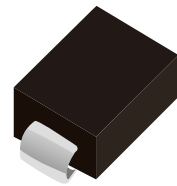


## FEATURES

- Excellent capability of absorbing transient surge
- Quick response to surge voltage
- Eliminates over voltage caused by fast rising transients
- Solid-state silicon technology, non degenerate



SMB(DO-214AA)



Marking



Schematic Symbol

## APPLICATIONS

- Audio/Video line
- Network and telecom
- Data lines and security systems
- Serial ports

## APPROVALS

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

## ELECTRICAL CHARACTERISTICS

| Part Number | $V_{DRM}$ | $V_S$    | $V_T$    | $I_{DRM}$       | $I_S$ | $I_T$    | $I_H$     | $C_o$    |
|-------------|-----------|----------|----------|-----------------|-------|----------|-----------|----------|
|             | Min. (V)  | Max. (V) | Max. (V) | Max. ( $\mu$ A) | mA    | Max. (A) | Min. (mA) | Typ.(pF) |
| STB80B170   | 170.0     | 220.0    | 4.0      | 5.0             | 800.0 | 2.2      | 120.0     | 60.0     |

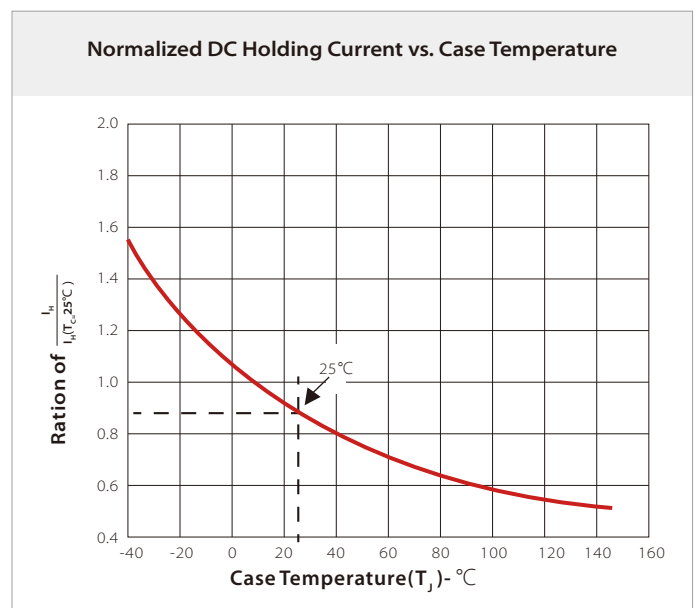
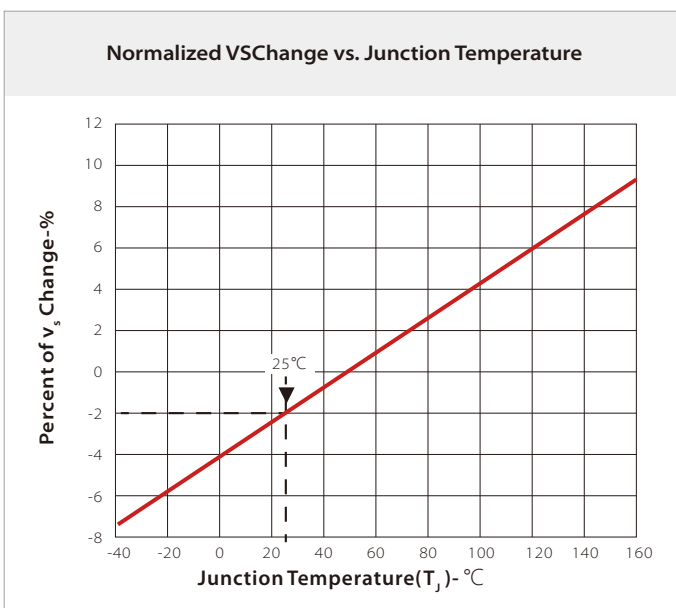
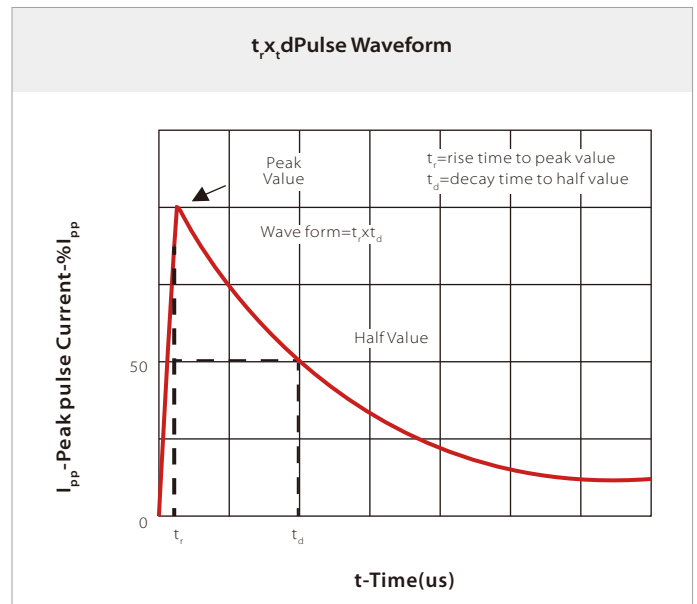
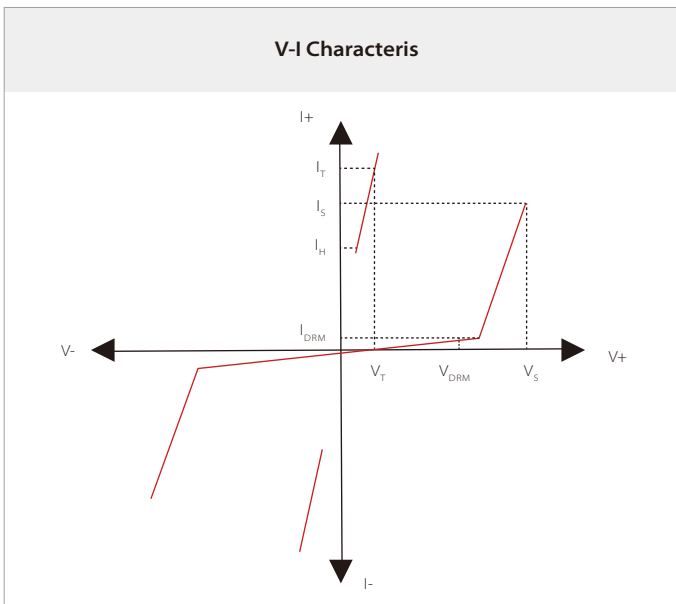
## SURGE RATINGS

| Part Number | $I_{PP}$<br>2x10us | $I_{PP}$<br>8x20us | $I_{PP}$<br>10x560us | $I_{PP}$<br>10x1000us | $V_{PP}$<br>10x700us | $I_{TSM}$<br>50/60Hz | $d_i/d_t$ |
|-------------|--------------------|--------------------|----------------------|-----------------------|----------------------|----------------------|-----------|
|             | (A)                | (A)                | (A)                  | (A)                   | (V)                  | (A)                  | (A/us)    |
| STB80B170   | 250                | 250                | 100                  | 80                    | 4000                 | 25                   | 500       |

## THERMAL CONSIDERATIONS

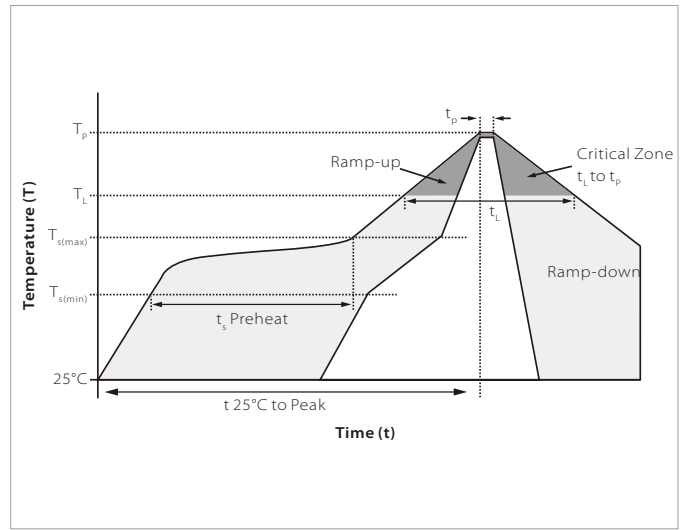
| Symbol          | Parameter                              | Value       | Unit |
|-----------------|--|-------------|------|
| $R_{\theta JA}$ | Junction to Ambient on printed circuit | 90          | °C/W |
| $T_J$           | Operating Junction Temperature         | -55 to +125 | °C   |
| $T_{STG}$       | Storage Temperature Range              | -55 to +150 | °C   |

## RATINGS AND CHARACTERISTIC CURVES ( $T_A=25^\circ\text{C}$ )

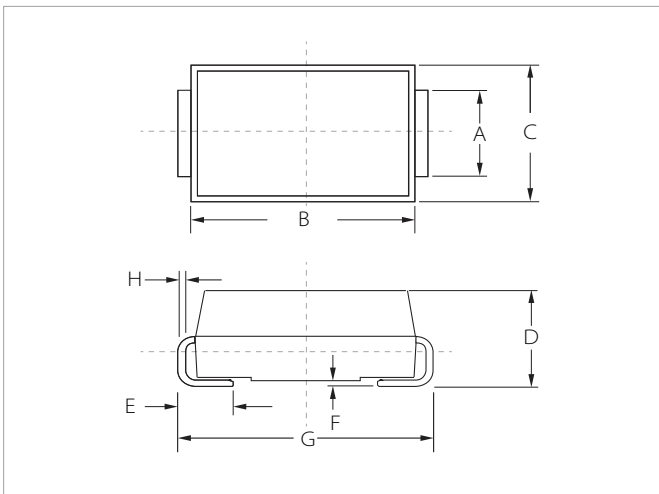


## SOLDERING PARAMETERS

| Reflow Condition                                      |                                  | Lead-free assembly |
|---|----------------------------------|--------------------|
| Pre Heat  | Temperature Max ( $T_{s(min)}$ ) | 150°C              |
|   | Temperature Max ( $T_{s(max)}$ ) | 200°C              |
|   | Time (min to max) ( $t_2$ )      | 60 – 180 secs      |
| Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak |                                  | 3°C/second max     |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                  |                                  | 3°C/second max     |
| Reflow  | Temperature ( $T_L$ ) (Liquidus) | 217°C              |
|   | Time (min to max) ( $t_1$ )      | 60 – 150 seconds   |
| Peak Temperature ( $T_p$ )                            |                                  | 260°C              |
| Time within 5°C of actual peak Temperature ( $t_p$ )  |                                  | 20 – 40 seconds    |
| Ramp-down Rate  |                                  | 6°C/second max     |
| Time 25°C to peak Temperature ( $T_p$ )               |                                  | 8 minutes max.     |
| Do not exceed   |                                  | 260°C              |

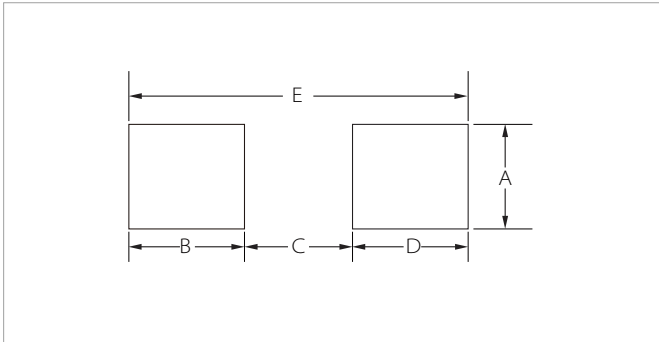


## DO-214AA(SMB) PACKAGE INFORMATION



| 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        | 2.55 | 0.085  | 0.100 |
| 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 |
|-------------|-------------------|----------|-----------|
| STB80B170   | DO-214AA(SMB)     | 3000PCS  | 13"       |

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