

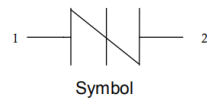
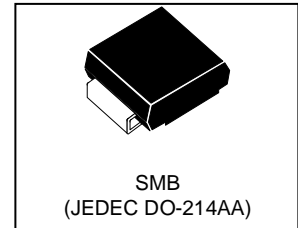


# WEOS4-80/XXAS

## 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
- RoHS & HF compliant
- MSL: Level 1



### 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 $\mu$ s (Telcordia GR-1089-CORE)	$I_{PPSM}$	80	A
Non-repetitive peak impulse Voltage 10/700 $\mu$ s (ITU-T K.20, K.21 & K.44, K.45)	$V_{PPSM}$	4000	V
Operating Junction Temperature range	$T_J$	-40 to + 125	°C
Storage Temperature range	$T_S$	-55 to + 150	°C

Electrical Parameters (T<sub>A</sub> =25°C)

Part Number	Marking code	V <sub>DRM</sub>	I <sub>DRM</sub>	V <sub>BO</sub>	I <sub>BO</sub>	V <sub>T</sub>	I <sub>T</sub>	C <sub>o</sub>	I <sub>H</sub>
		Max.	Max.	Max.	Max.	Max.	Max.	Typ.	Min.
		V	μA	V	mA	V	A	pF	mA
WEOS4-80/25AS	W03SB	25	5	40	800	4	2.2	85	10
WEOS4-80/58AS	W06SB	58	5	77	800	4	2.2	50	120
WEOS4-80/65AS	W07SB	65	5	88	800	4	2.2	50	120
WEOS4-80/75AS	W09SB	75	5	98	800	4	2.2	50	120
WEOS4-80/90AS	W11SB	90	5	130	800	4	2.2	40	120
WEOS4-80/100AS	W12SB	100	5	130	800	4	2.2	40	120
WEOS4-80/120AS	W14SB	120	5	160	800	4	2.2	40	120
WEOS4-80/140AS	W15SB	140	5	180	800	4	2.2	40	120
WEOS4-80/170AS	W18SB	170	5	220	800	4	2.2	35	120
WEOS4-80/180AS	W20SB	180	5	220	800	4	2.2	35	120
WEOS4-80/190AS	W23SB	190	5	260	800	4	2.2	35	120
WEOS4-80/220AS	W26SB	220	5	300	800	4	2.2	35	120
WEOS4-80/230AS	W28SB	230	5	290	800	4	2.2	35	120
WEOS4-80/270AS	W31SB	270	5	350	800	4	2.2	35	120
WEOS4-80/300AS	W35SB	320	5	400	800	4	2.2	35	120
WEOS4-80/350AS	W36SB	350	5	460	800	4	2.2	40	120

**V<sub>DRM</sub>**: Stand-off voltage.

**I<sub>DRM</sub>**: Leakage current at V<sub>DRM</sub>.

**V<sub>BO</sub>**: Breakover voltage, is measured at 100V/μs.

**I<sub>BO</sub>**: Breakover current.

**V<sub>T</sub>**: On-state voltage.

**I<sub>T</sub>**: On-state current.

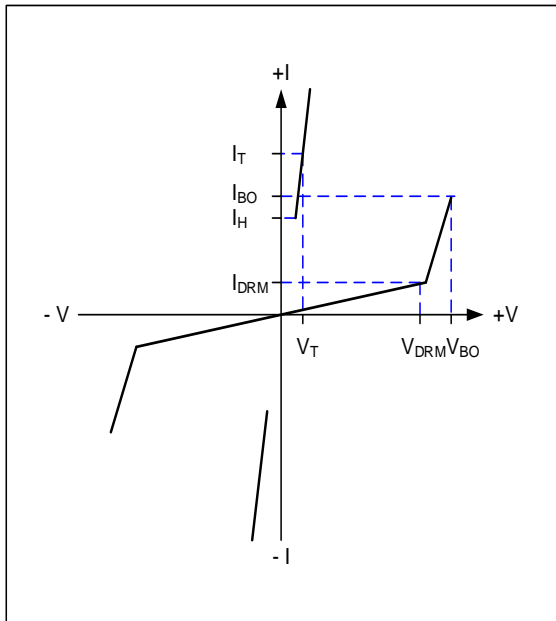
**C<sub>o</sub>**: Off-state capacitance.

**I<sub>H</sub>**: Holding current.

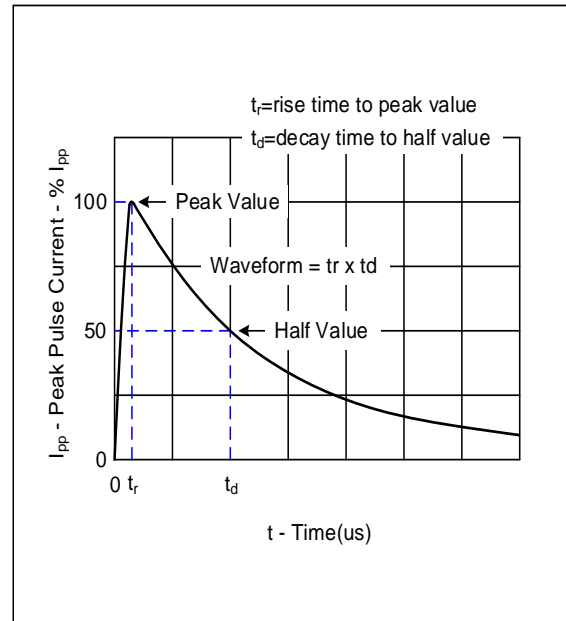
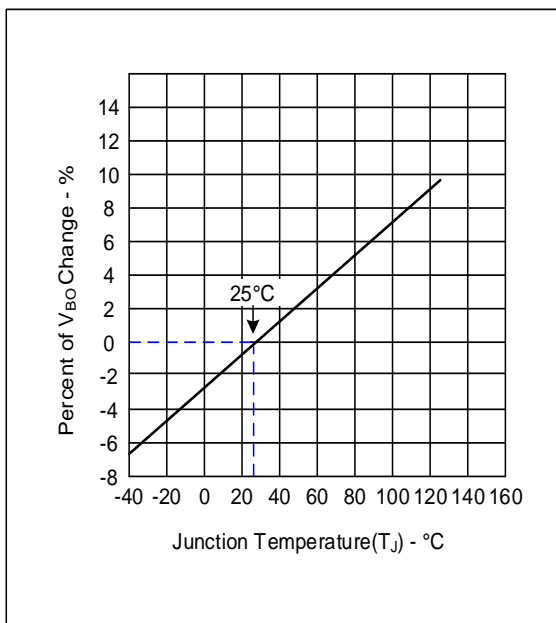
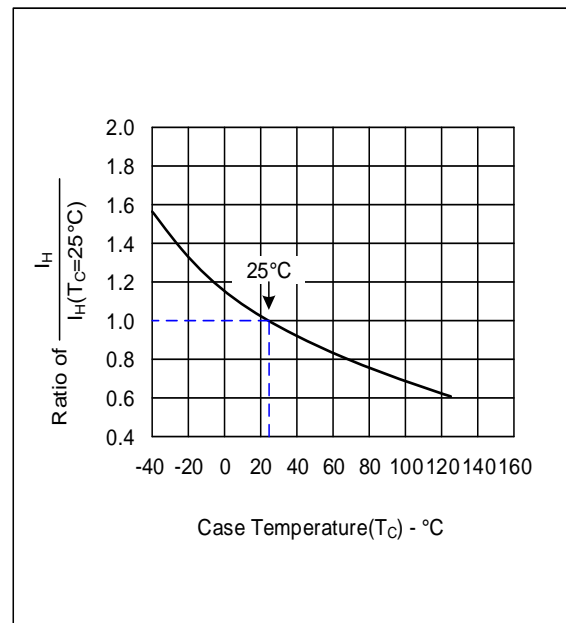
#### General Notes:

- All measurements are made at an ambient temperature of 25 °C. I<sub>PP</sub> 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<sub>BO</sub> and V<sub>DRM</sub>) and holding current (I<sub>H</sub>) 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

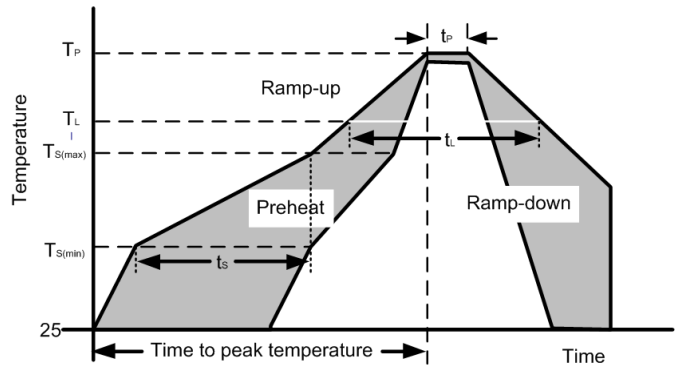
 $t_r \times t_d$  Pulse WaveformNormalized  $V_{BO}$  Change versus Junction Temperature

Normalized DC Holding Current versus Case Temperature

Note: The above typical parameters or typical characteristics are only indicative and do not make specific guarantees. If detailed values are required, additional communication and provision are required.

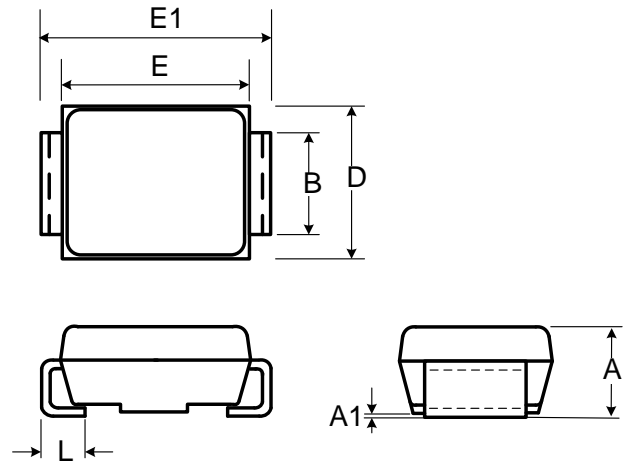
## Soldering Parameters

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 <sup>+0/-5</sup> °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



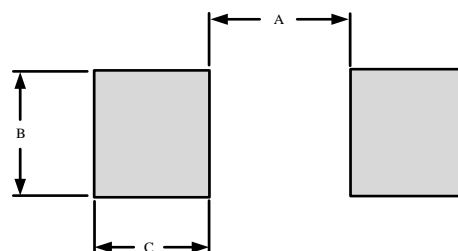
## Product Dimensions

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

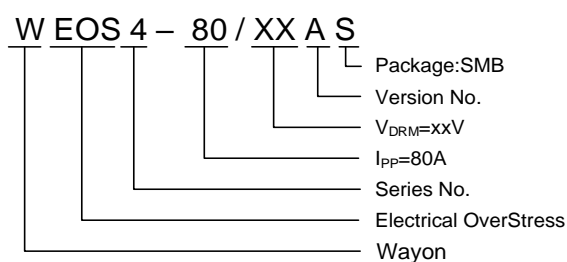


## Recommended Solder Pad Layout

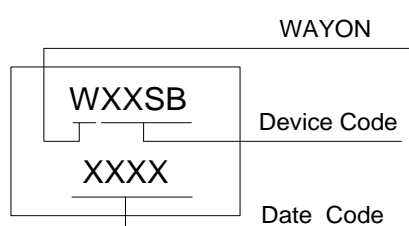
DIM(mm)	MILLIMETERS
A	2.74
B	2.26
C	2.16



## Part Numbering System and Marking



### Marking:

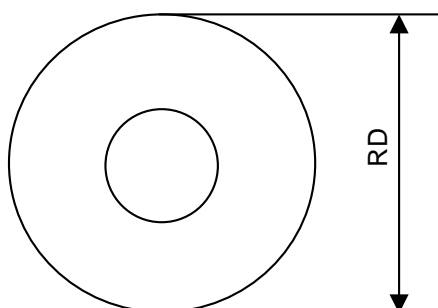


## Package Information

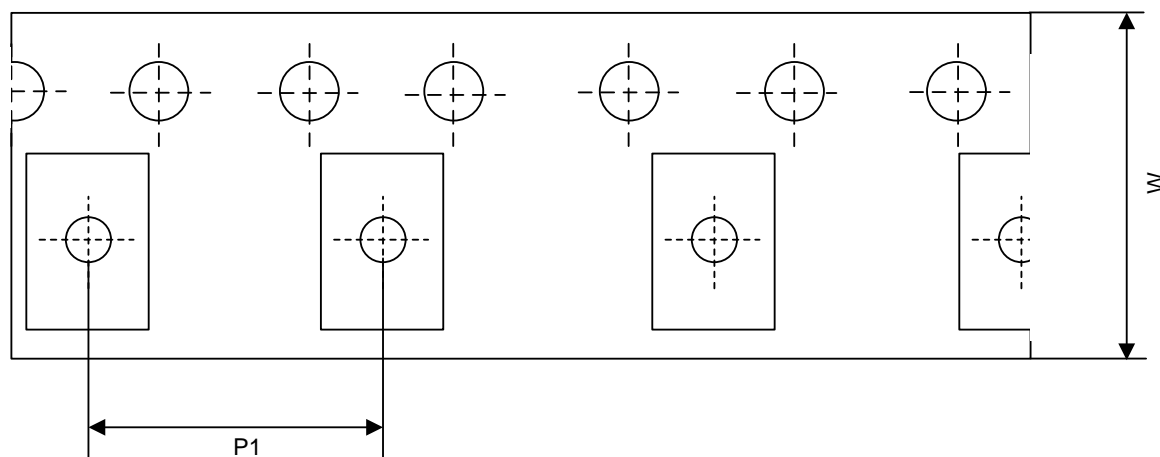
Package Type	Description	Quantity (pcs)
SMB(DO-214AA)	Tape & Reel Pack	2500

## Tape and Reel Information

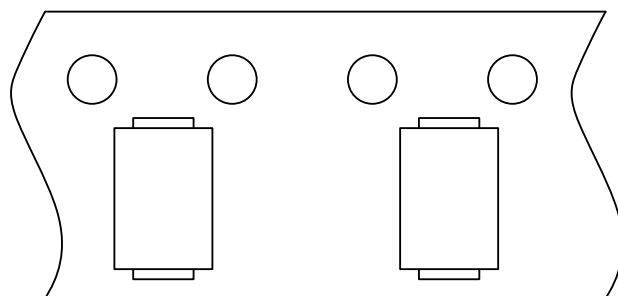
### Reel Dimensions



Tape Dimensions



Quadrant Assignments for PIN1 Orientation in tape



User Direction of Feed

Top View

RD	Reel Dimensions	13 inch
W	Overall width of the carrier tape	12 mm
P1	Pitch between successive cavity centers	8 mm

## Contact Information

No.1001, Shiwan(7) Road, Pudong District, Shanghai, P.R.China.201207

Tel: +86-21-50310888 Fax: 86-21-50757680 Email: market@way-on.com

WAYON website: <http://www.way-on.com>

For additional information, please contact your local Sales Representative.

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## Product Specification Statement

The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

WAYON strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, WAYON cannot guarantee that the information provided in the product specification is entirely accurate and error-free. WAYON shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications. WAYON reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with WAYON to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult WAYON in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. WAYON shall assume no responsibility for any consequences resulting from such usage.

Users should also comply with relevant laws, regulations, policies, and standards when using the product specification. Users are responsible for the risks and liabilities arising from the use of the product specification and must ensure that it is not used for illegal purposes. Additionally, users should respect the intellectual property rights related to the product specification and refrain from infringing upon any third-party legal rights. WAYON shall assume no responsibility for any disputes or controversies arising from the above-mentioned issues in any form.