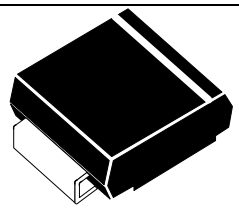
WZSMB5ZxxA

Surface Mount Silicon Zener Diodes

Features

- Built-in Strain relief
- Low inductance
- High peak reverse power dissipation
- Low reverse leakage
- For use in stabilizing and clipping with high Power rating
- MSL: Level 1



SMB
(JEDEC DO-214AA)

Mechanical Characteristics

- JEDEC DO-214AA package
- Molding compound flammability rating: UL 94V-0
- Marking: see marking code
- Packaging: Tape and Reel
- RoHS & HF Compliant

Absolute Maximum Rating

Rating	Symbol	Value	Units
DC Power dissipation at T_L=75°C	P_D	5.0	W
Maximum forward voltage at I_F=200mA	V_F	1.2	V
Junction temperature range	T_J	-55 to +150	℃
Storage temperature range	T_{STG}	-55 to +150	℃

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Electrical Characteristics(T_A=25°C unless otherwise noted)

Part Number	Marking code	Nominal Zener Voltage V_Z@I_{ZT}			I_{ZT}(mA)	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		AVG	MIN	MAX		Z_{ZT} MAX.(Ω) @I_{ZT}	Z_{ZK} MAX.(Ω) @I_{ZK}	I_{ZK}(mA)	I_R(μA) @V_R	V_R(V)	I_{ZM}(mA)
WZSMB5Z3.3A	5H0	3.3	3.14	3.47	380	3.0	400	1.00	300	1.0	1437.0
WZSMB5Z3.6A	5H1	3.6	3.42	3.78	350.0	2.5	500	1.00	150	1.0	1317.0
WZSMB5Z3.9A	5H2	3.9	3.71	4.10	320.0	2.0	500	1.00	50	1.0	1216.0
WZSMB5Z4.3A	5H3	4.3	4.09	4.52	290.0	2.0	500	1.00	10	1.0	1103.0
WZSMB5Z4.7A	5H4	4.7	4.47	4.94	260.0	2.0	450	1.00	5	1.0	1009.0
WZSMB5Z5.1A	5H5	5.1	4.85	5.36	240.0	1.5	400	1.00	1.0	1.0	930.0
WZSMB5Z5.6A	5H6	5.6	5.32	5.88	220.0	1.0	400	1.00	1.0	2.0	846.0
WZSMB5Z6.0A	5H7	6.0	5.70	6.30	200.0	1.0	300	1.00	1.0	3.0	790.0
WZSMB5Z6.2A	5A0	6.2	5.89	6.51	200.0	1.0	200	1.00	1.0	3.0	765.0
WZSMB5Z6.8A	5A1	6.8	6.46	7.14	175.0	1.0	200	1.00	10.0	5.2	700.0
WZSMB5Z7.5A	5A2	7.5	7.13	7.88	175.0	1.5	200	1.00	10.0	5.7	630.0
WZSMB5Z8.2A	5A3	8.2	7.79	8.61	150.0	1.5	200	1.00	10.0	6.2	580.0
WZSMB5Z8.7A	5A4	8.7	8.27	9.14	150.0	2.0	200	1.00	10.0	6.6	545.0
WZSMB5Z9.1A	5A5	9.1	8.65	9.56	150.0	2.0	150	1.00	7.5	6.9	520.0
WZSMB5Z10A	5B0	10.0	9.50	10.50	125.0	2.0	125	1.00	5	7.6	475.0
WZSMB5Z11A	5B1	11.0	10.45	11.55	125.0	2.5	125	1.00	5	8.4	430.0
WZSMB5Z12A	5B2	12.0	11.40	12.60	100.0	2.5	125	1.00	2	9.1	395.0
WZSMB5Z13A	5B3	13.0	12.35	13.65	100.0	2.5	100	1.00	1	9.9	365.0
WZSMB5Z14A	5B4	14.0	13.30	14.70	100.0	2.5	75	1.00	1	10.6	340.0
WZSMB5Z15A	5B5	15.0	14.25	15.75	75.0	2.5	75	1.00	1	11.5	315.0
WZSMB5Z16A	5B6	16.0	15.20	16.80	75.0	2.5	75	1.00	1	12.2	295.0
WZSMB5Z17A	5B7	17.0	16.15	17.85	70.0	2.5	75	1.00	0.5	12.9	280.0
WZSMB5Z18A	5B8	18.0	17.10	18.90	65.0	2.5	75	1.00	0.5	13.7	265.0
WZSMB5Z19A	5B9	19.0	18.05	19.95	65.0	3.0	75	1.00	0.5	14.4	250.0
WZSMB5Z20A	5C0	20.0	19.00	21.00	65.0	3.0	75	1.00	0.5	15.2	237.0
WZSMB5Z22A	5C2	22.0	20.90	23.10	50.0	3.5	75	1.00	0.5	16.7	216.0
WZSMB5Z24A	5C4	24.0	22.80	25.20	50.0	3.5	100	1.00	0.5	18.2	198.0
WZSMB5Z25A	5C5	25.0	23.75	26.25	50.0	4.0	110	1.00	0.5	19.0	190.0
WZSMB5Z27A	5C7	27.0	25.65	28.35	50.0	5.0	120	1.00	0.5	20.6	176.0
WZSMB5Z28A	5C8	28.0	26.60	29.40	50.0	6.0	130	1.00	0.5	21.2	170.0
WZSMB5Z30A	5D0	30.0	28.50	31.50	40.0	8.0	140	1.00	0.5	22.8	158.0
WZSMB5Z33A	5D3	33.0	31.35	34.65	40.0	10.0	150	1.00	0.5	25.1	144.0
WZSMB5Z36A	5D6	36.0	34.20	37.80	30.0	11.0	160	1.00	0.5	27.4	132.0
WZSMB5Z39A	5D9	39.0	37.05	40.95	30.0	14.0	170	1.00	0.5	29.7	122.0
WZSMB5Z43A	5E3	43.0	40.85	45.15	30.0	20.0	190	1.00	0.5	32.7	110.0
WZSMB5Z47A	5E7	47.0	44.65	49.35	25.0	25.0	210	1.00	0.5	35.8	100.0
WZSMB5Z51A	5F1	51.0	48.45	53.55	25.0	27.0	230	1.00	0.5	38.8	93.0
WZSMB5Z56A	5F6	56.0	53.20	58.80	20.0	35.0	280	1.00	0.5	42.6	86.0
WZSMB5Z60A	5G0	60.0	57.00	63.00	20.0	40.0	350	1.00	0.5	42.5	79.0
WZSMB5Z62A	5G2	62.0	58.90	65.10	20.0	42.0	400	1.00	0.5	47.1	76.0
WZSMB5Z68A	5G8	68.0	64.60	71.40	20.0	44.0	500	1.00	0.5	51.7	70.0
WZSMB5Z75A	5H5	75.0	71.25	78.75	20.0	45.0	620	1.00	0.5	56.0	63.0
WZSMB5Z82A	5J2	82.0	77.90	86.10	15.0	65.0	720	1.00	0.5	62.2	58.0
WZSMB5Z87A	5J7	87.0	82.65	91.35	15.0	75.0	760	1.00	0.5	66.0	54.5

WZSMB5Z91A	5K1	91.0	86.45	95.55	15.0	75.0	760	1.00	0.5	69.2	52.5
WZSMB5Z100A	5L0	100.0	95.00	105.00	12.0	90.0	800	1.00	0.5	76.0	47.5
WZSMB5Z110A	5L1	110.0	104.50	115.50	12.0	125.0	1000	1.00	0.5	83.6	43.0
WZSMB5Z120A	5L2	120.0	114.00	126.00	10.0	170.0	1150	1.00	0.5	91.2	39.5
WZSMB5Z130A	5L3	130.0	123.50	136.50	10.0	190.0	1250	1.00	0.5	98.8	36.6
WZSMB5Z140A	5L4	140.0	133.00	147.00	8.0	230.0	1500	1.00	0.5	106.0	34.0
WZSMB5Z150A	5L5	150.0	142.50	157.50	8.0	330.0	1500	1.00	0.5	114.0	31.6
WZSMB5Z160A	5L6	160.0	152.00	168.00	8.0	350.0	1650	1.00	0.5	122.0	29.4
WZSMB5Z170A	5L7	170.0	161.50	178.50	8.0	380.0	1750	1.00	0.5	129.0	28.0
WZSMB5Z180A	5L8	180.0	171.00	189.00	5.0	430.0	1750	1.00	0.5	137.0	26.4
WZSMB5Z190A	5L9	190.0	180.50	199.50	5.0	450.0	1850	1.00	0.5	144.0	25.0
WZSMB5Z200A	5M0	200.0	190.00	210.00	5.0	480.0	1850	1.00	0.5	152.0	23.6

Typical Characteristics

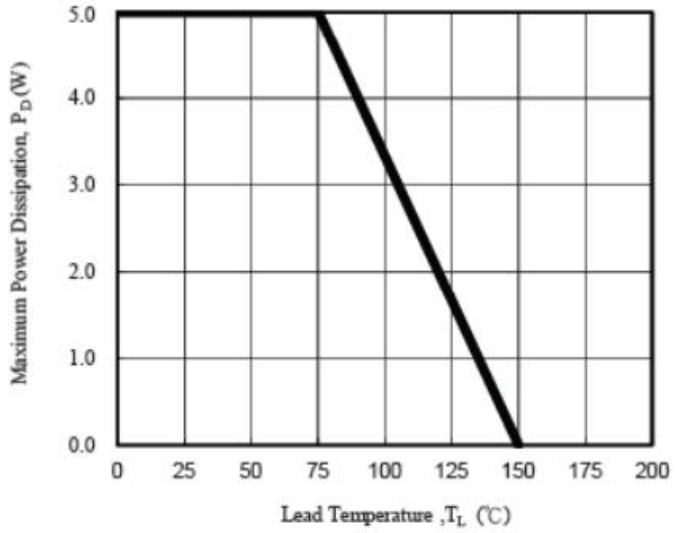


Fig. 1 - Power Temperature Derating Curve

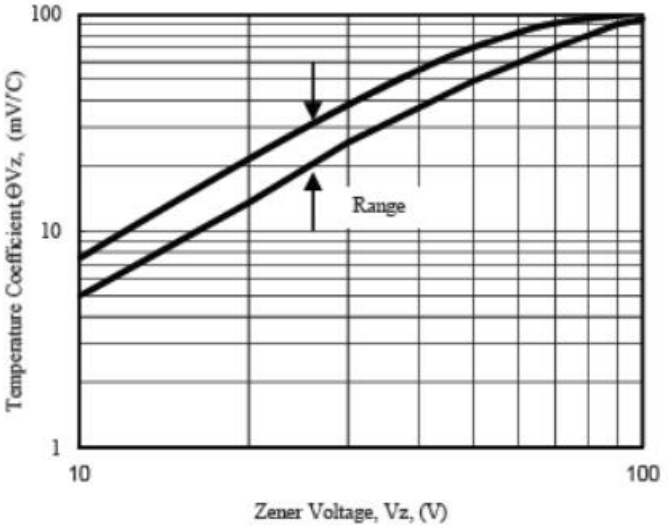


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

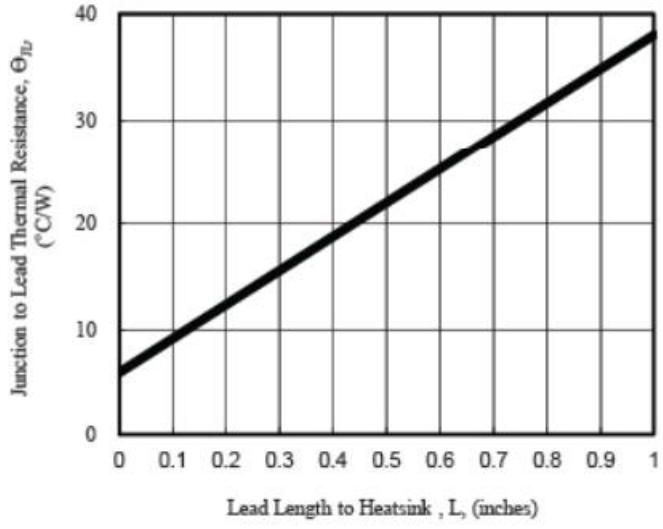


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

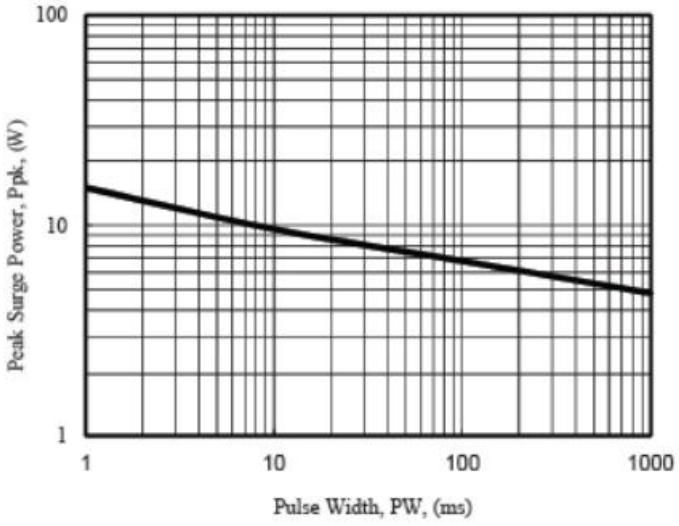


Fig. 4 - Maximum Surge Power

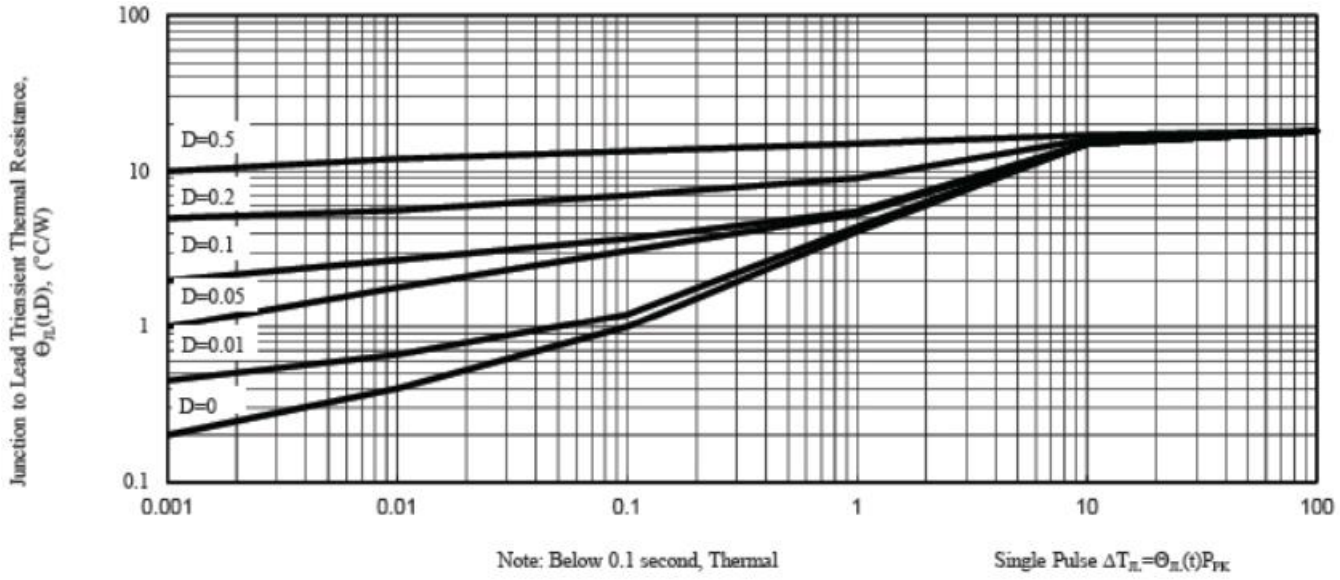
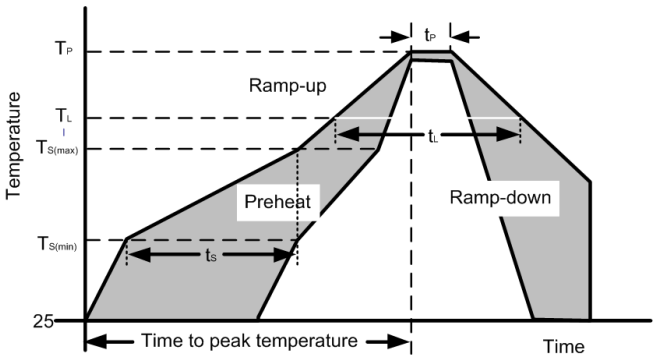


Fig. 5 - Typical Thermal Response L, Lead Length=3/8inch

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.

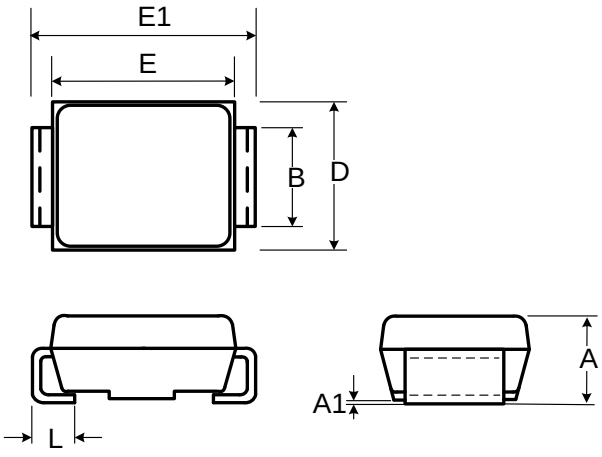
Recommended Soldering Parameters

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
Ts(max) to TL - 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

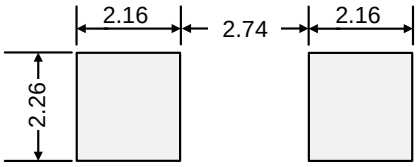


Outline Drawing – SMB(DO-214AA)

Ref.（mm）	Millimeters	
	Min.	Max.
A	2.05	2.60
A1	-	0.30
B	1.80	2.20
E	4.05	4.75
E1	5.08	5.59
D	3.30	3.94
L	0.76	1.52

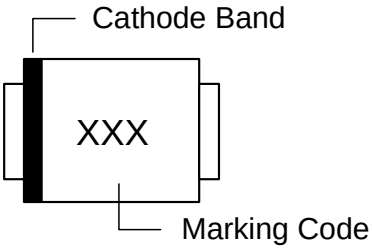


Recommended Solder Pad Layout



Dimensions in mm

Marking Code



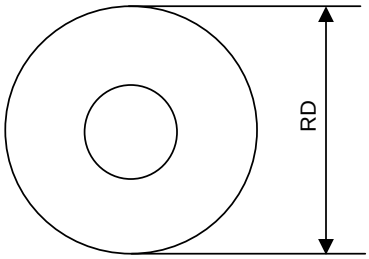
Package Information

Package Type	Description	Quantity（pcs）
SMB(DO-214AA)	Tape & Reel -12mm/13″ tape	3000

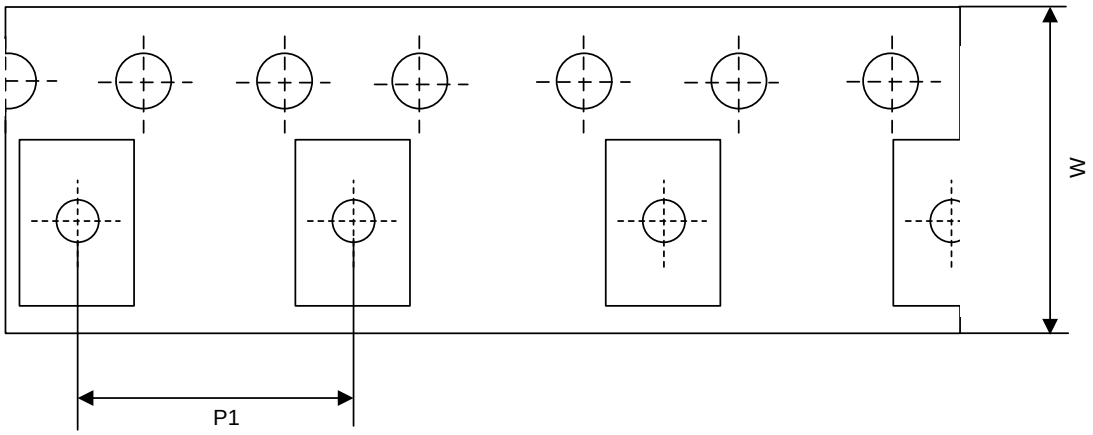
Tape and Reel Information

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

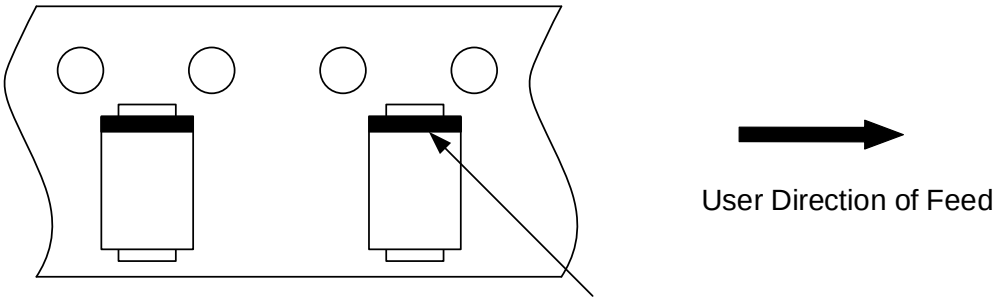
Reel Dimensions



Tape Dimensions



Quadrant Assignments for PIN1 Orientation in tape



Top View

Uni-directional products only

Contact Information

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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.