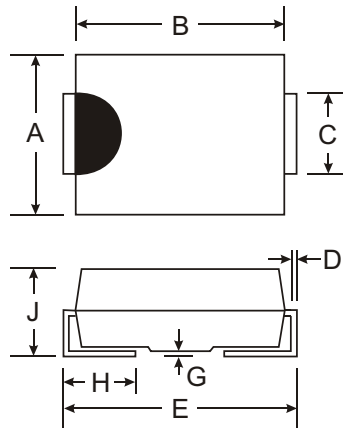


### Features

- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automatic Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 100A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application

### Mechanical Data

- Case: SMC, Molded Plastic
- Plastic Material: UL Flammability Classification Rating 94V-0
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish). Please see Ordering Information, Note 4, on Page 2
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.21 grams (approx.)
- Marking: B370, B380, B390: Type number  
B3100: B310



| SMC                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 5.59 | 6.22 |
| B                    | 6.60 | 7.11 |
| C                    | 2.75 | 3.18 |
| D                    | 0.15 | 0.31 |
| E                    | 7.75 | 8.13 |
| G                    | 0.10 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 2.00 | 2.62 |
| All Dimensions in mm |      |      |

### Maximum Ratings and Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

| Characteristic                                                                                                  | Symbol          | B370         | B380 | B390 | B3100 | Unit               |
|-----------------------------------------------------------------------------------------------------------------|-----------------|--------------|------|------|-------|--------------------|
| Peak Repetitive Reverse Voltage                                                                                 | $V_{RRM}$       | 70           | 80   | 90   | 100   | V                  |
| Working Peak Reverse Voltage                                                                                    | $V_{RWM}$       |              |      |      |       |                    |
| DC Blocking Voltage                                                                                             | $V_R$           |              |      |      |       |                    |
| RMS Reverse Voltage                                                                                             | $V_{R(RMS)}$    | 49           | 56   | 63   | 70    | V                  |
| Average Rectified Output Current @ $T_T = 90^\circ\text{C}$                                                     | $I_O$           | 3.0          |      |      |       | A                  |
| Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$       | 100          |      |      |       | A                  |
| Forward Voltage @ $I_F = 3.0\text{A}$<br>@ $T_A = 25^\circ\text{C}$<br>@ $T_A = 100^\circ\text{C}$              | $V_{FM}$        | 0.79<br>0.69 |      |      |       | V                  |
| Peak Reverse Current @ $T_A = 25^\circ\text{C}$<br>at Rated DC Blocking Voltage @ $T_A = 100^\circ\text{C}$     | $I_{RM}$        | 0.5<br>20    |      |      |       | mA                 |
| Typical Total Capacitance (Note 2)                                                                              | $C_T$           | 100          |      |      |       | pF                 |
| Typical Thermal Resistance Junction to Terminal (Note 1)                                                        | $R_{\theta JT}$ | 10           |      |      |       | $^\circ\text{C/W}$ |
| Operating Temperature Range                                                                                     | $T_J$           | -55 to +125  |      |      |       | $^\circ\text{C}$   |
| Storage Temperature Range                                                                                       | $T_{STG}$       | -55 to +150  |      |      |       | $^\circ\text{C}$   |

Notes: 1. Valid provided that terminals are kept at ambient temperature.  
 2. Measured at 1.0MHz and Applied Reverse Voltage of 4.0V DC.

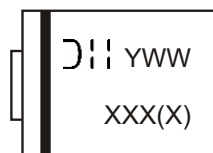
## Ordering Information (Note 3 & 4)

| Device* | Packaging | Shipping         |
|---------|-----------|------------------|
| B3x-13  | SMC       | 3000/Tape & Reel |

Notes: 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

\* x = Device type, e.g. B380-13 (SMC package).

4. For lead free terminal plating part number, please add "-F" suffix to part number above. Example: B390-13-F.



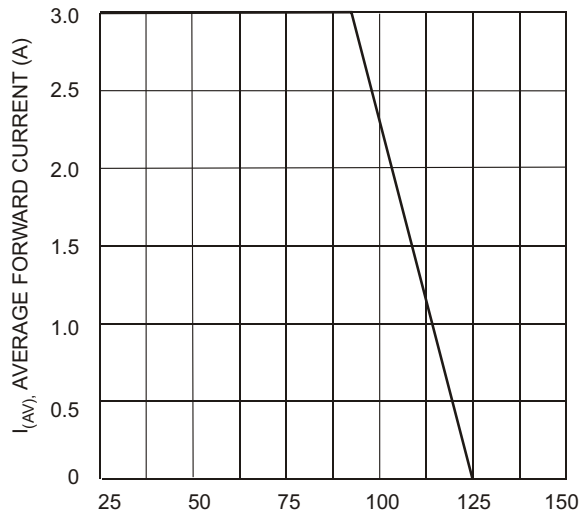
XXXX = Product type marking code, ex: B380 (SMC package)

D||| = Manufacturers' code marking

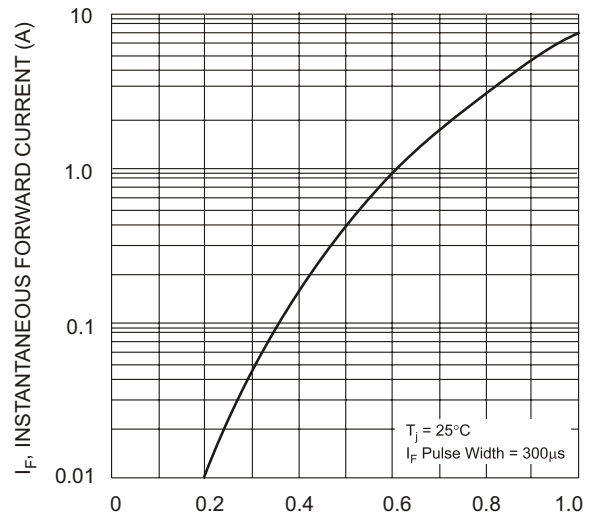
YWW = Date code marking

Y = Last digit of year ex: 2 for 2002

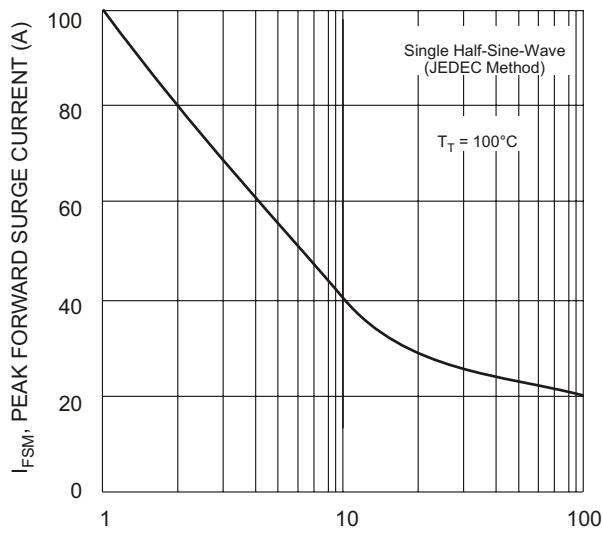
WW = Week code 01 to 52



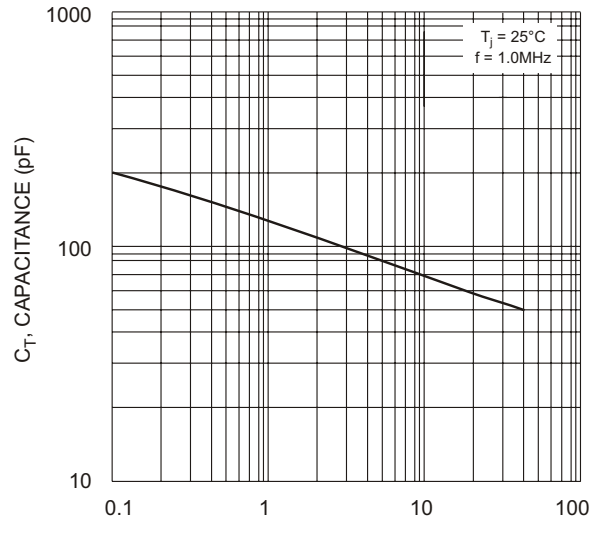
$T_T$ , TERMINAL TEMPERATURE (°C)  
Fig. 1 Forward Current Derating Curve



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



NUMBER OF CYCLES AT 60 Hz  
Fig. 3 Max Non-Repetitive Peak Forward Surge Current



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 4 Typical Total Capacitance