

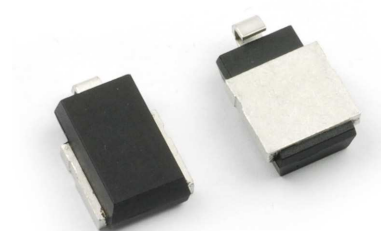
TVS Diode: SM5S Series

SMD Type 3600 W



■ Features

1. AEC-Q101 qualified
2. 3600W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle): 0.01%
3. High surge capability
4. Low leakage current
5. Low forward voltage drop
6. Excellent clamping capability
7. Very fast response time
8. Halogen free and RoHS compliant
9. Meet ISO7637-2 surge specification



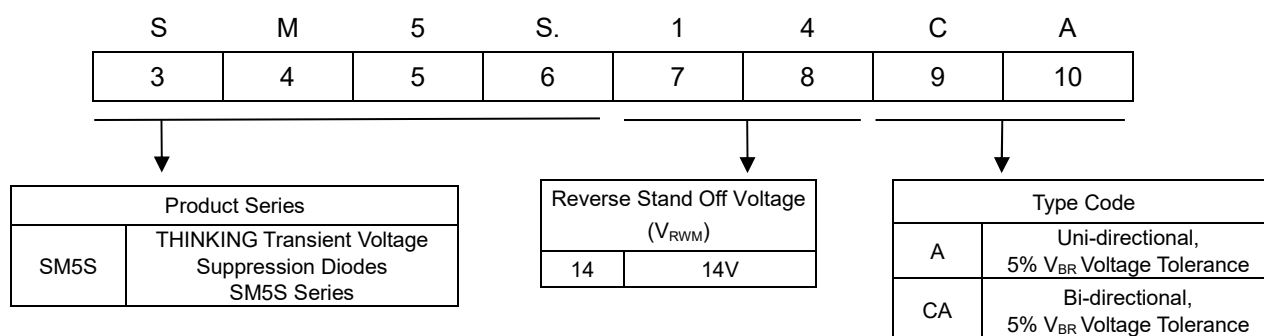
■ Recommended Applications

1. Telecommunication
2. Computer
3. Industrial device
4. Consumer electronic device
5. Automotive

■ Mechanical Data

1. Case: Molded plastic, DO-218AB
2. Epoxy: UL 94V-0 rate flame retardant
3. Terminals: Solderable per MIL-STD-750, method 2026
4. Polarity: Heatsink is anode

■ Part Number Code

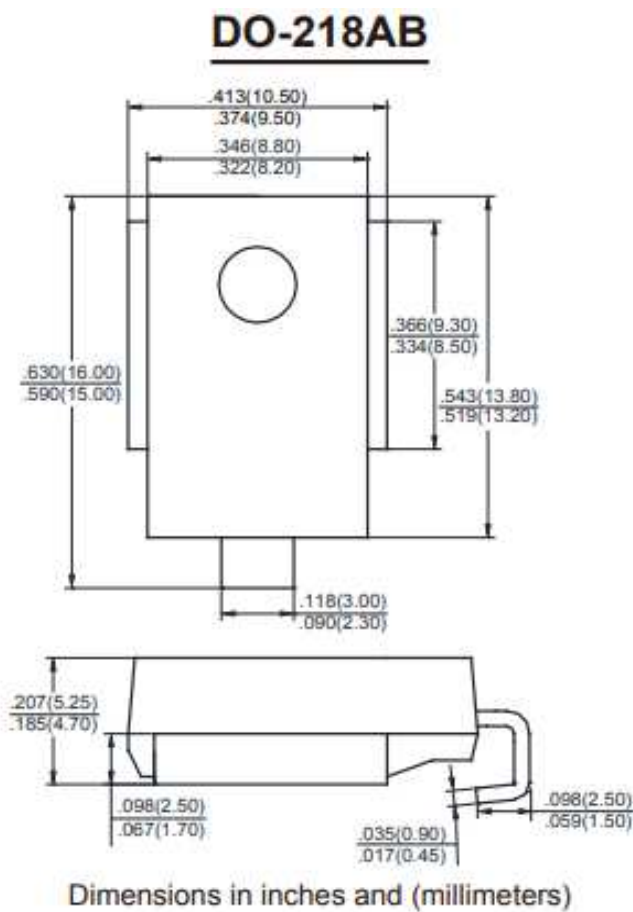


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Structures and Dimensions



Maximum Rating (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation at T _A =25 °C by 10/1000μs waveform	P _{PPM}	3600	W
Peak forward surge current, 8.3 ms single half sine-wave (Note 1)	I _{FSM}	500	A
Power dissipation on infinite heatsink at T _C =25°C	PD	5.0	W
Maximum instantaneous forward voltage at 100A for unidirectional only	V _F	1.8	V
Operating junction and storage temperature range	T _J , T _{STG}	-55~+175	°C

Note: 1. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum

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■ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Part No. (Uni)	Part No. (Bi)	Reverse Stand off Voltage	Breakage Voltage VBR @ IT		Test Current	Maximum Clamping Voltage VC @ Ipp	Maximum Peak Pulse Current	Maximum Reverse Leakage IR @VRWM	Marking Code	
		VRWM (V)	Min(V)	Max(V)					Uni	Bi
SM5S10A	SM5S10CA	10	11.1	12.3	5	17	212	15	SM5S10A	SM5S10CA
SM5S11A	SM5S11CA	11	12.2	13.5	5	18.2	198	10	SM5S11A	SM5S11CA
SM5S12A	SM5S12CA	12	13.3	14.7	5	19.9	181	10	SM5S12A	SM5S12CA
SM5S13A	SM5S13CA	13	14.4	15.9	5	21.5	167	10	SM5S13A	SM5S13CA
SM5S14A	SM5S14CA	14	15.6	17.2	5	23.2	155	10	SM5S14A	SM5S14CA
SM5S15A	SM5S15CA	15	16.7	18.5	5	24.4	148	10	SM5S15A	SM5S15CA
SM5S16A	SM5S16CA	16	17.8	19.7	5	26	138	10	SM5S16A	SM5S16CA
SM5S17A	SM5S17CA	17	18.9	20.9	5	27.6	130	10	SM5S17A	SM5S17CA
SM5S18A	SM5S18CA	18	20	22.1	5	29.2	123	10	SM5S18A	SM5S18CA
SM5S20A	SM5S20CA	20	22.2	24.5	5	32.4	111	10	SM5S20A	SM5S20CA
SM5S22A	SM5S22CA	22	24.4	26.9	5	35.5	101	10	SM5S22A	SM5S22CA
SM5S24A	SM5S24CA	24	26.7	29.5	5	38.9	93	10	SM5S24A	SM5S24CA
SM5S26A	SM5S26CA	26	28.9	31.9	5	42.1	86	10	SM5S26A	SM5S26CA
SM5S28A	SM5S28CA	28	31.1	34.4	5	45.4	79	10	SM5S28A	SM5S28CA
SM5S30A	SM5S30CA	30	33.3	36.8	5	48.4	74	10	SM5S30A	SM5S30CA
SM5S33A	SM5S33CA	33	36.7	40.6	5	53.3	68	10	SM5S33A	SM5S33CA
SM5S36A	SM5S36CA	36	40	44.2	5	58.1	62	10	SM5S36A	SM5S36CA
SM5S40A	SM5S40CA	40	44.4	49.1	5	64.5	56	10	SM5S40A	SM5S40CA
SM5S43A	SM5S43CA	43	47.8	52.8	5	69.4	52	10	SM5S43A	SM5S43CA

■ Rate and Characteristic Curve ($T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1 - Power Derating Curve

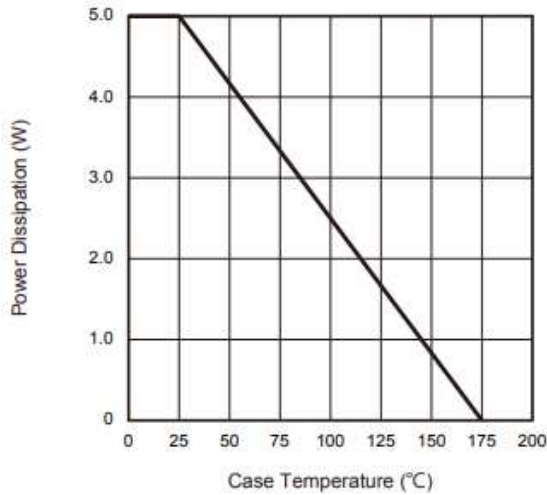


Fig.2 - Load Dump Power Characteristics (10ms Exponential Waveform)

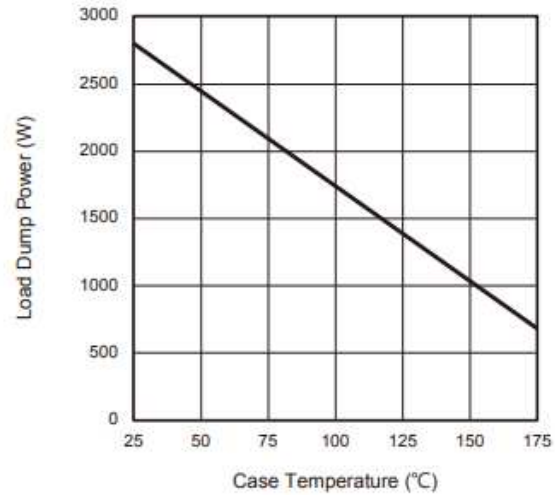


Fig.3 - Pulse Waveform

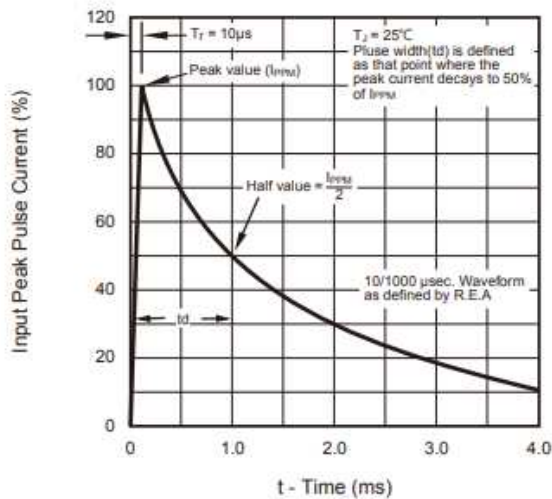


Fig.4 - Reverse Power Capability

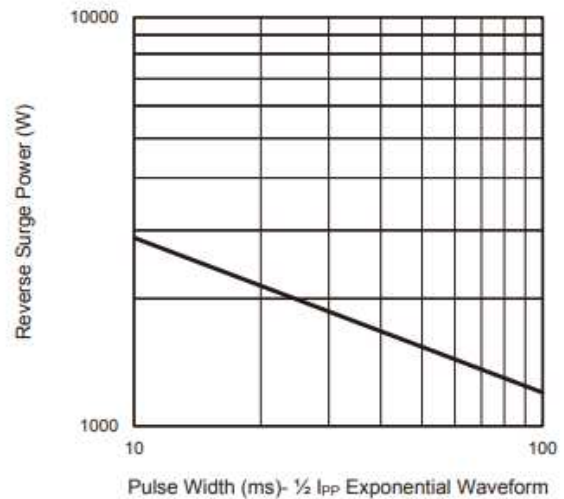
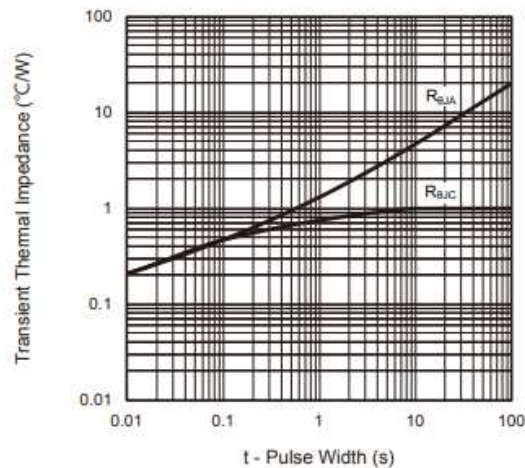


Fig.5 - Typical Transient Thermal Impedance

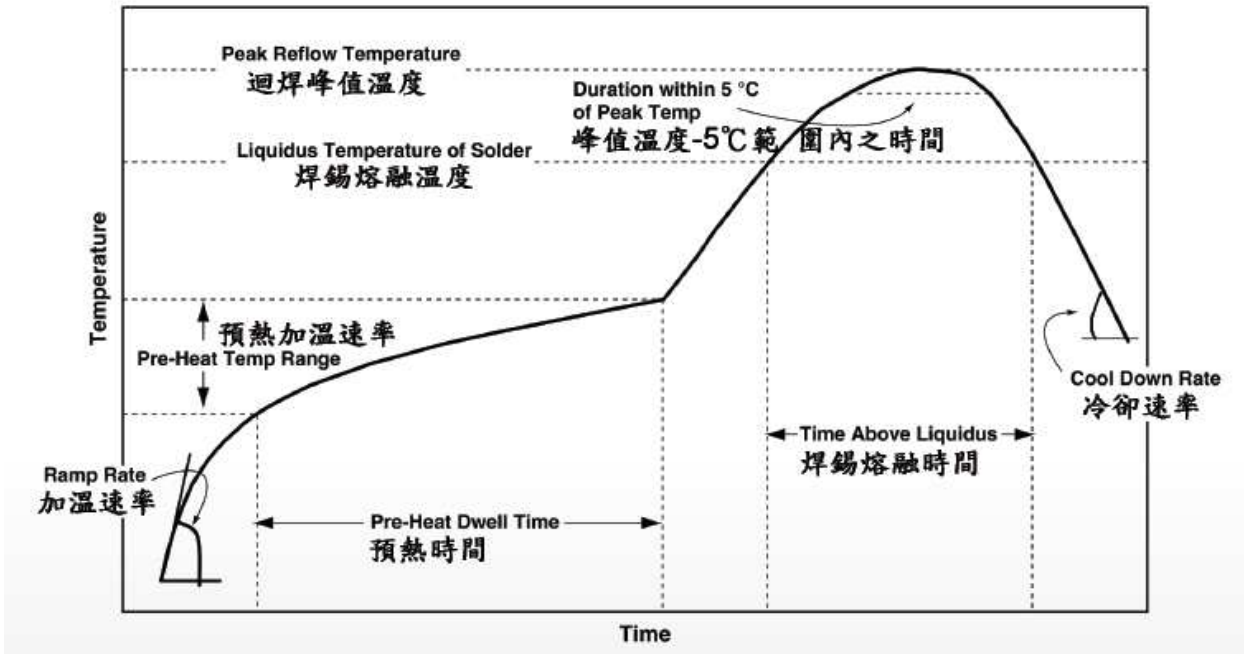


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IR-reflow soldering profile



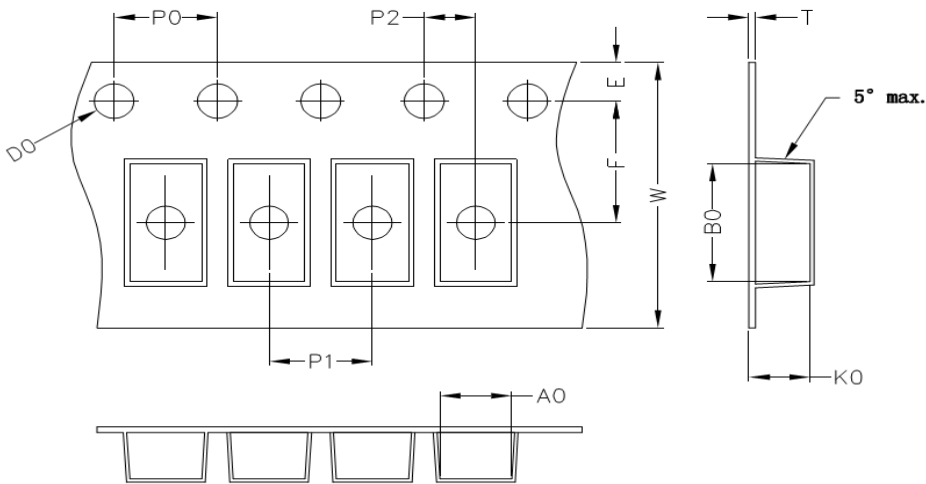
LEAD(Pb)-FREE SOLDER(SnAgCu) REFLOW PROFILE ATTRIBUTES	
PROFILE ATTRIBUTE	PROFILE ATTRIBUTE
Peak Reflow Temperature	260(+8/-8) °C
Time within 5°C of Peak Temperature	30s max
Liquidus Temperature of Solder	217°C
Cool Down Rate	6 °C/s max
Time above Liquidus	60s to 150s
Pre-heat Temperature Range	150°C to 200°C
Pre-heat Dwell Time	60s to 120s
Maximum Ramp Rate	3 °C/s max

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■ Packaging



(Unit : mm)

Index	A0	B0	K0	D0	E	F	P0	P1	P2	T	W
SM5S	10.6	15.9	5.85	1.5	1.75	11.5	4	16	2	0.35	24

■ Quantity

Series Type	Reel size (inch)	Quantity (pcs/reel)
SM5S	13"	750

■ Warehouse Storage Conditions of product

- Storage Condition:
 - Storage Temperature: $\leq 25^{\circ}\text{C}$
 - Relative Humidity: 50%~80%RH
 - Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.