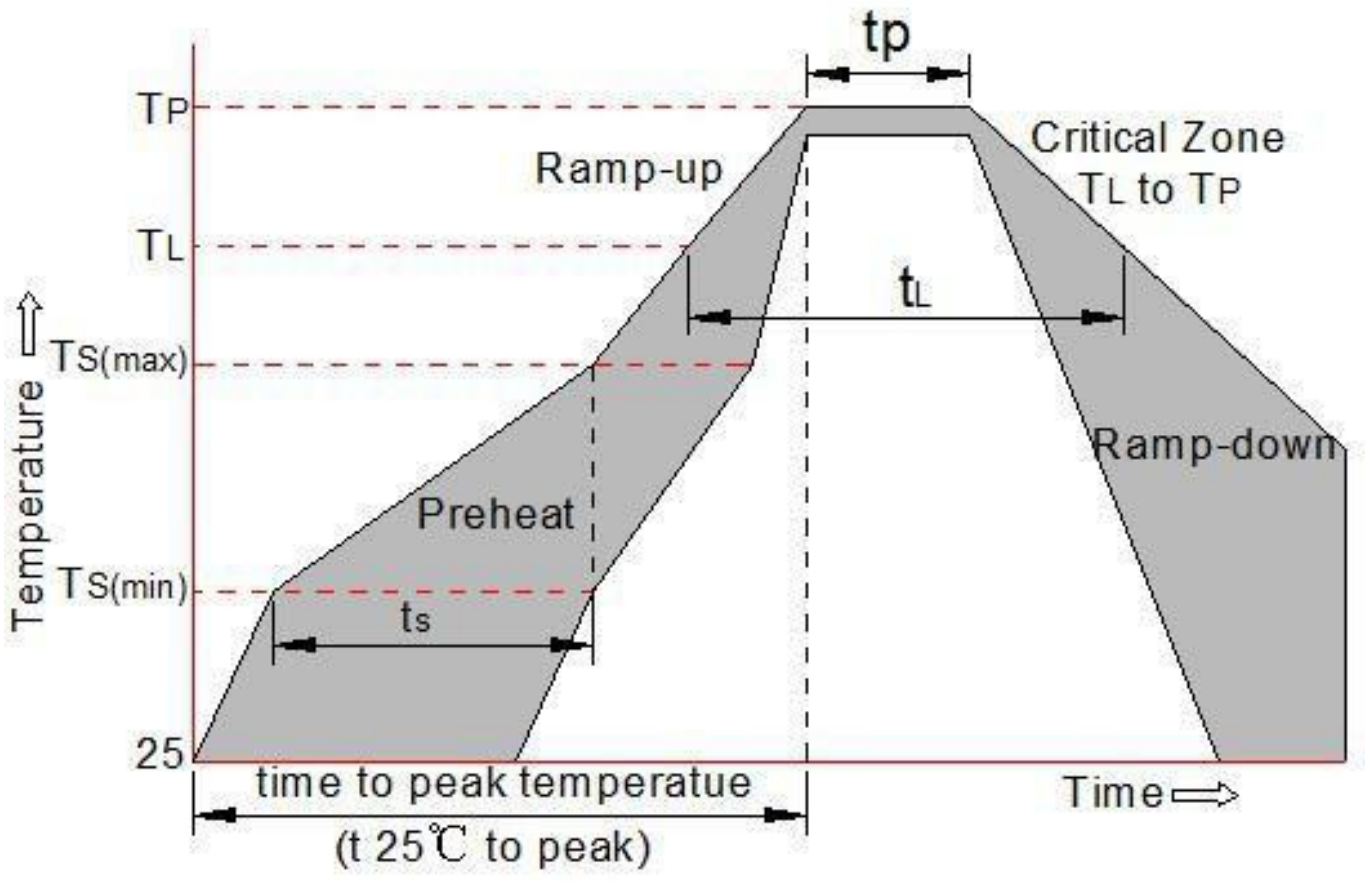
Ratings And V- I Characteristics Curves (T= 2 5 ° C, unless otherwise noted)



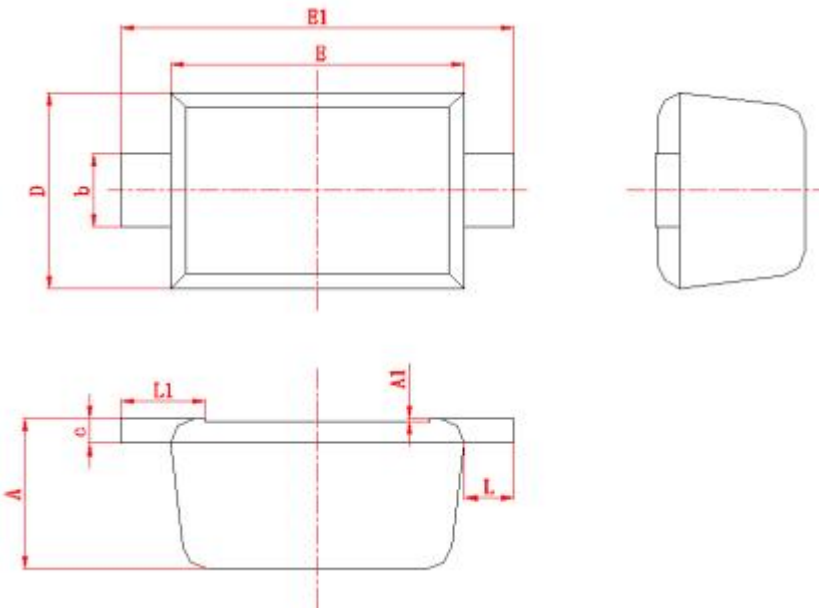
Symbol	Parameter
I_F	Mean Forward Current
V_F	Maximum Forward Voltage @ I_F
V_R	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_R
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}

Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

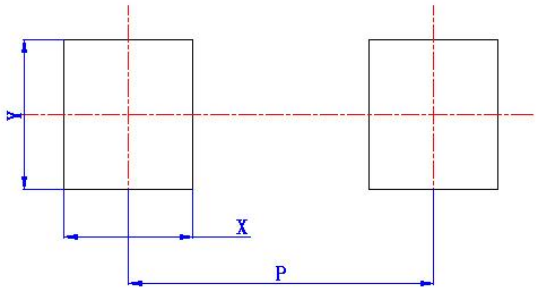


Package mechanical data



Symbol	Millimeters	
	Min.	Max.
A	0.50	0.70
A1	0	0.05
D	0.70	0.90
E	1.1	1.3
E1	1.5	1.7
b	0.25	0.35
c	0.08	0.15
L	0.12	0.28
L1	(0.3)	

Suggested Land Pattern



Symbol	Dimension in Millimeters
	Typ.
X	(0.6)
Y	(0.7)
P	(1.42)