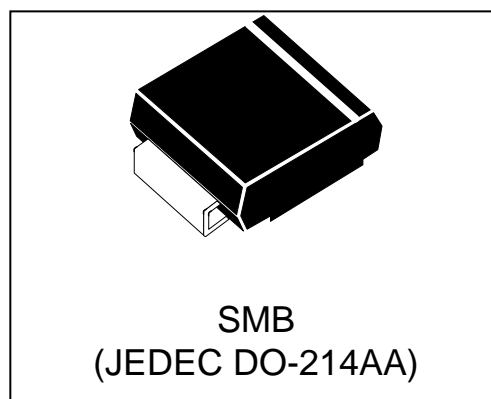


## RSxxW10SMB(-B)

### Features

- 1000 watts Peak Pulse Power (10/1000 $\mu$ s)
- Unidirectional and Bidirectional Protection
- Fast Response Time : Typically < 1ns
- Excellent Clamping Capability
- Glass Passivated Junction
- Built-in Strain relief
- Low inductance
- Low profile package
- High temperature solder:260°C/10 seconds at terminal



### Mechanical Characteristics

- JEDEC DO-214AA package
- Molding compound flammability rating:  
UL 94V-0
- Marking : Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

### Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computers & Consumer Electronics
- Industrial Electronics

Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power (tp =10/1000 $\mu$ s) (see Note1,2& 3)	P <sub>PPM</sub>	1000	Watts
Peak pulse current (10/1000 $\mu$ s) (see Note2&3)	I <sub>PPM</sub>	See Electrical Characteristics	A
Peak Forward surge current (see Note4&5)	I <sub>FSM</sub>	300	A
Power Dissipation on infinite heat sink T <sub>A</sub> = 50 °C (Fig5)	P <sub>D</sub>	6.5	W
Operating Junction Temperature range	T <sub>J</sub>	-55 to + 150	°C
Storage Temperature range	T <sub>STG</sub>	-55 to + 150	°C

**Note1:** Peak Pulse Power Rating as Pulse Width ,per Fig1.

**Note2:** Peak Pulse Power or Current Derated above T<sub>A</sub>=25°C Per Fig. 2 and Non-Repetitive Current Pulse, Per Fig.3.

**Note3:** Mounted on 5.0x5.0mm<sup>2</sup> copper pad to each terminal.

**Note4:** 8.3ms Single Half Sine Wave or Equivalent Square Wave.

**Note5:** Maximum Forward Surge Current only for Unidirectional Device per Fig6.

## Electrical Characteristics

Part Number		Reverse Stand off Voltage $V_{RWM}$ (Volts)	Breakdown Voltage $V_{BR}(\text{Volts})@I_T$		Test Current $I_T$ (mA)	Maximum Clamping Voltage $V_c@I_{PP}$ (Volts)	Maximum Peak Pulse Current $I_{pp}$ (Amps)	Maximum Reverse Leakage $I_R@V_{RWM}$ ( $\mu\text{A}$ )
			MIN	MAX				
UNI-POLAR	BI-POLAR							
RS5.0W10SMB	RS5.0W10SMB-B	5.0	6.40	7.07	10	9.2	108.7	800
RS6.0W10SMB	RS6.0W10SMB-B	6.0	6.67	7.37	10	10.3	97.09	800
RS6.5W10SMB	RS6.5W10SMB-B	6.5	7.22	7.98	10	11.2	89.29	500
RS7.0W10SMB	RS7.0W10SMB-B	7.0	7.78	8.60	10	12.0	83.33	200
RS7.5W10SMB	RS7.5W10SMB-B	7.5	8.33	9.21	1	12.9	77.52	100
RS8.0W10SMB	RS8.0W10SMB-B	8.0	8.89	9.83	1	13.6	73.53	50
RS8.5W10SMB	RS8.5W10SMB-B	8.5	9.44	10.40	1	14.4	69.44	20
RS9.0W10SMB	RS9.0W10SMB-B	9.0	10.00	11.10	1	15.4	64.94	10
RS10W10SMB	RS10W10SMB-B	10	11.10	12.30	1	17.0	58.82	10
RS11W10SMB	RS11W10SMB-B	11	12.20	13.50	1	18.2	54.95	1
RS12W10SMB	RS12W10SMB-B	12	13.30	14.7	1	19.9	50.25	1
RS13W10SMB	RS13W10SMB-B	13	14.40	15.90	1	21.5	46.51	1
RS14W10SMB	RS14W10SMB-B	14	15.60	17.20	1	23.2	43.10	1
RS15W10SMB	RS15W10SMB-B	15	16.70	18.50	1	24.4	40.98	1
RS16W10SMB	RS16W10SMB-B	16	17.80	19.70	1	26.0	38.46	1
RS17W10SMB	RS17W10SMB-B	17	18.90	20.90	1	27.6	36.23	1
RS18W10SMB	RS18W10SMB-B	18	20.00	22.10	1	29.2	34.25	1
RS20W10SMB	RS20W10SMB-B	20	22.20	24.50	1	32.4	30.86	1
RS22W10SMB	RS22W10SMB-B	22	24.40	26.90	1	35.5	28.17	1
RS24W10SMB	RS24W10SMB-B	24	26.70	29.50	1	38.9	25.71	1
RS26W10SMB	RS26W10SMB-B	26	28.90	31.90	1	42.1	23.75	1
RS28W10SMB	RS28W10SMB-B	28	31.10	34.40	1	45.4	22.03	1
RS30W10SMB	RS30W10SMB-B	30	33.30	36.80	1	48.4	20.66	1
RS33W10SMB	RS33W10SMB-B	33	36.70	40.60	1	53.3	18.76	1
RS36W10SMB	RS36W10SMB-B	36	40.00	44.20	1	58.1	17.21	1
RS40W10SMB	RS40W10SMB-B	40	44.40	49.10	1	64.5	15.50	1
RS43W10SMB	RS43W10SMB-B	43	47.80	52.80	1	69.4	14.41	1
RS45W10SMB	RS45W10SMB-B	45	50.00	55.30	1	72.7	13.76	1

Typical Characteristics

Figure 1: Peak Pulse Power Rating Curve

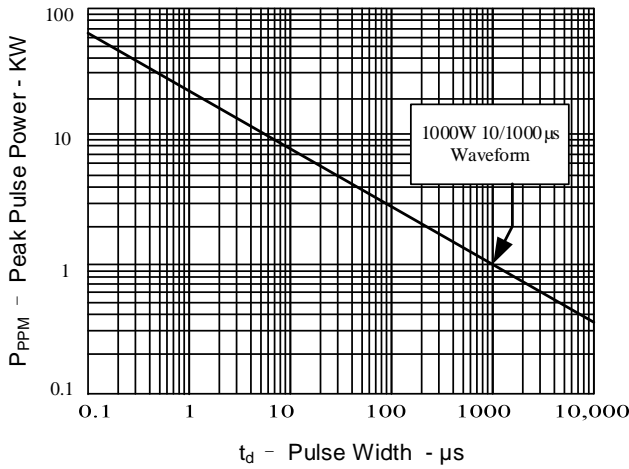


Figure 2: Pulse Derating Curve

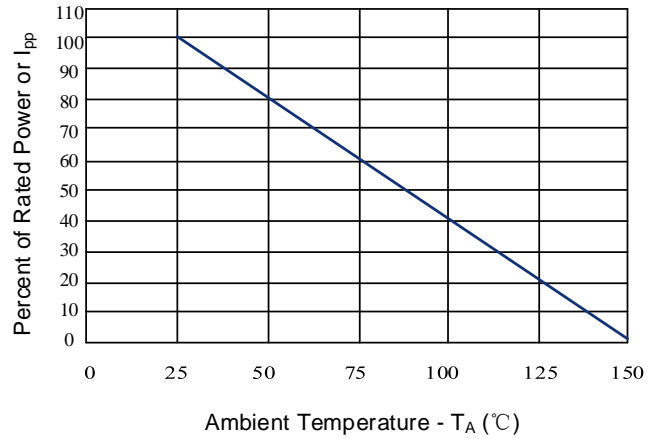


Figure 3: Pulse Waveform

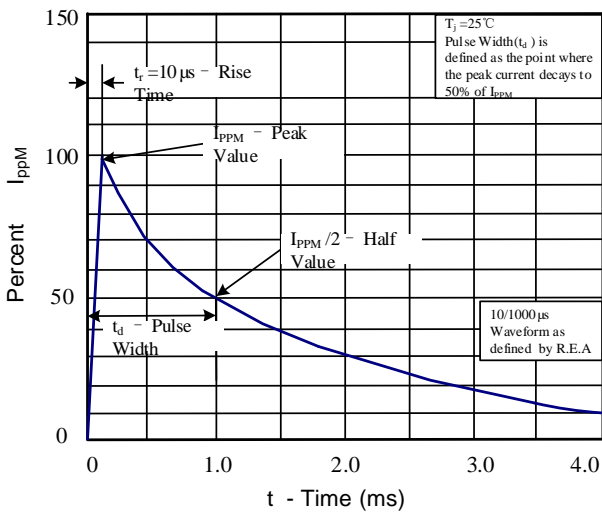


Figure 4: Typical Junction Capacitance

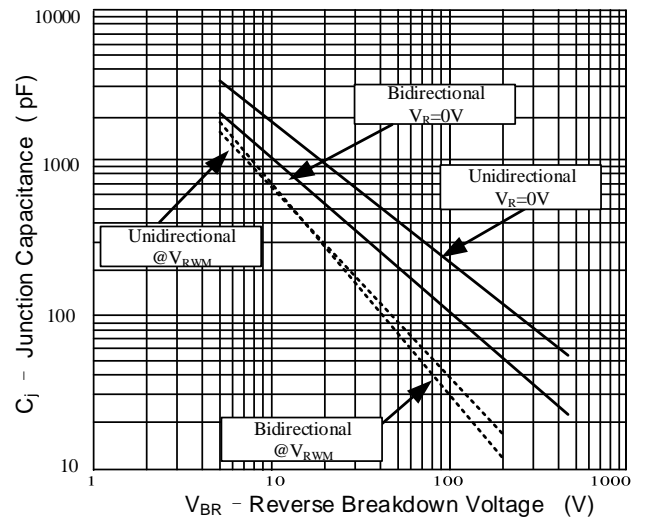


Figure 5: Steady State Power Dissipation Derating Curve

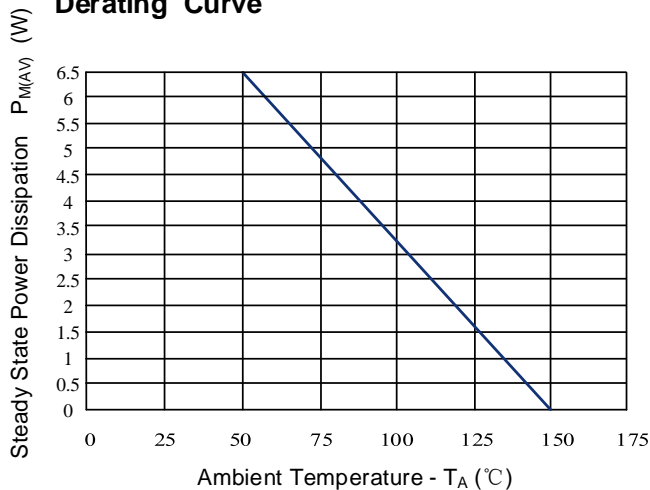
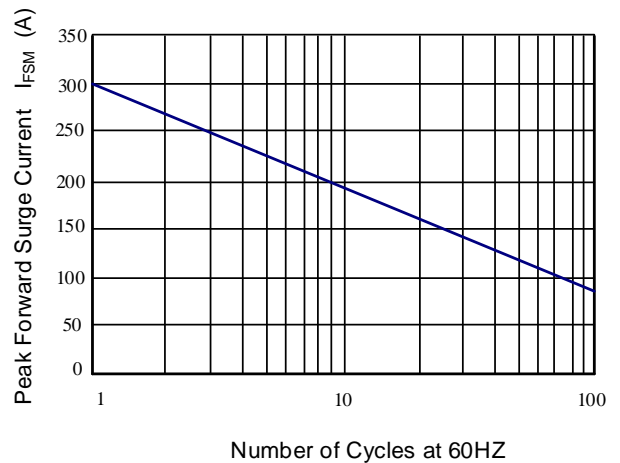
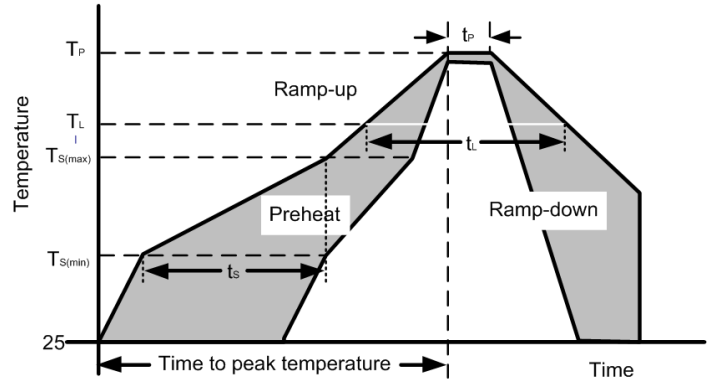


Figure 6: Maximum Non-Repetitive Forward Surge Current Only Unidirectional



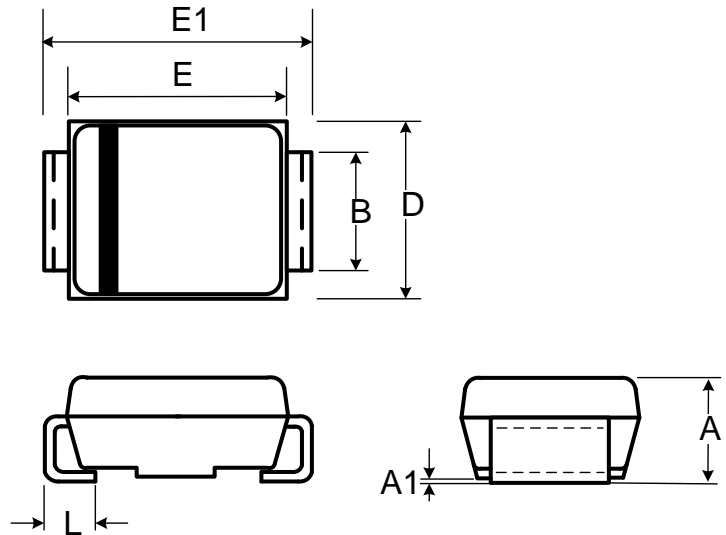
Soldering Parameters

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 <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

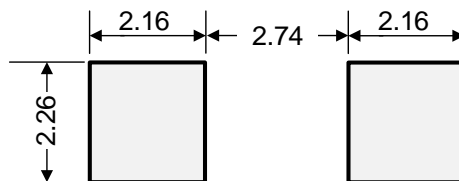


Outline Drawing – SMB(DO-214AA)

Ref. (mm)	Millimeters	
	Min.	Max.
A	2.130	2.600
A1	-	0.203
B	1.950	2.200
E	4.060	4.570
E1	5.210	5.590
D	3.300	3.940
L	0.760	1.520

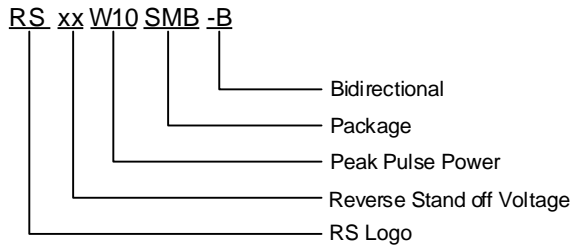


Recommended Solder Pad Layout

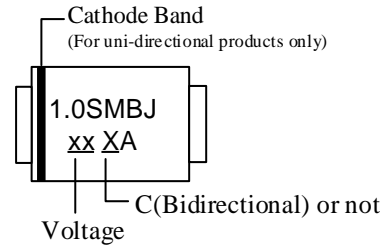


Dimensions in mm

Part Numbering System



Part Marking System



Package Information

Package Type	Description	Quantity (pcs)	Standard
DO-214AA	Tape & Reel -12mm/13" tape	3000	EIA-481-D