

| | | |
|------|----------------|------|
| VRRM | IF (TC≤135°C) | QC |
| 650V | 38A | 87nC |

Applications:

- Switch Mode Power Supplies
- Power Factor Correction
- Motor drive, PV Inverter, Wind Power Station

Features:

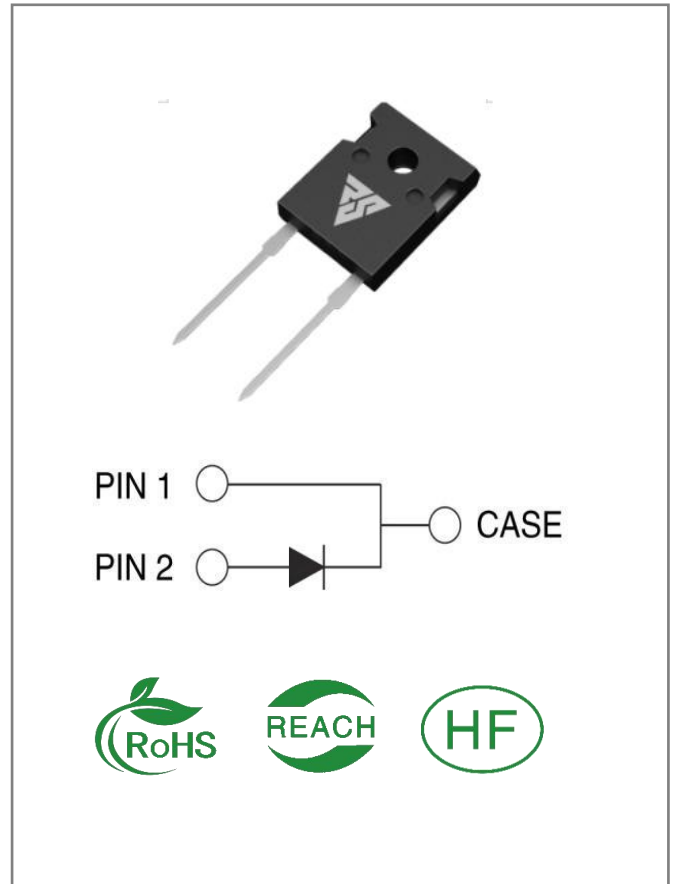
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on VF
- Temperature-independent Switching
- 175°C Operating Junction Temperature

Benefits:

- Replace Bipolar with Unipolar Device
- Reduction of Heat Sink Size
- Parallel Devices Without Thermal Runaway
- Essentially No Switching Losses

Ordering Information

| Part Number | Package | Marking | Packing | Qty. |
|-------------|----------|-----------|---------|--------|
| RSS30065W | TO-247-2 | RSS30065W | Tube | 30 PCS |



Maximum Ratings (T_J= 25°C unless otherwise specified)

| Symbol | Parameter | Value | Unit | Test Conditions | Note |
|--------------------------------------|--|----------------|------|---|-------|
| VRRM | Repetitive Peak Reverse Voltage | 650 | V | TC = 25°C | |
| VRSM | Surge Peak Reverse Voltage | 650 | V | TC = 25°C | |
| VR | DC Blocking Voltage | 650 | V | TC = 25°C | |
| IF | Forward Current | 80 38 30 | A | TC ≤ 25°C TC ≤ 135°C TC ≤ 148°C | Fig.3 |
| IFSM | Non-Repetitive Forward Surge Current | 234 208 | A | TC = 25°C, t _p = 10ms, Half Sine Wave TC = 110°C, t _p = 10ms, Half Sine Wave | |
| IFRM | Repetitive Peak Forward Surge Current | 205 | A | TC = 25°C, t _p = 10ms, Half Sine Wave | |
| P _{tot} | Power Dissipation | 310 | W | TC = 25°C | Fig.4 |
| TC | Maximum Case Temperature | 148 | °C | | |
| T _J ,T _{ST} G | Operating Junction and Storage Temperature | -55 to175 | °C | | |

Electrical Characteristics (T_J= 25°C unless otherwise specified)

| Symbol | Parameter | Typ. | Max. | Unit | Test Conditions | Note |
|----------------|---------------------------|--------------------|----------|------|--|-------|
| VF | Forward Voltage | 1.42 1.8 | 1.6 - | V | IF = 30A, T _J = 25°C IF = 30A, T _J = 175°C | Fig.1 |
| IR | Reverse Current | 7 21 | 100 - | μA | VR = 650V, T _J = 25°C VR = 650V, T _J = 175°C | Fig.2 |
| C | Total Capacitance | 1233 167 164 | / | pF | VR = 1V, T _J = 25°C, f = 1MHz VR = 200V, T _J = 25°C, f = 1MHz VR = 400V, T _J = 25°C, f = 1MHz | Fig.5 |
| QC | Total Capacitive Charge | 87 | / | nC | VR = 400V, | Fig.6 |
| E _c | Capacitance Stored Energy | 14 | | uJ | VR = 400V, | Fig.7 |

Thermal Characteristics (T_J= 25°C unless otherwise specified)

| Symbol | Parameter | Typ. | Unit | Note |
|------------------|--|-------|------|-------|
| R _{θJC} | Thermal Resistance from Junction to Case | 0.483 | °C/W | Fig.8 |

Typical Feature Curve

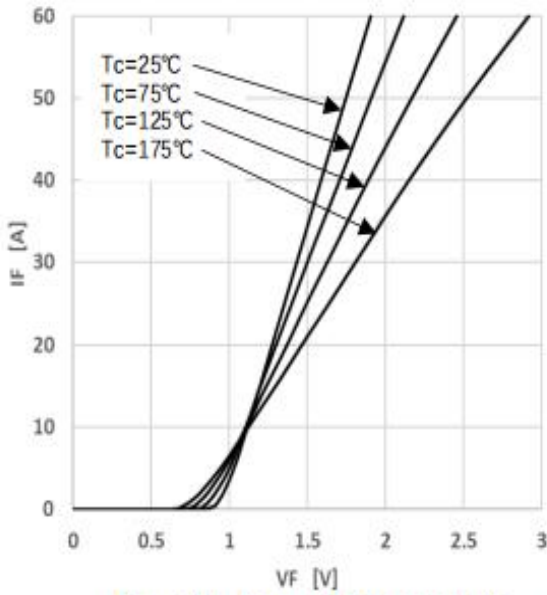


Figure 1 Forward Characteristics

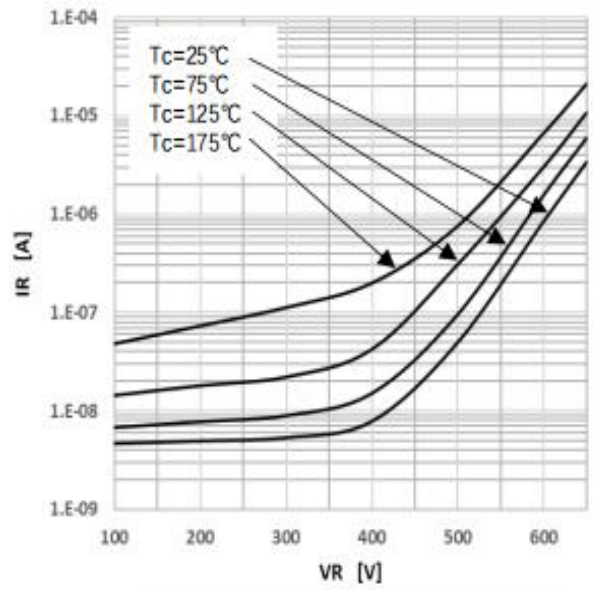


Figure 2 Reverse Characteristics

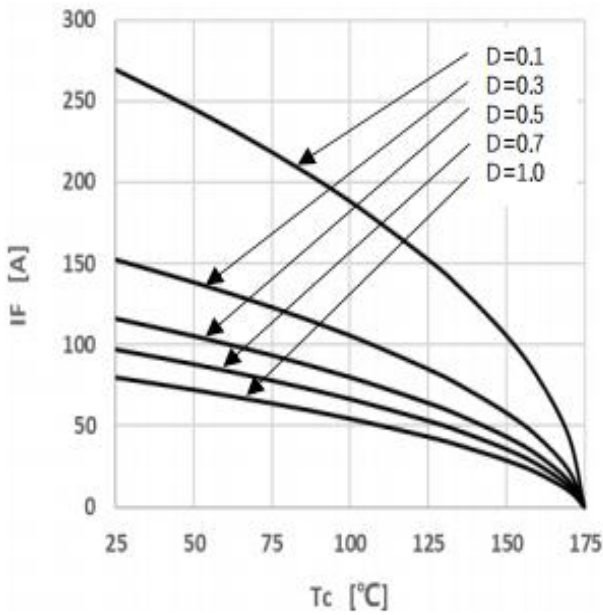


Figure 3 Peak Forward Current Derating

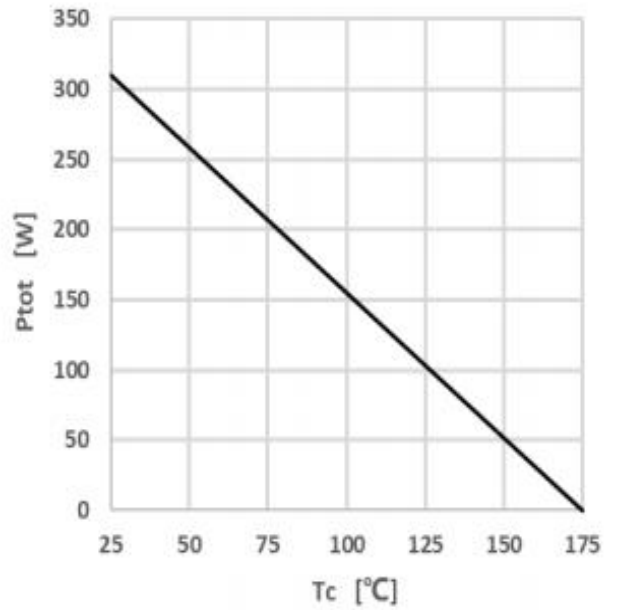


Figure 4 Power Dissipation

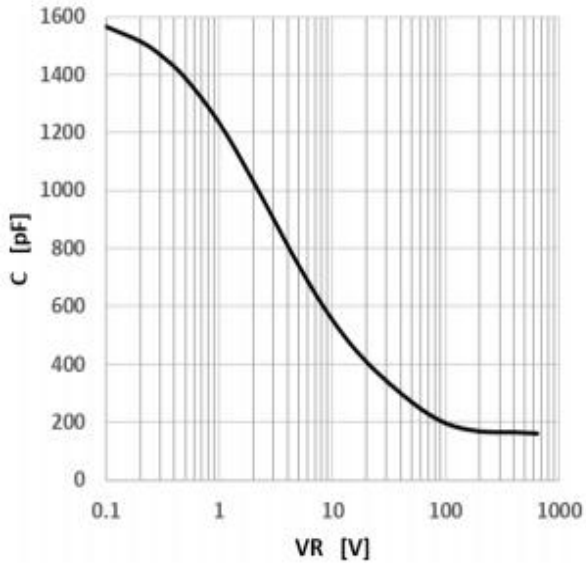


Figure 5 Capacitance vs. Reverse Voltage

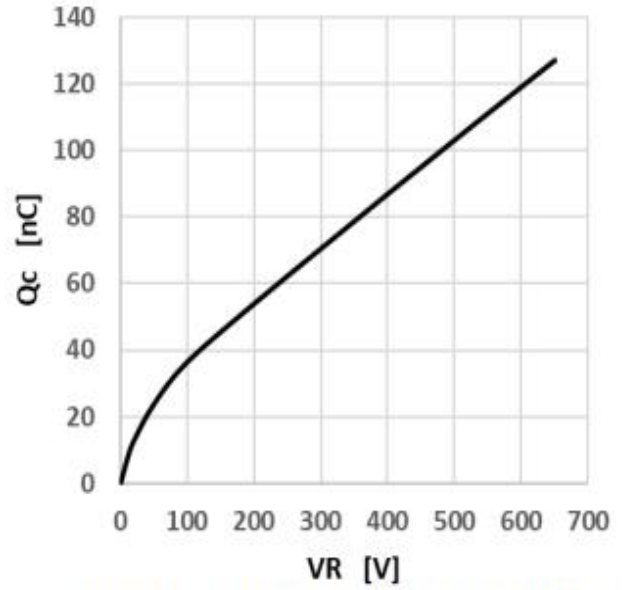


Figure 6 Capacitance Charge vs. Reverse Voltage

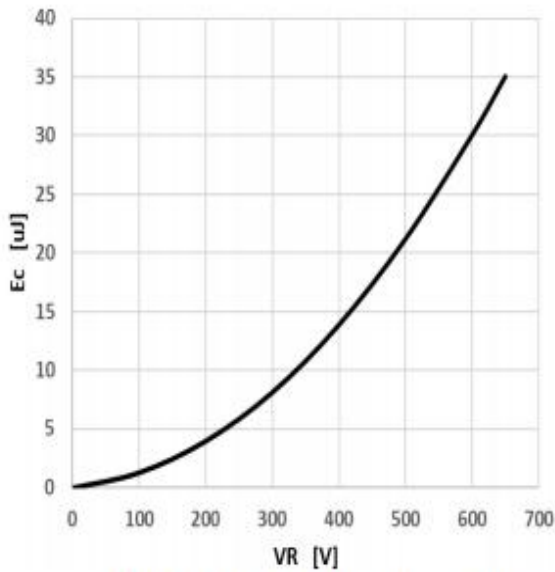


Figure 7 Capacitance Stored Energy

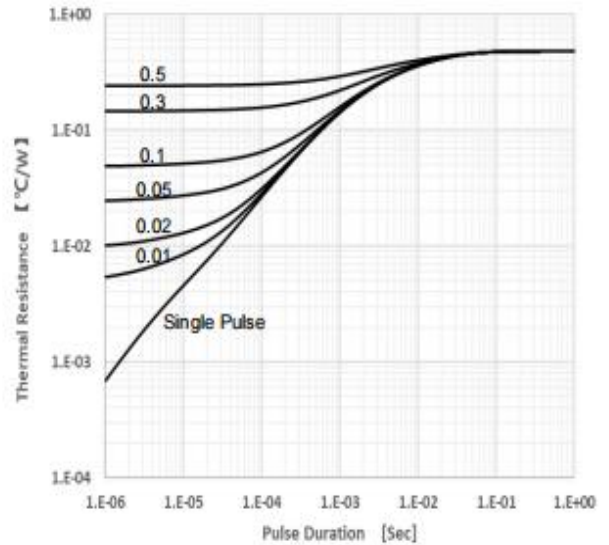
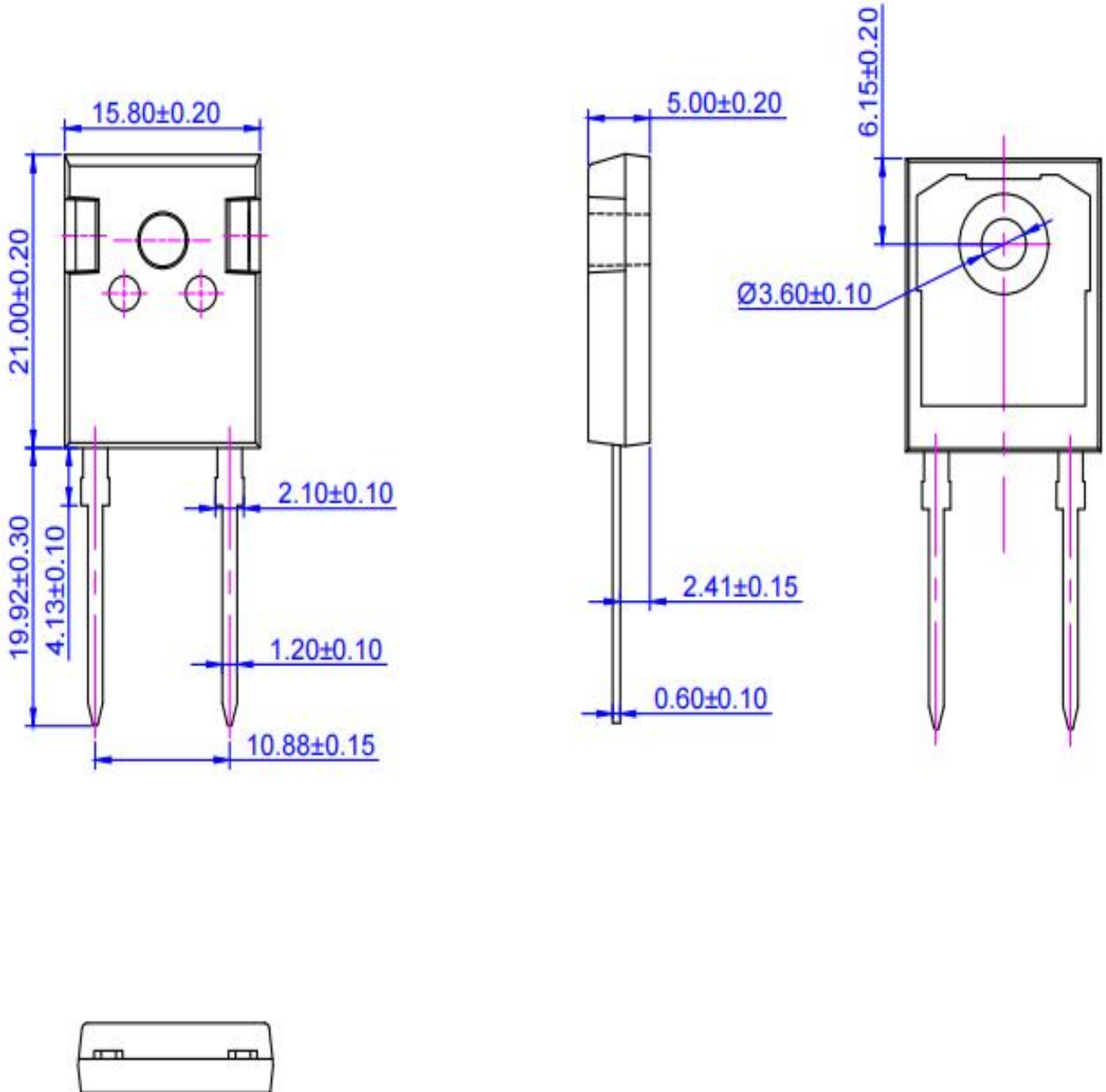


Figure 8 Transient Thermal Impedance

Package outline drawing(TO-247-2 Unit: mm)



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