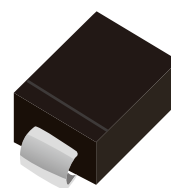


## FEATURES

- | Low profile package
- | Ideal for automated placement
- | 1000 Watt peak pulse power capability with a 10/1000 $\mu$ s waveform
- | For surface mounted applications to optimize board space
- | Excellent clamping capability
- | Very fast response time
- | Low incremental surge resistance



DO-214AA(SMB)



Schematic Symbol

## APPLICATIONS

- | Power supply protection
- | Automotive application
- | Industrial application
- | Power management

## APPROVALS

|             |                                    |
|-------------|------------------------------------|
| <b>RoHS</b> | Compliance with 2011/65/EU         |
| <b>HF</b>   | Compliance with IEC61249-2-21:2003 |

## MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ )

| Parameter                                                                | Symbol    | Value | Unit  |
|--------------------------------------------------------------------------|-----------|-------|-------|
| Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform (Note1, Note2). | $P_{PPM}$ | 1000  | Watts |
| Steady State Power Dissipation at $T_A=50^{\circ}\text{C}$ (Note2).      | $P_D$     | 5.0   | Watts |

**Notes :**1.Non-repetitive current pulse, $T_A=25^{\circ}\text{C}$ .

2.Mounted on 5.0mm x 5.0mm (0.03mm thick) Copper Pads to each terminal.

## THERMAL CONSIDERATIONS

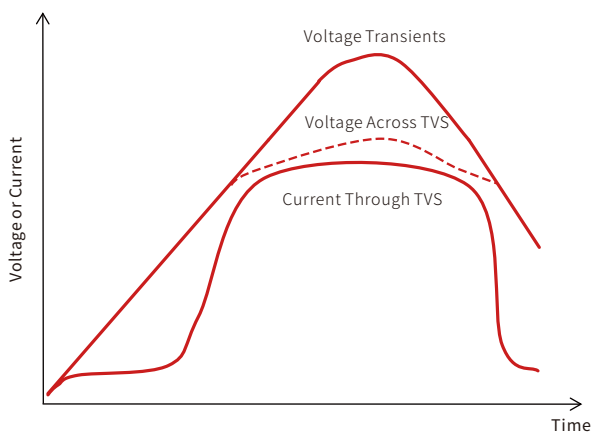
| Parameter                              | Symbol          | Value       | Unit                 |
|----------------------------------------|-----------------|-------------|----------------------|
| Operating Junction Temperature         | $T_J$           | -55 to +150 | $^{\circ}\text{C}$   |
| Storage Temperature Range              | $T_{STG}$       | -55 to +150 | $^{\circ}\text{C}$   |
| Junction to Ambient on printed circuit | $R_{\theta JA}$ | 90          | $^{\circ}\text{C/W}$ |

## ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

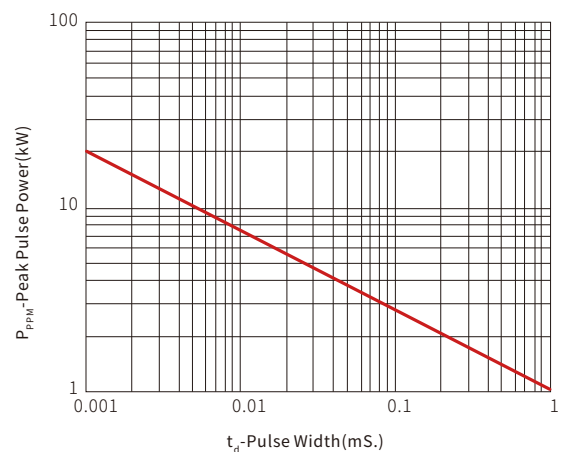
| Part Number | Device Marking Code | Reverse Stand-off Voltage | Breakdown Voltage Min.@ $I_T$ | Breakdown Voltage Max.@ $I_T$ | Test Current | Maximum Clamping Voltage @ $I_{PP}$ | Peak Pulse Current | Reverse Leakage @ $V_{RWM}$ |
|-------------|---------------------|---------------------------|-------------------------------|-------------------------------|--------------|-------------------------------------|--------------------|-----------------------------|
|             |                     | $V_{RWM}$ (V)             | $V_{BR}$ (V)                  | $V_{BR}$ (V)                  | $I_T$ (mA)   | $V_C$ (V)                           | $I_{PP}$ (A)       | $I_R$ ( $\mu$ A)            |
| SVB100U40   | TMR                 | 40.0                      | 44.4                          | 49.1                          | 1.0          | 64.5                                | 15.5               | 1.0                         |

## CHARACTERISTIC CURVES

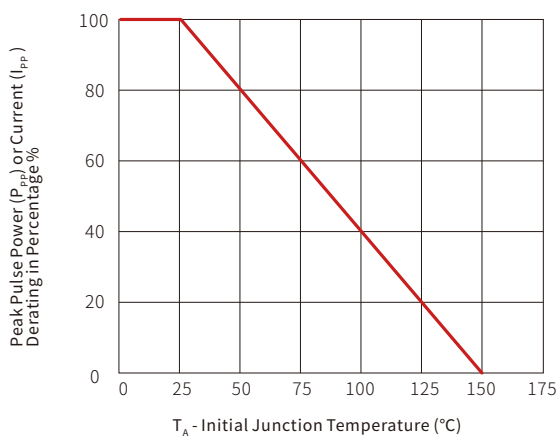
TVS Transients Clamping Waveform



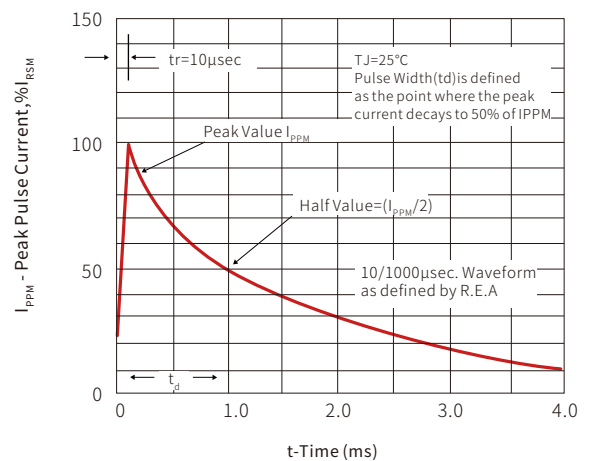
Peak Pulse Power Rating Curve



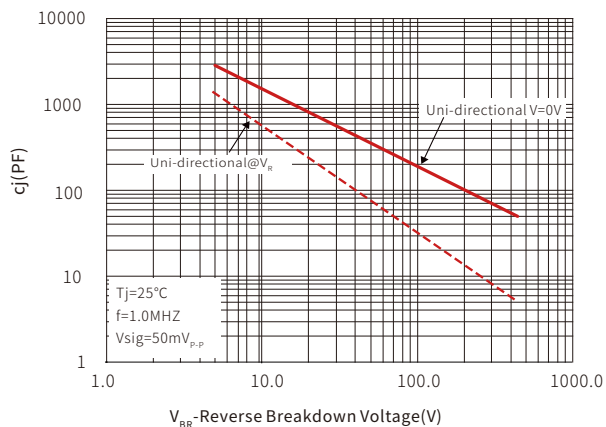
Pulse Derating Curve



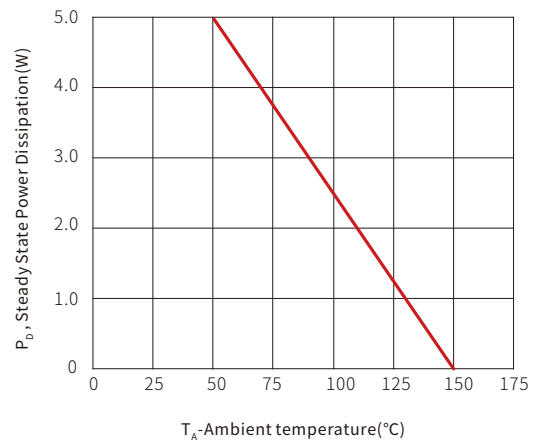
Pulse Waveform



Typical Junction Capacitance

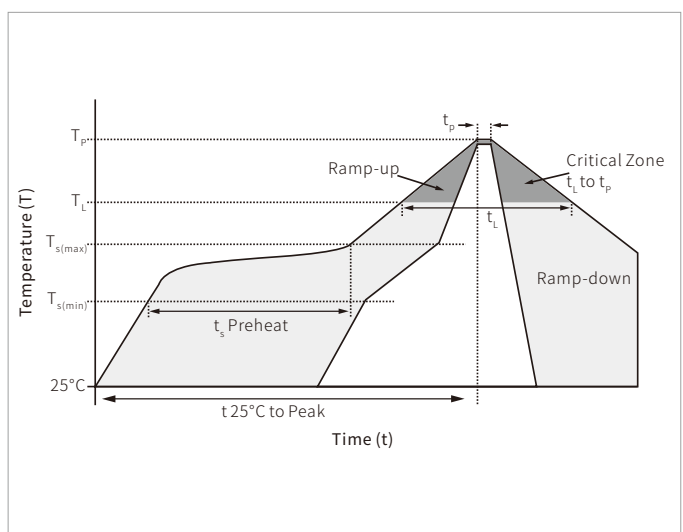


Steady State Power Dissipation Derating Curve

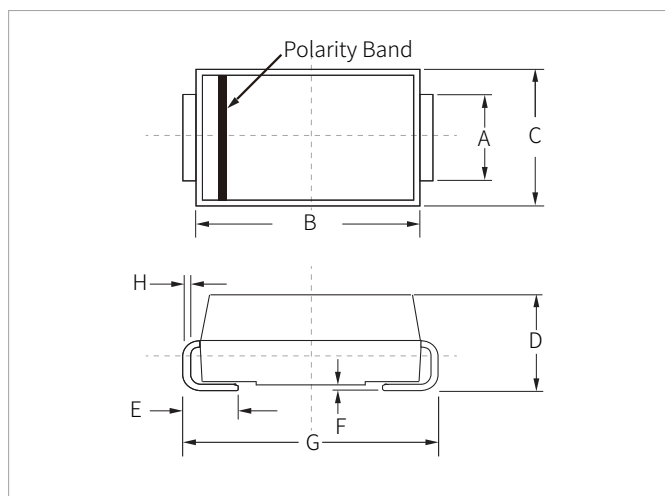


## SOLDERING PARAMETERS

| Reflow Condition                                              |                                  | Lead-free assembly       |
|---------------------------------------------------------------|----------------------------------|--------------------------|
| Pre Heat                                                      | Temperature Max ( $T_{s(min)}$ ) | 150 $^\circ C$           |
|                                                               | Temperature Max ( $T_{s(max)}$ ) | 200 $^\circ C$           |
|                                                               | Time (min to max) ( $t_s$ )      | 60 – 180 secs            |
| Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)        |                                  | 3 $^\circ C$ /second max |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                          |                                  | 3 $^\circ C$ /second max |
| Reflow                                                        | Temperature ( $T_L$ ) (Liquidus) | 217 $^\circ C$           |
|                                                               | Time (min to max) ( $t_L$ )      | 60 – 150 seconds         |
| Peak Temperature ( $T_p$ )                                    |                                  | 260 $^\circ C$           |
| Time within 5 $^\circ C$ of actual peak Temperature ( $t_p$ ) |                                  | 20 – 40 seconds          |
| Ramp-down Rate                                                |                                  | 6 $^\circ C$ /second max |
| Time 25 $^\circ C$ to peak Temperature ( $T_p$ )              |                                  | 8 minutes max.           |
| Do not exceed                                                 |                                  | 260 $^\circ C$           |

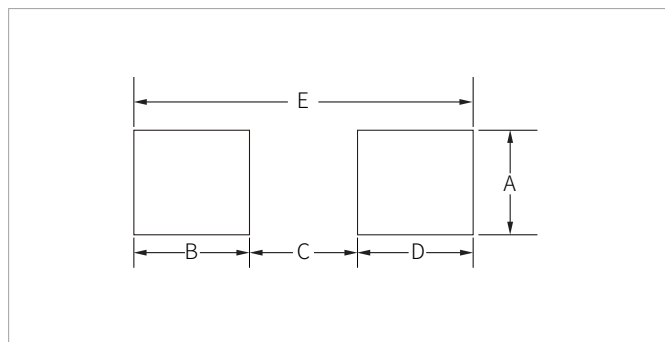


## DO-214AA(SMB) PACKAGE INFORMATION



| Ref. | Millimeters |      | Inches |       |
|------|-------------|------|--------|-------|
|      | Min.        | Max. | Min.   | Max.  |
| A    | 1.80        | 2.20 | 0.071  | 0.087 |
| B    | 4.30        | 4.70 | 0.170  | 0.185 |
| C    | 3.40        | 3.90 | 0.134  | 0.153 |
| D    | 2.15        | 2.75 | 0.085  | 0.108 |
| E    | 1.00        | 1.50 | 0.039  | 0.059 |
| F    | 0.02        | 0.20 | 0.001  | 0.008 |
| G    | 5.10        | 5.50 | 0.200  | 0.216 |
| H    | 0.15        | 0.30 | 0.006  | 0.012 |

## RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters |      | Inches   |       |
|------|-------------|------|----------|-------|
|      | Min.        | Max. | Min.     | Max.  |
| A    | 2.20        | -    | 0.087    | -     |
| B    | 1.45        | -    | 0.057    | -     |
| C    | -           | 2.55 | -        | 0.010 |
| D    | 1.45        | -    | 0.057    | -     |
| E    | 5.60REF     |      | 0.220REF |       |

## ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|-------------|-------------------|----------|-----------|
| SVB100U40   | DO-214AA(SMB)     | 3000PCS  | 13"       |

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