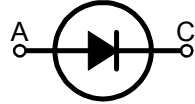
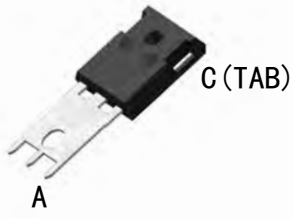
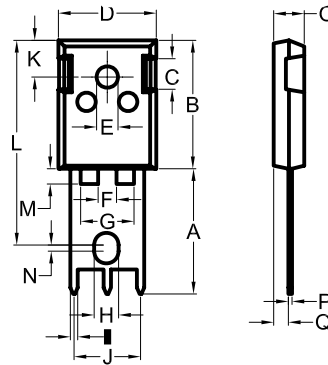


SUR15040SR

Ultra Fast Recovery Epitaxial Diodes



Dimensions TO-247SR



| Dim | Millimeter s | | Inches | |
|-----|--------------|-------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 19.81 | 20.32 | 0.78 | 0.8 |
| B | 20.8 | 21.46 | 0.819 | 0.845 |
| C | 4.32 | 5.49 | 0.17 | 0.216 |
| D | 15.75 | 16.26 | 0.61 | 0.64 |
| E | 3.55 | 3.65 | 0.14 | 0.144 |
| F | 2.95 | 3.05 | 0.116 | 0.12 |
| G | 8.67 | 8.77 | 0.34 | 0.35 |
| H | 4 | 4.2 | 0.15 | 0.16 |
| I | 1 | 1.4 | 0.04 | 0.055 |
| J | 10.8 | 11 | 0.426 | 0.433 |
| K | 5.4 | 6.2 | 0.212 | 0.244 |
| L | 33.43 | 33.53 | 1.316 | 1.32 |
| M | | 2.5 | | 0.1 |
| N | 1 | 1.1 | 0.039 | 0.04 |
| O | 4.7 | 5.3 | 0.185 | 0.209 |
| P | 0.4 | 0.8 | 0.016 | 0.031 |
| Q | 1.5 | 2.49 | 0.087 | 0.102 |

A=Anode, C(TAB)=Cathode

| | V_{RSM} | V_{RRM} |
|-------------------|-----------|-----------|
| | V | V |
| SUR15040GF | 400 | 400 |

| Symbol | Test Conditions | Maximum Ratings | Unit |
|------------|---|---|-------------|
| I_{FRMS} | $T_{VJ}=T_{VJM}$ | 225 | A |
| I_{FAVM} | $T_C=105^{\circ}C$; rectangular, $d=0.5$ | 150 | |
| I_{FRM} | $t_p < 10\mu s$; rep. rating, pulse width limited by T_{VJM} | TBD | |
| I_{FSM} | $T_{VJ}=45^{\circ}C$ | $t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine | A |
| | $T_{VJ}=150^{\circ}C$ | $t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine | |
| I^2t | $T_{VJ}=45^{\circ}C$ | $t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine | A^2s |
| | $T_{VJ}=150^{\circ}C$ | $t=10ms$ (50Hz), sine $t=8.3ms$ (60Hz), sine | |
| T_{VJ} | | -40...+175 | $^{\circ}C$ |
| T_{VJM} | | 175 | |
| T_{stg} | | -40...+175 | |
| P_{tot} | $T_C=25^{\circ}C$ | 150 | W |
| M_d | Mounting torque | 1.2...2.4 | Nm |
| Weight | | 6 | g |



SUR15040SR

Ultra Fast Recovery Epitaxial Diodes

| Symbol | Test Conditions | Characteristic Values | | Unit |
|---|---|-----------------------|------|------------------|
| | | typ. | max. | |
| I_R | $T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$ | | 50 | μA |
| | $T_{VJ}=25^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$ | | 30 | μA |
| | $T_{VJ}=150^{\circ}\text{C}; V_R=V_{RRM}$ | | 4 | mA |
| V_F | $I_F=150\text{A}; T_{VJ}=175^{\circ}\text{C}$ | | 1.1 | V |
| | $T_{VJ}=25^{\circ}\text{C}$ | | 1.3 | |
| V_{TO} | For power-loss calculations only | | 1.01 | V |
| r_T | $T_{VJ}=T_{VJM}$ | | 7.1 | $\text{m}\Omega$ |
| R_{thJC} R_{thCK} R_{thJA} | | 0.2 | 0.35 | K/W |
| t_{rr} | $I_F=1\text{A}; -di/dt=100\text{A}/\mu\text{s}; V_R=30\text{V}; T_{VJ}=25^{\circ}\text{C}$ | 35 | 60 | ns |
| I_{RM} | $V_R=350\text{V}; I_F=30\text{A}; -di_F/dt=240\text{A}/\mu\text{s}; L \leq 0.05\mu\text{H}; T_{VJ}=100^{\circ}\text{C}$ | 20 | | A |

FEATURES

- * Lead -Free Plating
- * Very short recovery time
- * Extremely low switching losses
- * Low I_{RM}-values
- * Soft recovery behaviour
- * Screw Mounting only

APPLICATIONS

- * Antiparallel diode for high frequency switching devices
- * Antisaturation 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

ADVANTAGES

- * Reduced RFI and EMI
- * Higher Frequency Operation
- * Reduced Snubbing
- * Reduced Parts Count

Sirectifier[®]

SUR15040SR

Ultra Fast Recovery Epitaxial Diodes

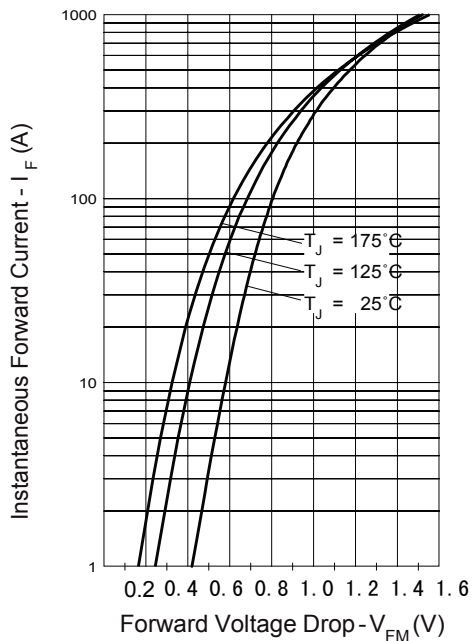


Fig. 1 - Maximum Forward Voltage Drop Characteristics

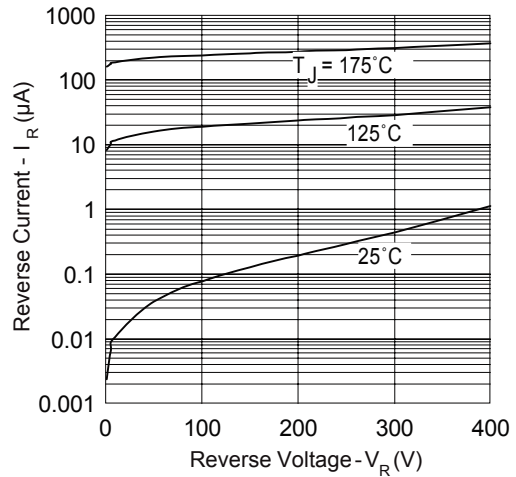


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

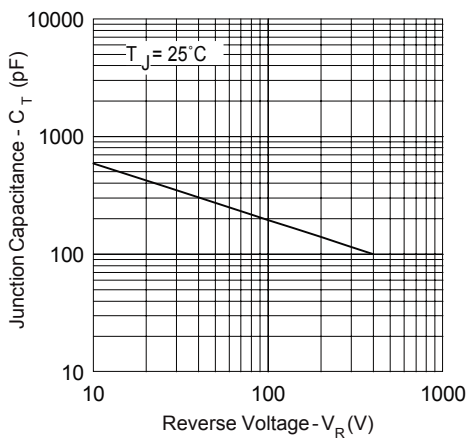


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

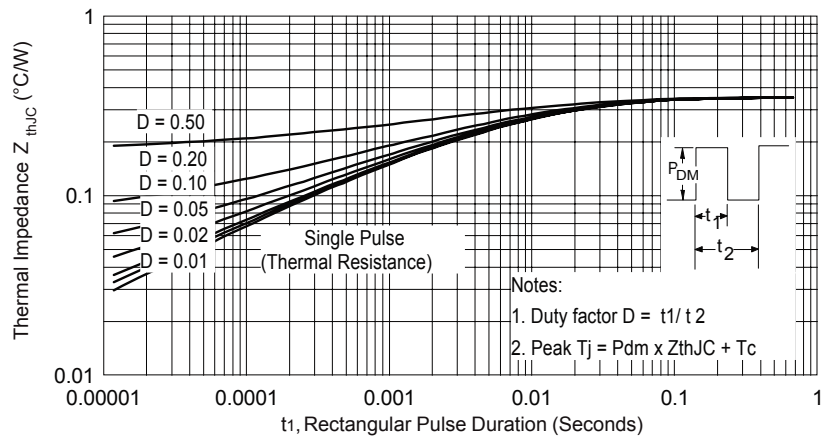


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristic



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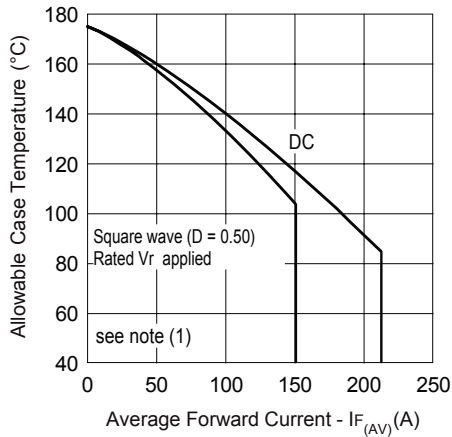


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current

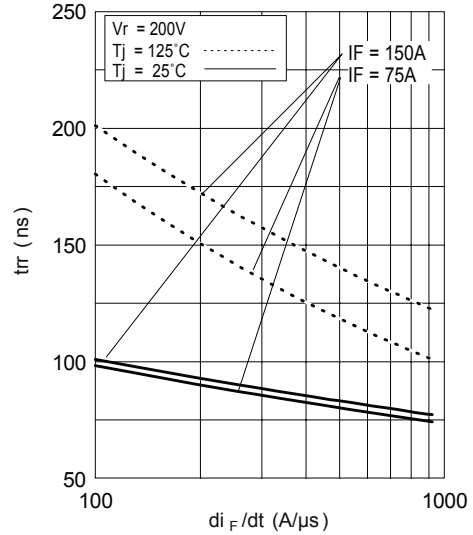


Fig. 7 - Typical Reverse Recovery Time vs. di_F/dt

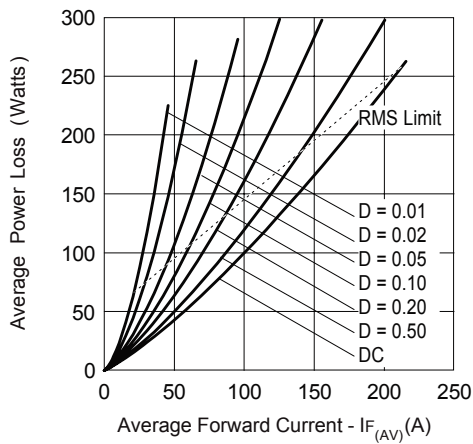


Fig. 6 - Forward Power Loss Characteristics

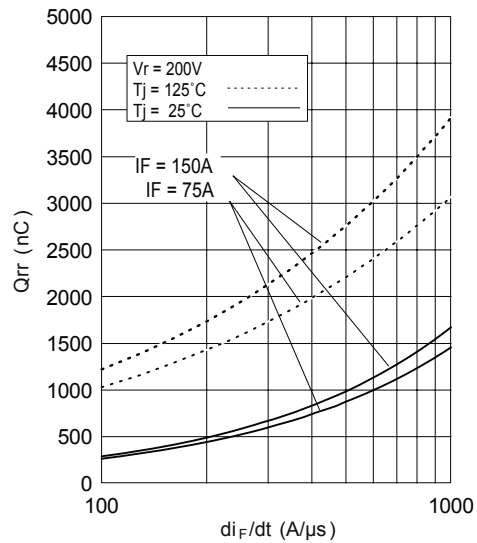


Fig. 8 - Typical Stored Charge vs. di_F/dt

