

MER2DAFC-AU

Surface Mount Super Fast Recovery Rectifier

Voltage

200 V

Current

2 A

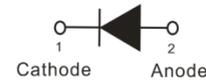
Features

- Superfast recovery times-epitaxial construction
- Low forward voltage, high current capability
- Low leakage
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SMAF-C Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.034 grams

SMAF-C



Maximum Ratings and Thermal Characteristics (T_A = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | LIMIT | UNITS |
|--|------------------------------|---------|-------|
| Maximum Repetitive Peak Reverse Voltage | V _{RRM} | 200 | V |
| Maximum RMS Voltage | V _{RMS} | 140 | V |
| Maximum DC Blocking Voltage | V _{DC} | 200 | V |
| Maximum Average Forward Current | I _{F(AV)} | 2 | A |
| Peak Forward Surge Current : 8.3 ms Single Half Sine-Wave Superimposed On Rated Load | I _{FSM} | 60 | A |
| Typical Junction Capacitance Measured at 1 MHZ And Applied V _R = 4 V | C _J | 25 | pF |
| Typical Thermal Resistance | (Note 1) R _{θJA} | 150 | °C/W |
| | (Note 2) R _{θJC} | 23 | |
| | (Note 2) R _{θJL} | 20 | |
| Operating Junction Temperature Range | T _J | -55~175 | °C |
| Storage Temperature Range | T _{STG} | -55~175 | °C |

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Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNITS |
|-------------------------|-----------|---|---------------------------|------|------|-------|
| Forward Voltage | V_F | $I_F = 1\text{ A}, T_J = 25^\circ\text{C}$ | - | 0.83 | - | V |
| | | $I_F = 2\text{ A}, T_J = 25^\circ\text{C}$ | - | - | 0.95 | V |
| | | $I_F = 1\text{ A}, T_J = 125^\circ\text{C}$ | - | 0.7 | - | V |
| | | $I_F = 2\text{ A}, T_J = 125^\circ\text{C}$ | - | 0.78 | - | V |
| Reverse Current | I_R | $V_R = 160\text{ V}, T_J = 25^\circ\text{C}$ | - | 5 | - | nA |
| | | $V_R = 200\text{ V}, T_J = 25^\circ\text{C}$ | - | - | 1 | uA |
| | | $V_R = 200\text{ V}, T_J = 125^\circ\text{C}$ | - | - | 40 | |
| Reverse Recovery Time | T_{RR} | $I_F = 0.5\text{ A}, I_R = 1\text{ A},$ $I_{RR} = 0.25\text{ A}, T_J = 25^\circ\text{C}$ | - | - | 35 | ns |
| Reverse Recovery Time | T_{RR} | $I_F = 2\text{ A}, V_R = 200\text{ V}$ $di/dt = 300\text{ A/uS}$ | - | 17 | - | ns |
| Peak Recovery Current | I_{RRM} | | - | 3.9 | - | A |
| Reverse Recovery Charge | Q_{RR} | $T_J = 25^\circ\text{C}$ | - | 39 | - | nC |
| Reverse Recovery Time | T_{RR} | $I_F = 2\text{ A}, V_R = 200\text{ V}$ $di/dt = 300\text{ A/uS}$ | - | 26 | - | ns |
| Peak Recovery Current | I_{RRM} | | - | 5.6 | - | A |
| Reverse Recovery Charge | Q_{RR} | | $T_J = 125^\circ\text{C}$ | - | 83 | - |

NOTES :

1. Mounted on a FR4 PCB, single-sided copper, standard footprint.
2. Mounted on a FR4 PCB, single-sided copper, with 100 cm² copper pad area.

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TYPICAL CHARACTERISTIC CURVES

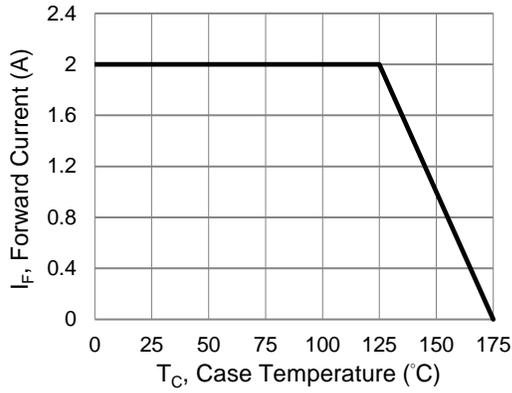


Fig.1 Forward Current Derating Curve

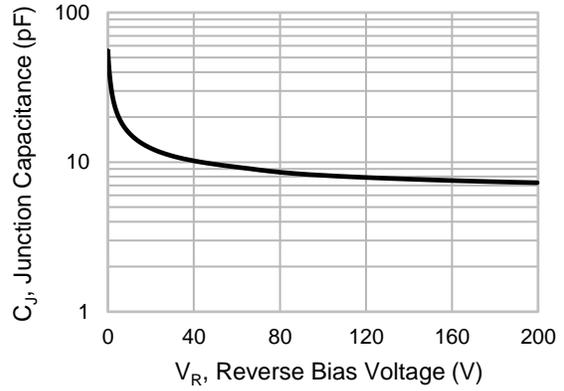


Fig.2 Typical Junction Capacitance

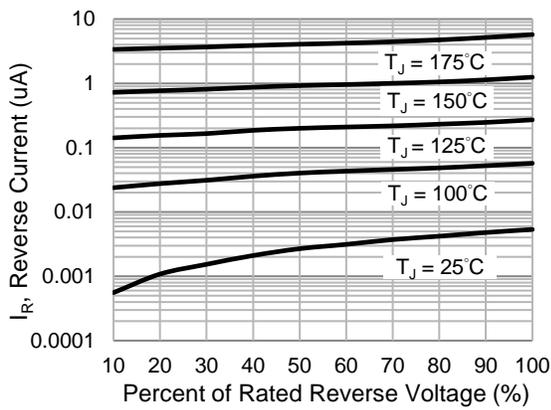


Fig.3 Typical Reverse Characteristics

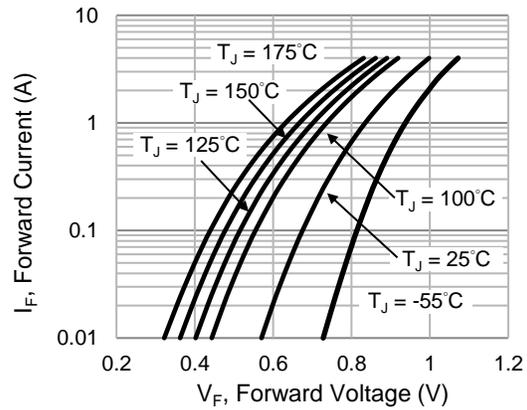


Fig.4 Typical Forward Characteristics

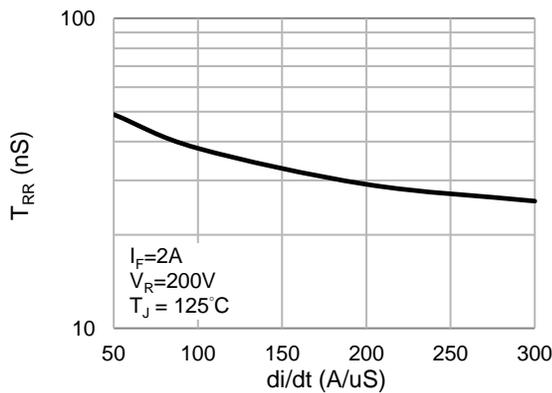


Fig.5 Typical Reverse Recovery Time Versus di/dt

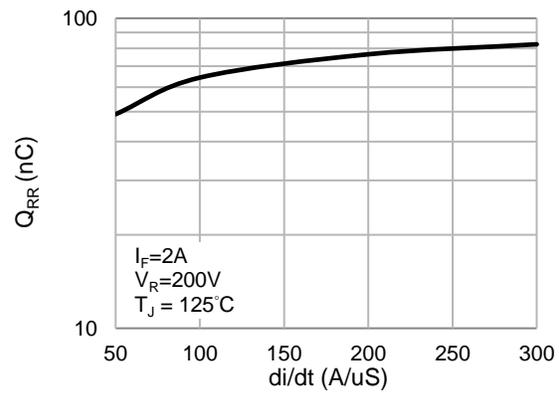


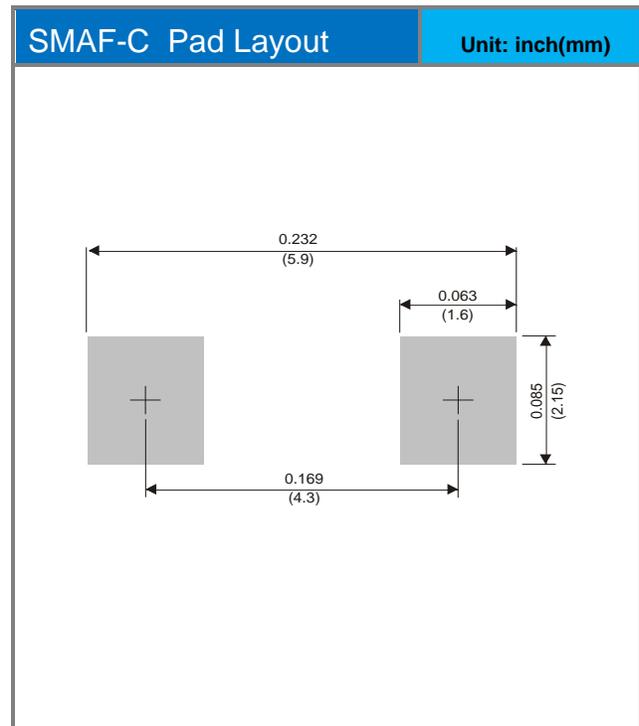
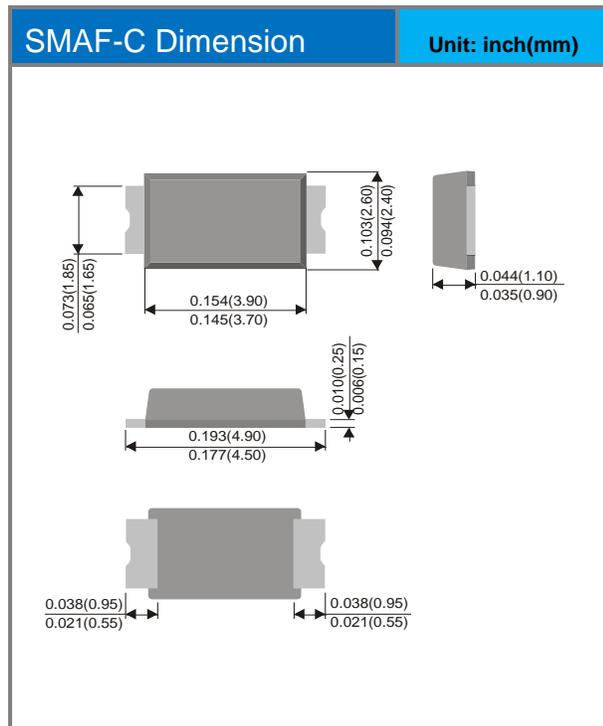
Fig.6 Typical Reverse Recovery Charge Versus di/dt

MER2DAFC-AU

Product and Packing Information

| Part No. | Package Type | Packing Type | Marking |
|-------------|--------------|--------------|---------|
| MER2DAFC-AU | SMAF-C | 3K / 7" Reel | MER2D |

Packaging Information & Mounting Pad Layout



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