



WEOS4-150/XXAS

Thyristor Surge Protector

Features

- Bi-directional crowbar transient voltage protection
- High surge capability
- High off-state impedance, Low leakage current
- Short-circuit failure mode
- Low on-state voltage



Main Application

WAYON's thyristor surge protector devices are designed to help protect sensitive telecommunication equipment from the hazards caused by lightning, power contact, and power induction. These devices enable equipment to comply with various regulatory requirements including GR 1089, ITU K.20, K.21 and K.45, IEC 60950, UL 60950, and TIA-968-A (formerly known as FCC Part 68).

Typical application including:

- Central office switching equipment, Analog and digital linecards (xDSL, T1/E1, ISDN...).
- Customer Premises Equipment (CPE) such as phones, fax machines, modems, POS terminals, PBX systems and caller ID adjunct boxes.
- Primary protection modules including Main Distribution Frames (MDF), building entrance equipment and station protection modules.
- Access network equipment such as remote terminals, line repeaters, multiplexers, cross-connects, WAN equipment, Network Interface Devices (NID).
- Data lines and security systems.
- CATV line amplifiers and power inserters.
- Sprinkler systems.

Absolute Maximum Ratings (TA =25°C)

Parameter	Symbol	Value	Unit
Non-repetitive peak impulse current 10/1000 μ s (Telcordia GR-1089-CORE)	I_{PPSM}	150	A
Operating Junction Temperature range	T_J	-40 to + 125	°C
Storage Temperature range	T_s	-55 to + 150	°C

Electrical Parameters (TA = 25°C)

Part Number	Marking code	V _{DRM}	I _{DRM}	V _{BO}	I _{BO}	V _T	I _T	C _O	I _H
		Max.	Max.	Max.	Max.	Max.	Max.	Typ.	Min.
		V	μA	V	mA	V	A	pF	mA
WEOS4-150/15AS	W02SD	15	5	25	800	4	2.2	110	30
WEOS4-150/25AS	W03SD	25	5	40	800	4	2.2	110	50
WEOS4-150/58AS	W06SD	58	5	77	800	4	2.2	100	50
WEOS4-150/65AS	W07SD	65	5	88	800	4	2.2	100	50
WEOS4-150/75AS	W09SD	75	5	98	800	4	2.2	90	50
WEOS4-150/90AS	W11SD	90	5	130	800	4	2.2	80	50
WEOS4-150/120AS	W14SD	120	5	160	800	4	2.2	80	50
WEOS4-150/140AS	W15SD	140	5	180	800	4	2.2	80	50
WEOS4-150/170AS	W18SD	170	5	220	800	4	2.2	60	50
WEOS4-150/190AS	W23SD	190	5	260	800	4	2.2	60	50
WEOS4-150/220AS	W26SD	220	5	300	800	4	2.2	60	50
WEOS4-150/270AS	W31SD	270	5	350	800	4	2.2	60	50
WEOS4-150/300AS	W35SD	320	5	400	800	4	2.2	60	50

V_{DRM}: Stand-off voltage, is measured at I_{DRM}.

I_{DRM}: Leakage current at V_{DRM}.

V_{BO}: Breakover voltage, is measured at 100V/μs.

I_{BO}: Breakover current.

V_T: On-state voltage.

I_T: On-state current.

C_O: Off-state capacitance.

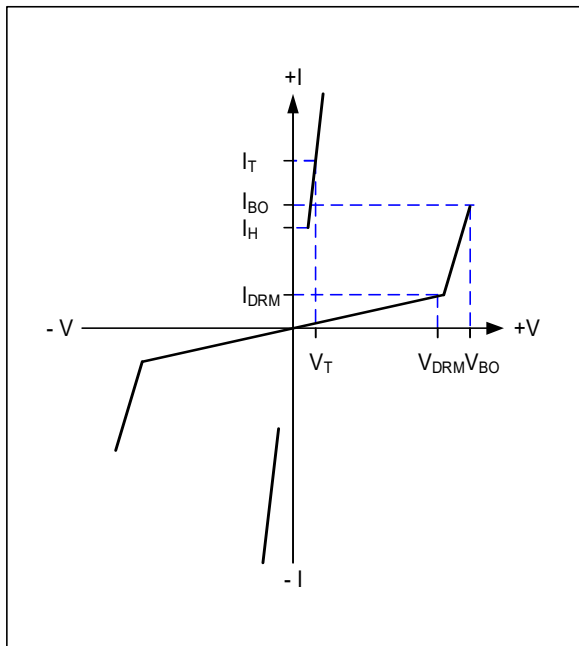
I_H: Holding current.

I_{PP}: Peak pulse current, is a repetitive surge rating and is guaranteed for the life of the product.

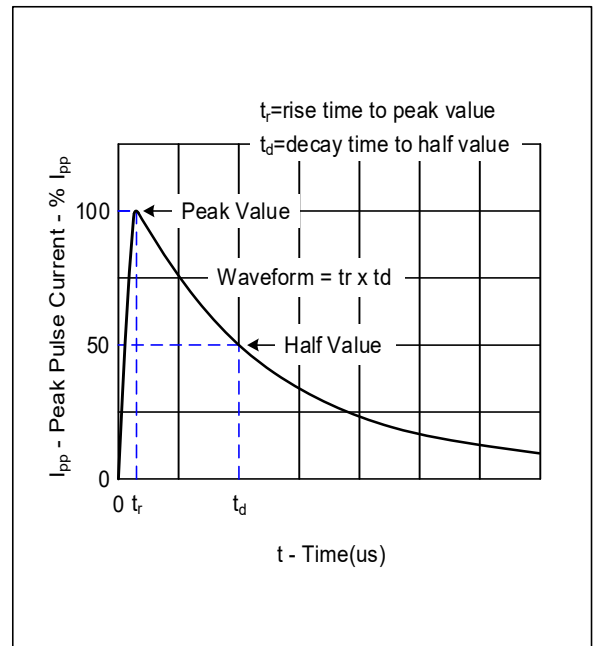
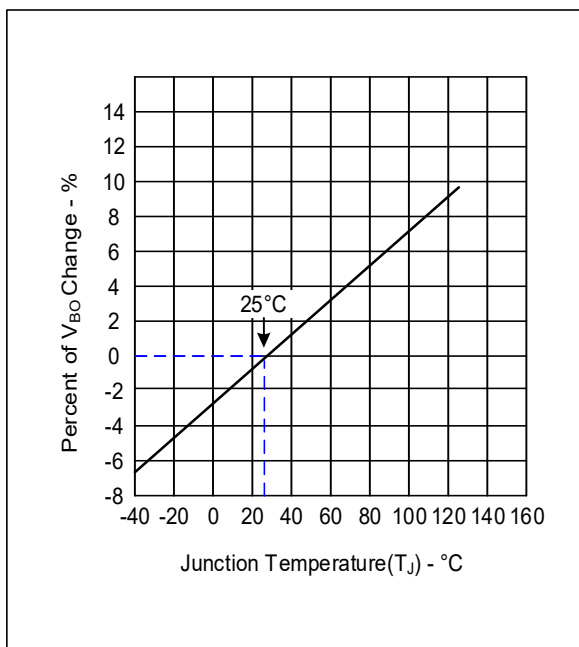
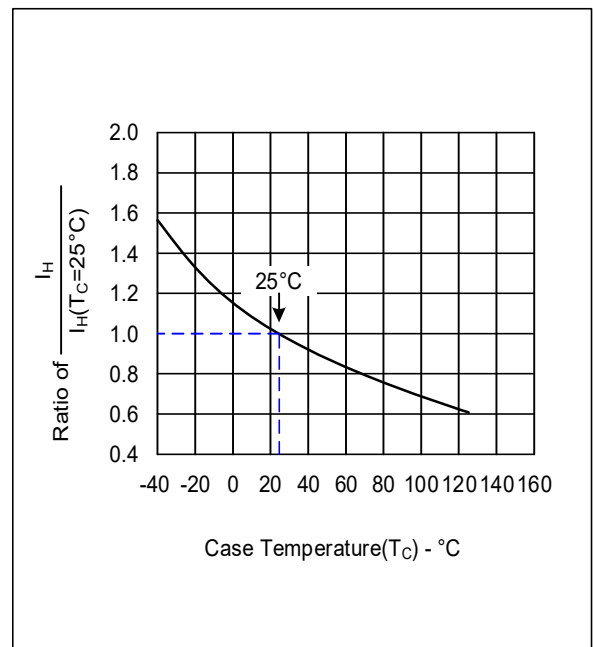
General Notes:

- All measurements are made at an ambient temperature of 25 °C. I_{PP} applies to -40 °C through +85 °C temperature range.
- WEOS4 devices are bi-directional. All electrical parameters and surge ratings apply to forward and reverse polarities.
- Special voltage (V_{BO} and V_{DRM}) and holding current (I_H) requirements are available up on request. Off-state capacitance is measured at 1 MHz with a 2 V bias.

Electrical Characteristics Curves



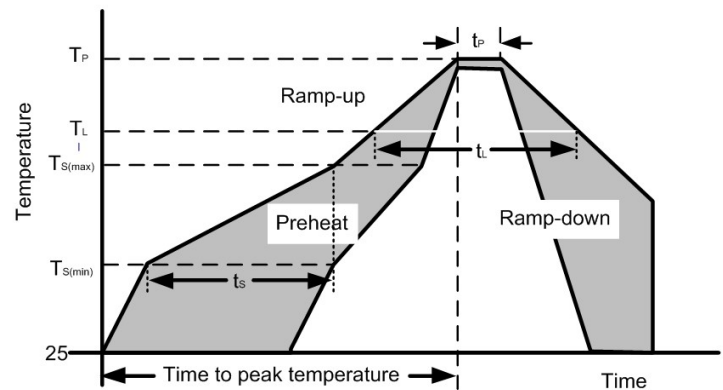
V - I Characteristics

 $t_r \times t_d$ Pulse WaveformNormalized V_{BO} Change versus Junction Temperature

Normalized DC Holding Current versus Case Temperature

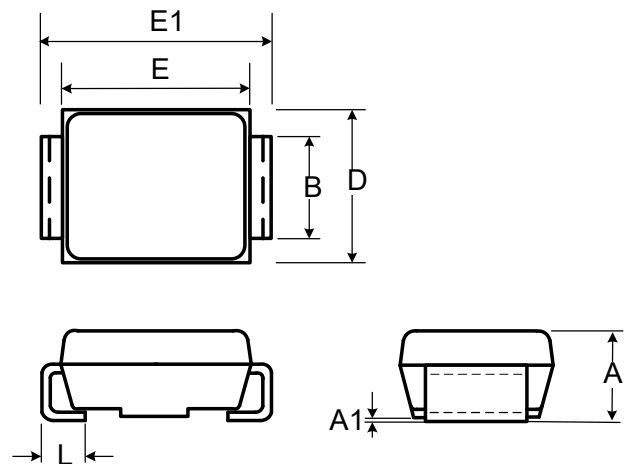
Soldering Parameters

Reflow Condition		
Pre Heat	Temperature Min ($T_{S(min)}$)	150°C
	Temperature Max ($T_{S(max)}$)	200°C
	Time (min to max) (t_s)	60-190 s
Average ramp up rate (Liquidus Temp) (T_L) to peak		3°C/s max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/s max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60-150 s
Peak Temperature (T_P)		260 ^{+0/-5} °C
Time within actual peak Temperature (t_p)		20-40 s
Ramp-down Rate		5°C/s max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		260°C



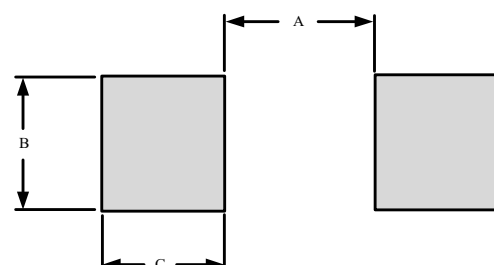
Product Dimensions

Ref. (mm)	Min.	Max.
A	2.130	2.600
A1	-	0.300
B	1.900	2.200
E	4.100	4.750
E1	5.210	5.590
D	3.300	3.940
L	0.760	1.520

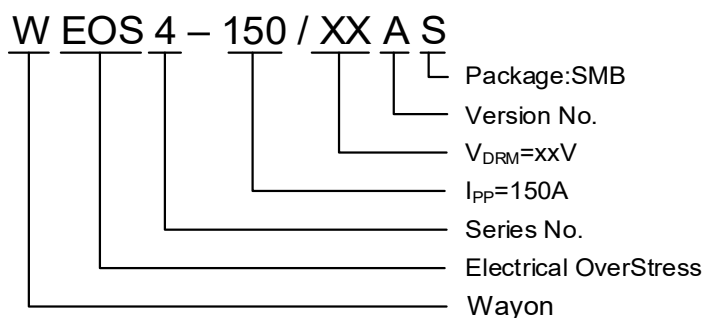


Recommended Solder Pad Layout

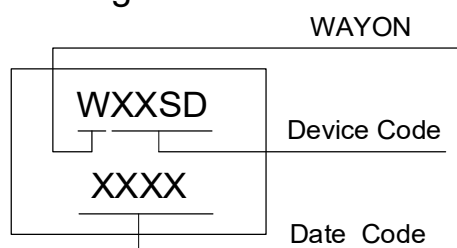
DIM(mm)	MILLIMETERS
A	2.74
B	2.26
C	2.16



Part Numbering System and Marking



Marking:



Package Information

Package Type	Description	Quantity (pcs)
SMB(DO-214AA)	Tape & Reel Pack	2500

Contact Information

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The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.