

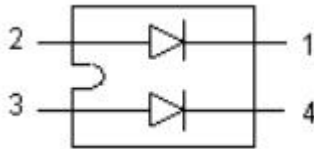
SK2U50-1200 Ultrafast Recovery Modules



Features

- Two fully independent diodes
- Fully insulated package
- Ultrafast, soft reverse recovery, with high operation
- Low forward voltage drop
- Optimized for power conversion: welding and industrial SMPS applications
- Easy to use and parallel
- Industry standard outline
- Designed and qualified for industrial level
- Base plate: Nickel plated; Terminals: Nickel plated

Circuit Diagram



Maximum Ratings (limiting values, $T_C = 25^\circ\text{C}$ unless otherwise specified)

| Characteristics | Symbol | Condition | Max. | Units |
|--|---------------------------------|----------------------------------|-------------------------------|-------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | - | 1200 | V |
| Average Rectified Forward Current | I_F | $T_C = 63^\circ\text{C}$, In DC | 25(Per Leg) 50(Per Device) | A |
| Peak One Cycle Non-Repetitive Surge Current (Per Leg) | I_{FSM} | 10 ms, half Sine pulse | 250 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|------------------------------------|-----------------|---|--------|------|-------|
| Forward Voltage Drop(Per Leg)* | V _{F1} | @ 25A, Pulse, T _J = 25 °C | 3.7 | 4.7 | V |
| | V _{F3} | @ 25A, Pulse, T _J = 125 °C | 3.1 | 3.5 | V |
| Reverse Current(Per Leg)* | I _{R1} | @V _R = rated V _R , T _J = 25 °C | 0.0002 | 0.25 | mA |
| | I _{R2} | @V _R = rated V _R , T _J = 150 °C | 0.02 | 2 | mA |
| Reverse recovery time(Per Leg) | t _{rr} | I _F =500mA, I _R =1A, and I _{rr} =250mA, T _J = 25 °C | 23 | 30 | ns |
| Isolation Breakdown Voltage(R.M.S) | Visol | Ac.50Hz, R.M.S; 1min, T _J = 25 °C | - | 2500 | V |
| | | Ac.50Hz, R.M.S; 1sec, T _J = 25 °C | - | 3500 | |

* Pulse width < 300 μs, duty cycle < 2%

Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|--|------------------|--------------|---------------|---------------|
| Junction Temperature | T _J | - | -55 to +150 | °C |
| Storage Temperature | T _{stg} | - | -55 to +150 | °C |
| Maximum Thermal Resistance Junction to Case(per leg) | R _{θJC} | DC operation | 0.74 | °C/W |
| Maximum Thermal Resistance Junction to Case(per package) | R _{θJC} | DC operation | 0.42 | °C/W |
| Mounting torque(M4) | M _D | - | 1.1-1.5/9-13 | Nm/ lb.in. |
| Terminal connection torque(M4) | | | 1.1-1.5/9-13 | |
| Typical Approximate Weight | wt | - | 30 | g |
| Case Style | SOT-227 | | | |

Ratings and Characteristics Curves

Figure1 Typical Forward Characteristics

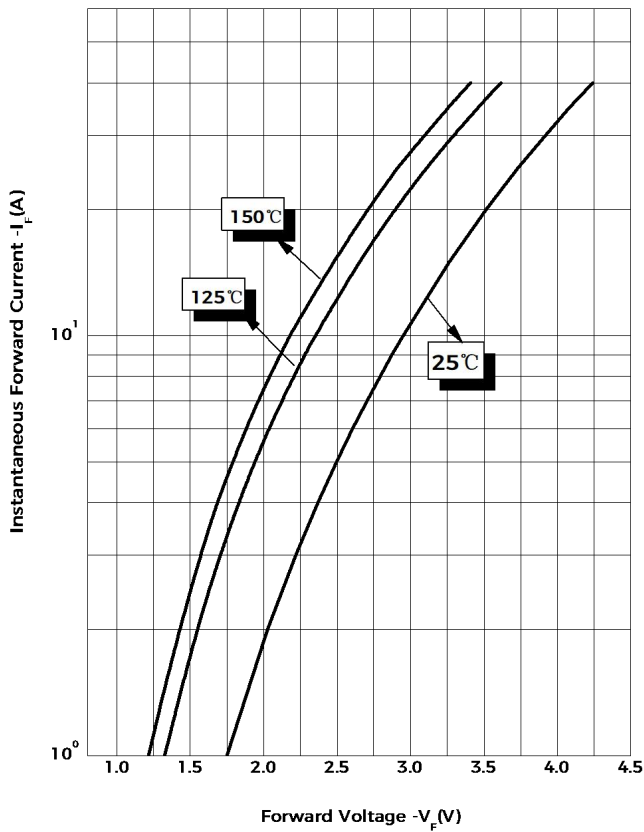


Figure 2 Typical Reverse Characteristics

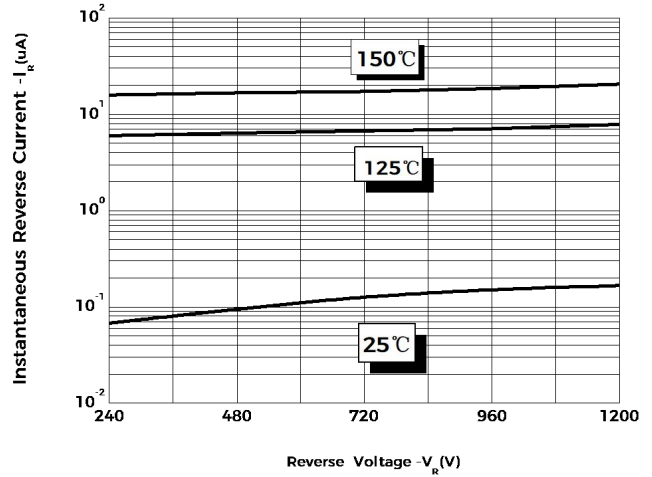
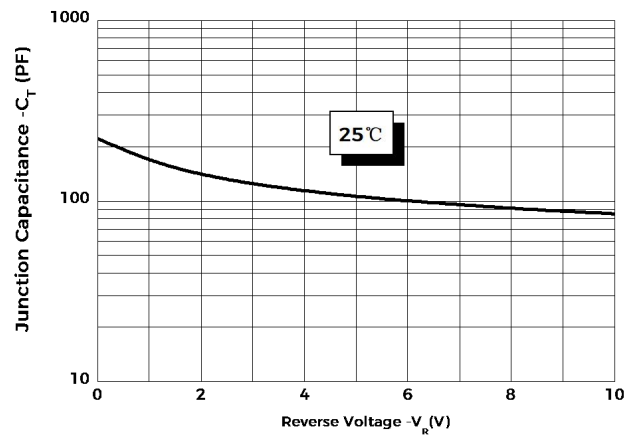


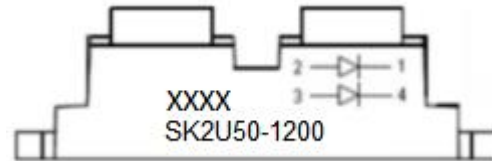
Figure 3 Typical Junction Capacitance



Ordering Information

| Device | Package | Shipping |
|-------------|----------------------|-------------|
| SK2U50-1200 | SOT-227 (Pb-Free) | 36pcs /BULK |

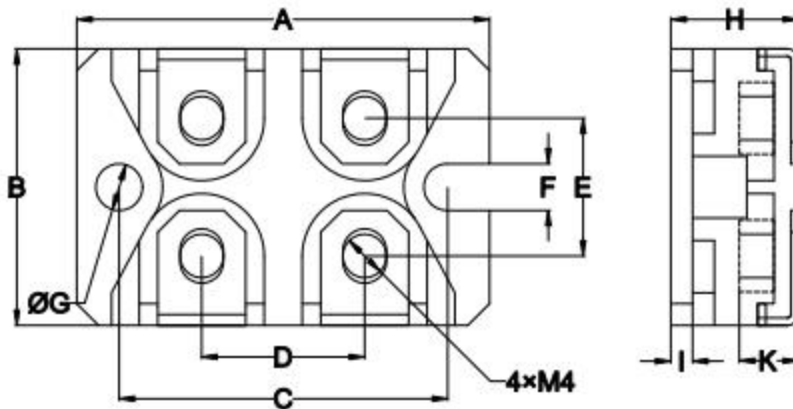
Marking Diagram



Where XXXX is YYWW

- S = SMC's Power Module
- K = SOT-227 Package
- 2 = Circuit Configuration
- U = Ultrafast Rectifier
- 50 = Forward Current 50A
- 1200 = Reverse Voltage (1200V)
- YY = Year
- WW = Week

Mechanical Dimensions SOT-227(Millimeters)



| SYMBOL | Dimensions in millimeters | |
|--------|---------------------------|-------|
| | Min. | Max. |
| A | 37.8 | 38.2 |
| B | 24.8 | 25.21 |
| C | 29.9 | 30.55 |
| D | 14.5 | 15.5 |
| E | 12.2 | 13.45 |
| F | 4.1 | 4.31 |
| G | Φ4.1 | Φ4.31 |
| H | 11 | 12.5 |
| I | 1.9 | 2.1 |
| K | 4.3 | 6.5 |

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