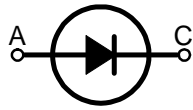


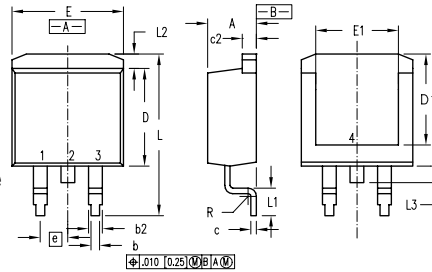
# SUR2960S

## Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diodes

C(TAB)



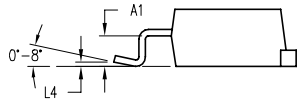
Dimensions TO-263(D<sup>2</sup>PAK)



| Dim. | Millimeter |       | Inches   |      |
|------|------------|-------|----------|------|
|      | Min.       | Max.  | Min.     | Max. |
| A    | 4.06       | 4.83  | .160     | .190 |
| A1   | 2.03       | 2.79  | .080     | .110 |
| b    | 0.51       | 0.99  | .020     | .039 |
| b2   | 1.14       | 1.40  | .045     | .055 |
| c    | 0.46       | 0.74  | .018     | .029 |
| c2   | 1.14       | 1.40  | .045     | .055 |
| D    | 8.64       | 9.65  | .340     | .380 |
| D1   | 8.00       | 8.89  | .315     | .350 |
| E    | 9.65       | 10.29 | .380     | .405 |
| E1   | 6.22       | 8.13  | .245     | .320 |
| e    | 2.54 BSC   |       | .100 BSC |      |
| L    | 14.61      | 15.88 | .575     | .625 |
| L1   | 2.29       | 2.79  | .090     | .110 |
| L2   | 1.02       | 1.40  | .040     | .055 |
| L3   | 1.27       | 1.78  | .050     | .070 |
| L4   | 0          | 0.20  | 0        | .008 |
| R    | 0.46       | 0.74  | .018     | .029 |

A=Anode, NC= No connection, TAB=Cathode

1. Gate
2. Collector
3. Emitter
4. Collector Bottom Side



|                 | V <sub>RSM</sub><br>V | V <sub>RRM</sub><br>V |
|-----------------|-----------------------|-----------------------|
| <b>SUR2960S</b> | 600                   | 600                   |

| Symbol  | Test Conditions  | Maximum Ratings                             | Unit             |
|---|--|---|------------------|
| <b>I<sub>FRMS</sub></b>   | T <sub>VJ</sub> =T <sub>VJM</sub>  | 70  | A                |
| <b>I<sub>FAVM</sub></b>   | T <sub>C</sub> =85°C; rectangular, d=0.5                                   | 29  |                  |
| <b>I<sub>FRM</sub></b>  | t <sub>p</sub> <10us; rep. rating, pulse width limited by T <sub>VJM</sub> | 375   |                  |
| <b>I<sub>FSM</sub></b>  | T <sub>VJ</sub> =45°C  | t=10ms (50Hz), sine<br>t=8.3ms (60Hz), sine | A                |
|   | T <sub>VJ</sub> =150°C   | t=10ms(50Hz), sine<br>t=8.3ms(60Hz), sine   |                  |
| <b>i<sup>2</sup>t</b>   | T <sub>VJ</sub> =45°C  | t=10ms (50Hz), sine<br>t=8.3ms (60Hz), sine | A <sup>2</sup> s |
|   | T <sub>VJ</sub> =150°C   | t=10ms(50Hz), sine<br>t=8.3ms(60Hz), sine   |                  |
| <b>T<sub>VJ</sub></b><br><b>T<sub>VJM</sub></b><br><b>T<sub>stg</sub></b> |  | -40...+150<br>150<br>-40...+150             | °C               |
| <b>P<sub>tot</sub></b>  | T <sub>C</sub> =25°C   | 125   | W                |
| <b>M<sub>d</sub></b>  | Mounting torque  | 0.4...0.6                                   | Nm               |
| <b>Weight</b>   |  | 2   | g                |



# SUR2960S

## Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diodes

| Symbol                  | Test Conditions  | Characteristic Values |      | Unit       |
|-------------------------|--|-----------------------|------|------------|
|                         |  | typ.                  | max. |            |
| <b>I<sub>R</sub></b>    | $T_{VJ}=25^{\circ}\text{C}; V_R=V_{RRM}$   |                       | 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         |
| <b>V<sub>F</sub></b>    | $I_F=29\text{A}; T_{VJ}=150^{\circ}\text{C}$   |                       | 1.4  | V          |
|                         | $T_{VJ}=25^{\circ}\text{C}$  |                       | 1.6  |            |
| <b>V<sub>TO</sub></b>   | For power-loss calculations only   |                       | 1.01 | V          |
| <b>r<sub>T</sub></b>    | $T_{VJ}=T_{VJM}$   |                       | 7.1  | m $\Omega$ |
| <b>R<sub>thJC</sub></b> |  |                       | 1.0  | K/W        |
| <b>t<sub>rr</sub></b>   | $I_F=1\text{A}; -di/dt=100\text{A/us}; V_R=30\text{V}; T_{VJ}=25^{\circ}\text{C}$                              | 35                    | 50   | ns         |
| <b>I<sub>RM</sub></b>   | $V_R=350\text{V}; I_F=30\text{A}; -di_F/dt=240\text{A/us}; L \leq 0.05\mu\text{H}; T_{VJ}=100^{\circ}\text{C}$ | 10                    | 11   | A          |

### FEATURES

- \* International standard package
- \* Glass passivated chips
- \* Very short recovery time
- \* Extremely low losses at high switching frequencies
- \* Low I<sub>RM</sub>-values
- \* Soft recovery behaviour
- \* RoHS compliant

### 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

### 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**<sup>®</sup>