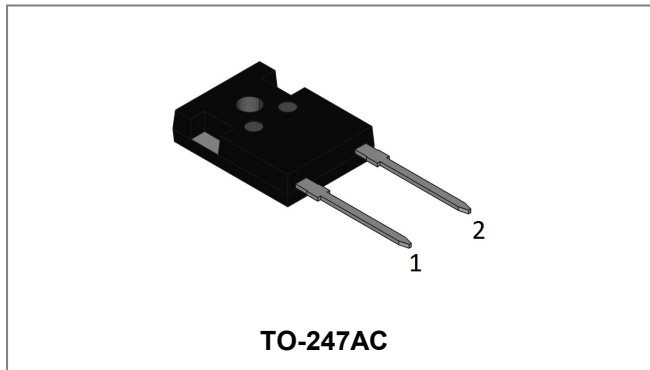


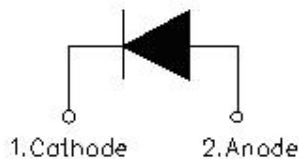
SDUR60H120W ULTRAFAST RECTIFIER



Applications:

- Antiparallel diode for high frequency switching devices
- Anti saturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- Inductive heating and melting
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

Circuit Diagram



Features:

- Ultra-Fast switching
- High current capability
- Low reverse leakage current
- High surge current capability
- Terminals finish: 100% Pure Tin
- This is a Pb – free device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Maximum Ratings@ $T_A=25^\circ\text{C}$ 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 | $I_{F(AV)}$ | 50% duty cycle @ $T_c=103^\circ\text{C}$, rectangular wave form | 60 | A |
| Peak One Cycle Non-Repetitive Surge Current | I_{FSM} | 8.3ms, Half Sine pulse | 500 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|--------------------------|------------------|--|------|------|-------|
| Forward Voltage Drop* | V _{F1} | @ 60A, Pulse, T _J = 25°C | 2.70 | 3.20 | V |
| | V _{F2} | @ 60A, Pulse, T _J = 125°C | 2.20 | 2.50 | V |
| Reverse Current* | I _{R1} | @V _R = rated V _R , T _J = 25°C | 0.40 | 10 | uA |
| | I _{R2} | @V _R = rated V _R , T _J = 125°C | 0.14 | 4 | mA |
| Reverse Recovery Time | t _{rr} | I _F =500mA, I _R =1A, and I _{rm} =250mA, T _J = 25°C | 61 | 75 | ns |
| Reverse Recovery Time | t _{rr} | I _F = 1A, diF/dt = 50A/μs, V _R = 30V, T _J = 25°C | 52 | - | ns |
| Reverse Recovery Charge | Q _{rr} | | 44 | - | nC |
| Reverse Recovery Current | I _{RRM} | | 1.7 | - | A |
| Reverse Recovery Time | t _{rr} | I _F = 30A, diF/dt = 200A/μs, V _R = 600V, T _J = 25°C | 188 | - | ns |
| Reverse Recovery Charge | Q _{rr} | | 489 | - | nC |
| Reverse Recovery Current | I _{RRM} | | 5.2 | - | A |
| Reverse Recovery Time | t _{rr} | I _F = 30A, diF/dt = 200A/μs, V _R = 600V, T _J = 125°C | 288 | - | ns |
| Reverse Recovery Charge | Q _{rr} | | 1786 | - | nC |
| Reverse Recovery Current | I _{RRM} | | 12.4 | - | A |

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

Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|------------------|--------------|---------------|-------|
| Junction Temperature | T _J | - | -55 to +175 | °C |
| Storage Temperature | T _{stg} | - | -55 to +175 | °C |
| Typical Thermal Resistance Junction to Case | R _{θJC} | DC operation | 0.80 | °C/W |
| Approximate Weight | wt | - | 6.28 | g |
| Case Style | TO-247AC | | | |

Ratings and Characteristics Curves

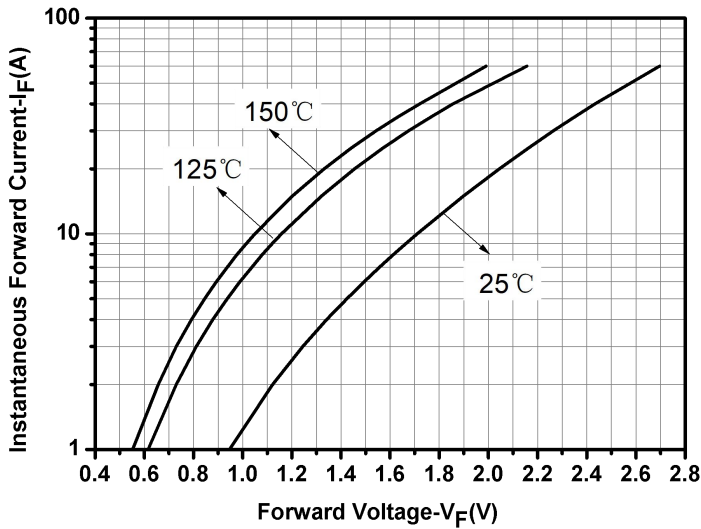


Fig.1-Typical Forward Voltage Characteristics

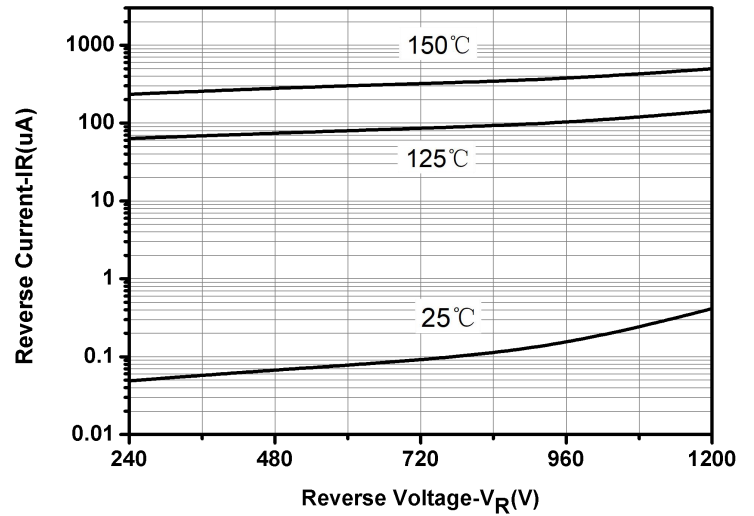


Fig.2-Typical Reverse Characteristics

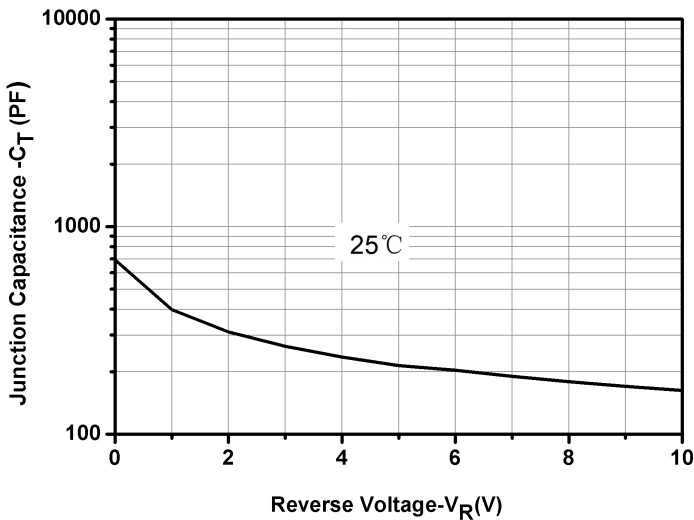


Fig.3-Capacitance vs. Reverse Voltage

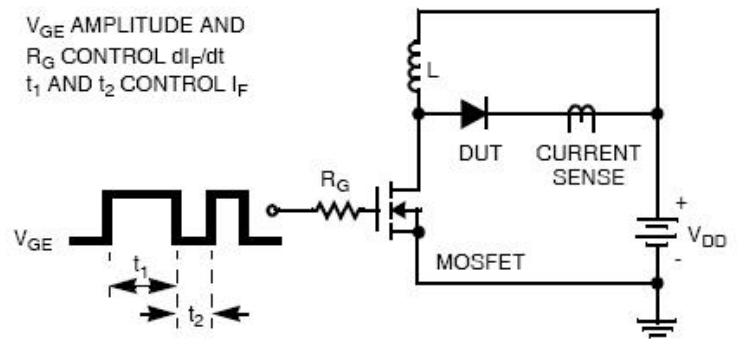
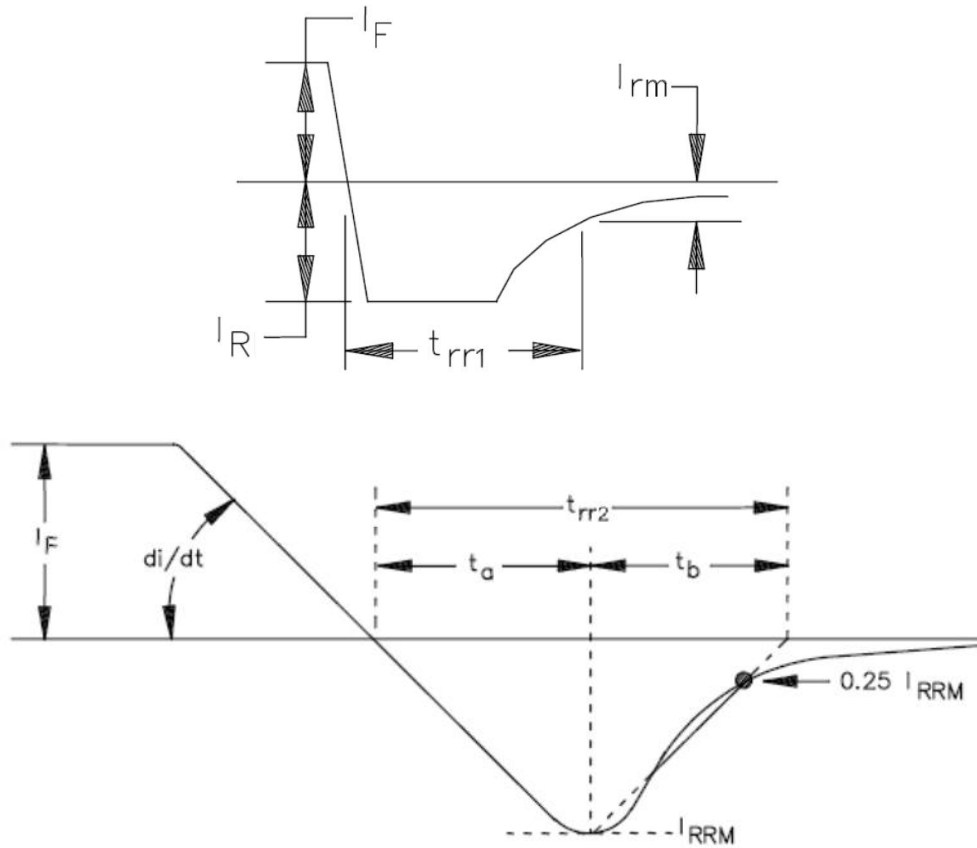


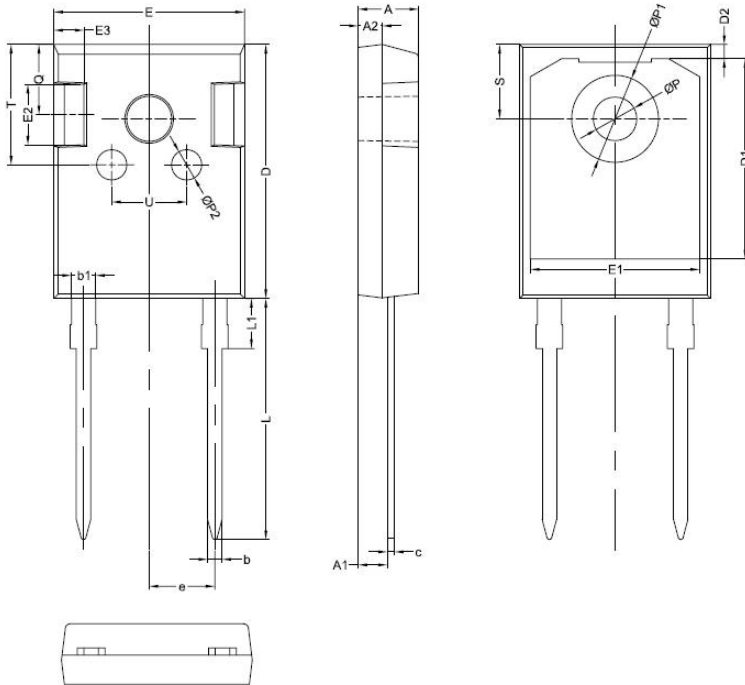
Fig.4-Diode Test Circuit



Note: 1. t_{rr1} MIL-STD-750 Test Method 4031, condition "B".
2. t_{rr2} MIL-STD-750 Test Method 4031, condition "D".

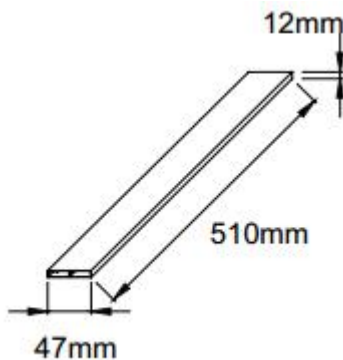
Fig.5-Reverse Recovery Waveform

Mechanical Dimensions TO-247AC



| SYMBOL | Millimeters | | |
|--------|-------------|-------|-------|
| | MIN. | TYP. | MAX. |
| A | 4.80 | 5.00 | 5.20 |
| A1 | 2.20 | 2.41 | 2.61 |
| A2 | 1.90 | 2.00 | 2.10 |
| b | 1.10 | 1.20 | 1.35 |
| b1 | 1.80 | 2.00 | 2.20 |
| c | 0.50 | 0.60 | 0.75 |
| D | 20.30 | 21.00 | 21.20 |
| D1 | | 16.58 | |
| D2 | | 1.17 | |
| E | 15.60 | 15.80 | 16.00 |
| E1 | | 14.02 | |
| E2 | | 5.00 | |
| E3 | | 2.50 | |
| e | | 5.44 | |
| L | 19.42 | 19.92 | 20.42 |
| L1 | | 4.13 | |
| P | 3.50 | 3.60 | 3.70 |
| P1 | 7.1 | 7.19 | 7.40 |
| P2 | | 2.50 | |
| Q | | 5.80 | |
| S | 6.05 | 6.15 | 6.25 |
| T | | 10.00 | |
| U | | 6.20 | |

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

- SDUR = Device Type
- 60 = Forward Current (60A)
- H = H
- 120 = Reverse Voltage (1200V)
- W = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

Cautions: Molding resin
Epoxy resin UL:94V-0

Ordering Information:

| Device | Package | Shipping |
|-------------|-------------------|--------------|
| SDUR60H120W | TO-247AC(Pb-Free) | 25pcs / tube |

Technical Data
Data Sheet N2576, Rev.-



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