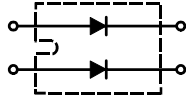
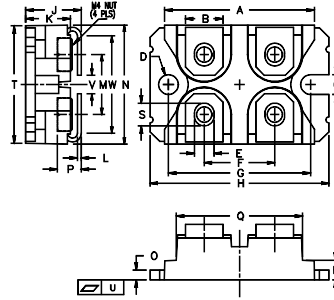


SUR2x30-04, SUR2x30-06

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diodes



Dimensions SOT-227(ISOTOP)



| Dim. | Millimeter | | Inches | |
|------|------------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 31.50 | 31.88 | 1.240 | 1.255 |
| B | 7.80 | 8.20 | 0.307 | 0.323 |
| C | 4.09 | 4.29 | 0.161 | 0.169 |
| D | 4.09 | 4.29 | 0.161 | 0.169 |
| E | 4.09 | 4.29 | 0.161 | 0.169 |
| F | 14.91 | 15.11 | 0.587 | 0.595 |
| G | 30.12 | 30.30 | 1.186 | 1.193 |
| H | 37.80 | 38.20 | 1.489 | 1.505 |
| J | 11.68 | 12.22 | 0.460 | 0.481 |
| K | 8.92 | 9.60 | 0.351 | 0.378 |
| L | 0.76 | 0.84 | 0.030 | 0.033 |
| M | 12.60 | 12.85 | 0.496 | 0.506 |
| N | 25.15 | 25.42 | 0.990 | 1.001 |
| O | 1.98 | 2.13 | 0.078 | 0.084 |
| P | 4.95 | 5.97 | 0.195 | 0.235 |
| Q | 26.54 | 26.90 | 1.045 | 1.059 |
| R | 3.94 | 4.42 | 0.155 | 0.174 |
| S | 4.72 | 4.85 | 0.186 | 0.191 |
| T | 24.59 | 25.07 | 0.968 | 0.987 |
| U | -0.05 | 0.1 | -0.002 | 0.004 |
| V | 3.30 | 4.57 | 0.130 | 0.180 |
| W | 0.780 | 0.830 | 0.031 | 0.033 |

| | V_{RSM} | V_{RRM} |
|-------------------|-----------|-----------|
| | V | V |
| SUR2x30-04 | 400 | 400 |
| SUR2x30-06 | 600 | 600 |

| Symbol | Test Conditions | Maximum Ratings | Unit |
|------------|---|---|-------------|
| I_{FRMS} | $T_{VJ}=T_{VJM}$ | 70 | A |
| I_{FAVM} | $T_C=85^{\circ}C$; rectangular, $d=0.5$ | 30 | |
| I_{FRM} | $t_p < 10\mu s$; rep. rating, pulse width limited by T_{VJM} | 375 | |
| 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...+150 | $^{\circ}C$ |
| T_{VJM} | | 150 | |
| T_{stg} | | -40...+150 | |
| P_{tot} | $T_C=25^{\circ}C$ | 100 | W |
| V_{ISOL} | 50/60Hz, RMS $I_{ISOL} \leq 1mA$ | 2500 | V~ |
| M_d | Mounting torque | 1.5/13 | Nm/lb.in. |
| | Terminal connection torque (M4) | 1.5/13 | |
| Weight | | 30 | g |

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SUR2x30-04, SUR2x30-06

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diodes

| Symbol | Test Conditions | Characteristic Values | | Unit |
|--|---|-----------------------|------|------|
| | | typ. | max. | |
| I_R | $T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$ | | 100 | uA |
| | $T_{VJ}=25^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$ | | 50 | uA |
| | $T_{VJ}=125^{\circ}\text{C}; V_R=0.8 \cdot V_{RRM}$ | | 7 | mA |
| V_F | $I_F=30\text{A}; T_{VJ}=150^{\circ}\text{C}$ | | 1.4 | V |
| | $T_{VJ}=25^{\circ}\text{C}$ | | 1.6 | |
| V_{TO} | For power-loss calculations only | | 1.01 | V |
| r_T | $T_{VJ}=T_{VJM}$ | | 7.1 | mΩ |
| R_{thJC} R_{thCK} | | 0.05 | 1.25 | 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 | 50 | ns |
| I_{RM} | $V_R=350\text{V}; I_F=30\text{A}; -di_F/dt=240\text{A}/\mu\text{s}; L \leq 0.05\mu\text{H}; T_{VJ}=100^{\circ}\text{C}$ | 10 | 11 | A |

FEATURES

- * International standard package miniBLOC (ISOTOP compatible)
- * Isolation voltage 2500 V~
- * 2 independent FRED in 1 package
- * Glass passivated chips
- * Very short recovery time
- * Extremely low switching losses
- * Low I_{RM}-values
- * Soft recovery behaviour
- * UL File NO.E310749
- * RoHS compliant

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

- * High reliability circuit operation
- * Low voltage peaks for reduced protection circuits
- * Low noise switching
- * Low losses
- * Operating at lower temperature or space saving by reduced cooling

Sirectifier[®]

SUR2x30-04, SUR2x30-06

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diodes

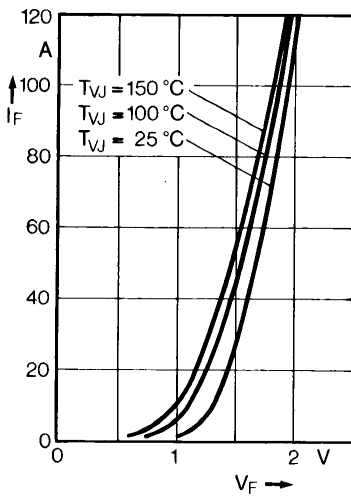


Fig. 1 Forward current versus voltage drop.

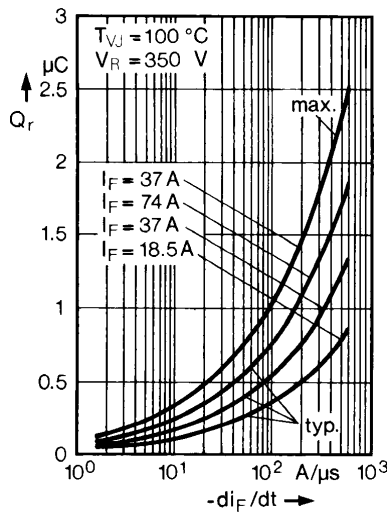


Fig. 2 Recovery charge versus $-di_F/dt$.

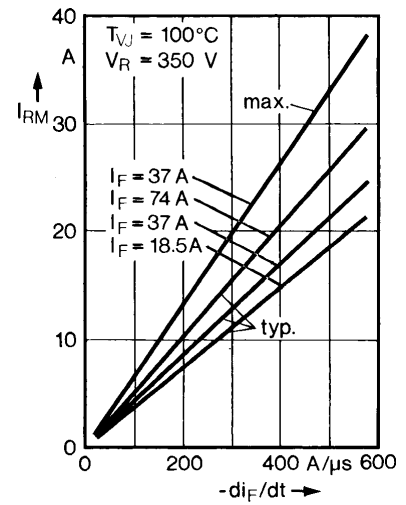


Fig. 3 Peak reverse current versus $-di_F/dt$.

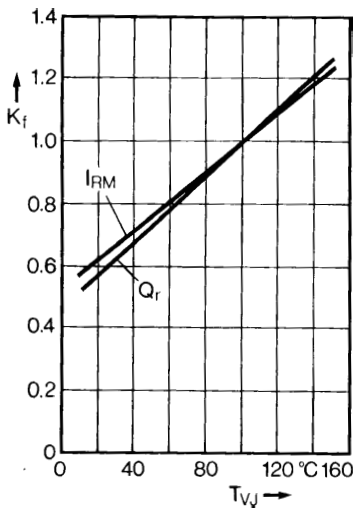


Fig. 4 Dynamic parameters versus junction temperature.

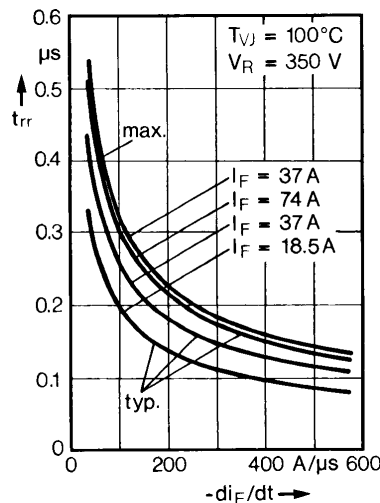


Fig. 5 Recovery time versus $-di_F/dt$.

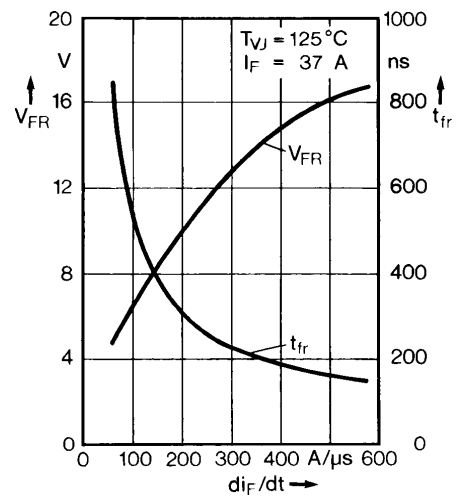


Fig. 6 Peak forward voltage versus di_F/dt .

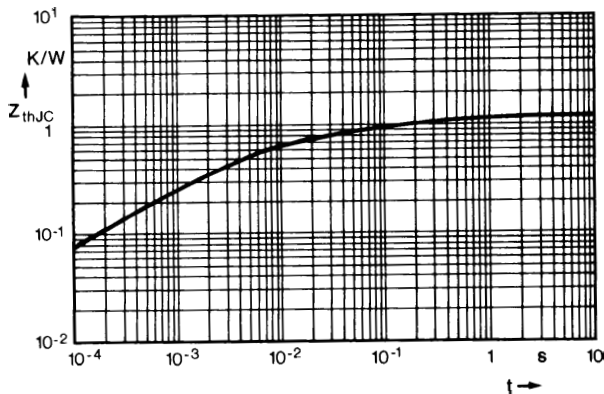


Fig. 7 Transient thermal impedance junction to case.

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