

## FEATURES

- | Construction Utilizes Void-free Molded Plastic Technique

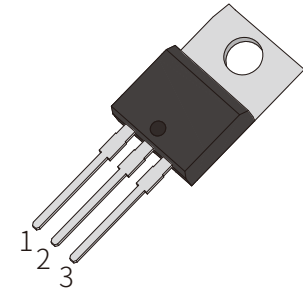
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- | Low Reverse Leakage

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- | High Forward Surge Current Capability

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TO-220AB

## MECHANICAL DATA

- | Case : Molded Plastic Body

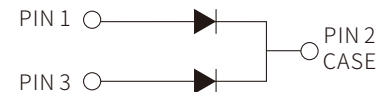
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- | Terminals : Solder plated, solderable per MIL-STD-750,Method 2026

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- | Mounting Position : Any

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Schematic Symbol

## APPROVALS

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

## MAXIMUM RATINGS (T<sub>A</sub>=25°C )

| Parameter  | Symbol                | SF 2005FCT<br>SF 2005FCT | SF 2010FCT<br>SF 2010FCT | SF 2020FCT<br>SF 2020FCT | SF 2040FCT<br>SF 2040FCT | SF 2050FCT<br>SF 2050FCT | SF 2060FCT<br>SF 2060FCT | Unit |
|--|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| Marking  |                       | SF 2005FCT               | SF 2010FCT               | SF 2020FCT               | SF 2040FCT               | SF 2050FCT               | SF 2060FCT               |      |
| Maximum Repetitive Peak Reverse Voltage  | V <sub>RRM</sub>      | 50                       | 100                      | 200                      | 400                      | 500                      | 600                      | V    |
| Maximum RMS Voltage  | V <sub>RMS</sub>      | 35                       | 70                       | 140                      | 280                      | 350                      | 420                      | V    |
| Maximum DC Blocking Voltage  | V <sub>DC</sub>       | 50                       | 100                      | 200                      | 400                      | 500                      | 600                      | V    |
| Maximum Average Forward Rectified Current at T <sub>c</sub> =110°C                 | per device            | 20.0                     |                          |                          |                          |                          |                          | A    |
|  | per diode             | 10.0                     |                          |                          |                          |                          |                          |      |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed On Rated Load | I <sub>FSM</sub>      | 200.0                    |                          |                          |                          |                          |                          | A    |
| Maximum Instantaneous Forward Voltage per Diode at 10.0A                           | V <sub>F</sub>        | 1.0                      |                          | 1.3                      |                          | 2.0                      |                          | V    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                            | T <sub>A</sub> =25°C  | 10                       |                          |                          |                          |                          |                          | μA   |
|  | T <sub>A</sub> =125°C | 500                      |                          |                          |                          |                          |                          | μA   |
| Maximum Reverse Recovery Time <sup>(Note 1)</sup>                                  | T <sub>rr</sub>       | 35                       |                          |                          |                          |                          |                          | ns   |
| Typical Thermal Resistance   | R <sub>θJC</sub>      | 3.5                      |                          |                          |                          |                          |                          | °C/W |
| Operating Junction Temperature Range   | T <sub>J</sub>        | -55 to +150              |                          |                          |                          |                          |                          | °C   |
| Storage Temperature Range  | T <sub>STG</sub>      | -55 to +150              |                          |                          |                          |                          |                          | °C   |

 Note:1.Reverse recovery time test condition: I<sub>F</sub>=0.5A I<sub>R</sub>=1.0A I<sub>rr</sub>=0.25A

# CHARACTERISTIC CURVES

Fig. 1- Derating Curve Output Rectified Current

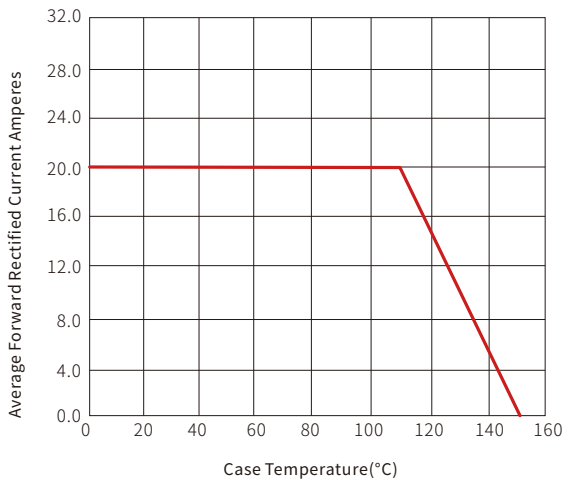


Fig. 2-Maximum Non-Repetitive Peak Forward Surge Current Perleg

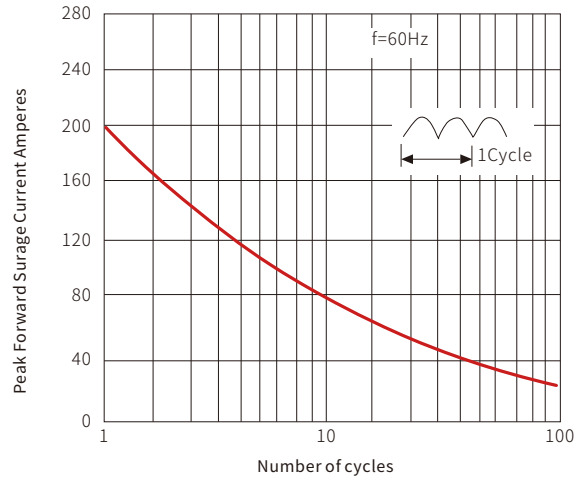


Fig. 3-Typical Forward Voltage Characteristics

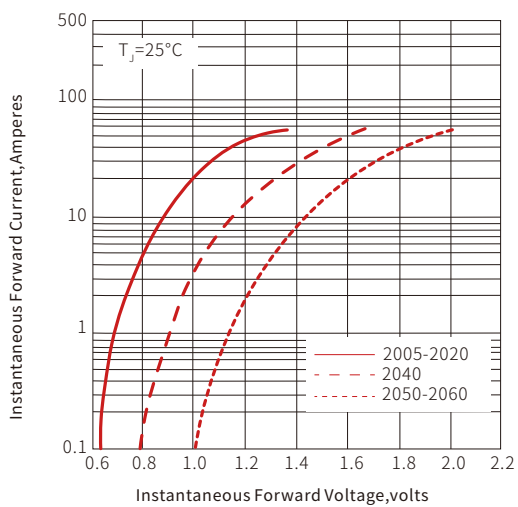
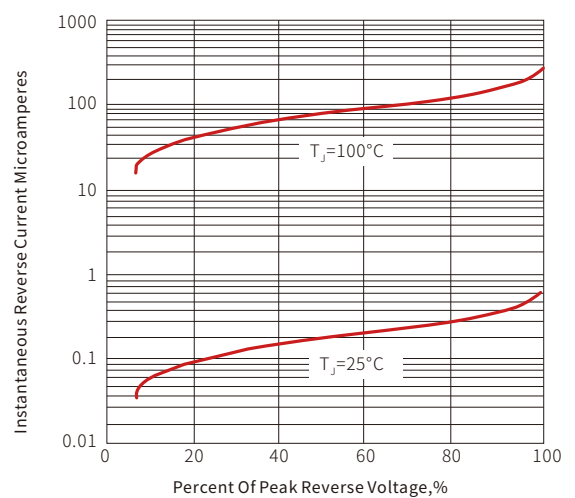
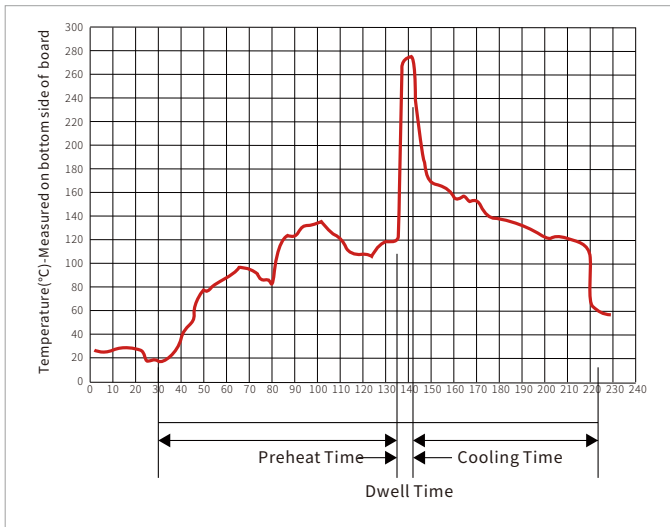


Fig. 4-Typical Reverse Leakage Characteristics

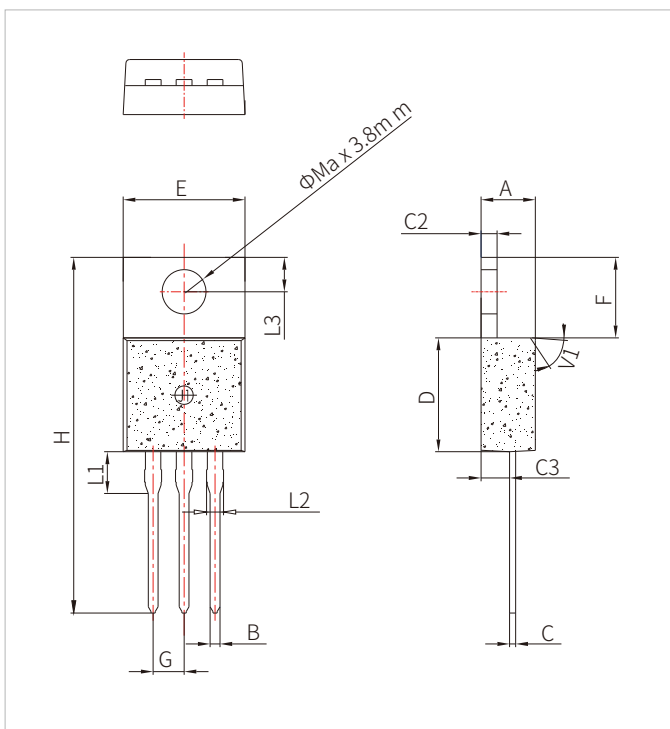


## WAVE SOLDERING



| Wave Parameter         |                  | Lead-free assembly |
|------------------------|------------------|--------------------|
| Pre Heat               | Temperature Min  | 100°C              |
|                        | Temperature Max  | 150°C              |
|                        | Time(min to max) | 60 – 180 secs      |
| Solder pot Temperature |                  | 280°C Max          |
| Solder Dwell Time      |                  | 2-5 seconds        |

## TO-220AB PACKAGE MECHANICAL DATA



| Ref. | Dimensions  |      |      |        |       |       |
|------|-------------|------|------|--------|-------|-------|
|      | Millimeters |      |      | Inches |       |       |
|      | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A    | 4.40        |      | 4.60 | 0.173  |       | 0.181 |
| B    | 0.61        |      | 0.88 | 0.024  |       | 0.035 |
| C    | 0.46        |      | 0.70 | 0.018  |       | 0.028 |
| C2   | 1.21        |      | 1.32 | 0.048  |       | 0.052 |
| C3   | 2.40        |      | 2.72 | 0.094  |       | 0.107 |
| D    | 8.60        |      | 9.70 | 0.339  |       | 0.382 |
| E    | 9.80        |      | 10.4 | 0.386  |       | 0.409 |
| F    | 6.55        |      | 6.95 | 0.258  |       | 0.274 |
| G    |             | 2.54 |      |        | 0.1   |       |
| H    | 28.0        |      | 29.8 | 1.102  |       | 1.173 |
| L1   |             | 3.75 |      |        | 0.148 |       |
| L2   | 1.14        |      | 1.70 | 0.045  |       | 0.067 |
| L3   | 2.65        |      | 2.95 | 0.104  |       | 0.116 |
| V1   |             | 45°  |      |        | 45°   |       |

## ORDERING INFORMATION

| Part Number         | Component Package | QTY/Tube | QTY/Box | QTY/Carton |
|---------------------|-------------------|----------|---------|------------|
| SF2005FCT-SF2060FCT | TO-220AB          | 50PCS    | 1000PCS | 5000PCS    |

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