

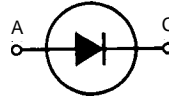
Super Fast Recovery Diode

DSDI 60

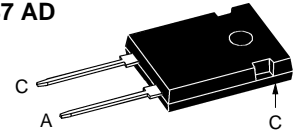
$I_{FAVM} = 63 \text{ A}$
 $V_{RRM} = 1400-1800 \text{ V}$
 $t_{rr} = 40 \text{ ns}$

Preliminary Data

| V_{RSM} | V_{RRM} | Type |
|-----------|-----------|-------------|
| V | V | |
| 1400 | 1400 | DSDI 60-14A |
| 1600 | 1600 | DSDI 60-16A |
| 1800 | 1800 | DSDI 60-18A |



TO-247 AD



A = Anode, C = Cathode

| Symbol | Test Conditions | Maximum Ratings | |
|--------------|--|-----------------|----------------------|
| I_{FRMS} | $T_{VJ} = T_{VJM}$ | 100 | A |
| I_{FAVM} ① | $T_C = 60^\circ\text{C}$; rectangular, $d = 0.5$ | 63 | A |
| I_{FRM} | $t_p < 10 \mu\text{s}$; rep. rating, pulse width limited by T_{VJM} | 800 | A |
| I_{FSM} | $T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine | 500 | A |
| | $t = 8.3 \text{ ms}$ (60 Hz), sine | 540 | A |
| | $T_{VJ} = 150^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine | 450 | A |
| | $t = 8.3 \text{ ms}$ (60 Hz), sine | 480 | A |
| I^2t | $T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine | 1250 | A^2s |
| | $t = 8.3 \text{ ms}$ (60 Hz), sine | 1200 | A^2s |
| | $T_{VJ} = 150^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine | 1000 | A^2s |
| | $t = 8.3 \text{ ms}$ (60 Hz), sine | 950 | A^2s |
| T_{VJ} | | -40...+150 | $^\circ\text{C}$ |
| T_{VJM} | | 150 | $^\circ\text{C}$ |
| T_{stg} | | -40...+150 | $^\circ\text{C}$ |
| P_{tot} | $T_C = 25^\circ\text{C}$ | 416 | W |
| M_d | Mounting torque | 0.8...1.2 | Nm |
| Weight | | 6 | g |

Features

- International standard package JEDEC TO-247 AD
- Planar passivated chips
- Very short recovery time
- Extremely low switching losses
- Low I_{RM} -values
- Soft recovery behaviour
- Epoxy meets UL 94V-0
- Creepage distance between leads 8.5 mm

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

Dimensions

See DSEI 60-12 on page D5 - 27

| Symbol | Test Conditions | Characteristic Values | | | |
|------------|---|------------------------------|------|-----|------------------|
| | | typ. | max. | | |
| I_R | $T_{VJ} = 25^\circ\text{C}$ | $V_R = V_{RRM}$ | 1 | 2 | mA |
| | $T_{VJ} = 25^\circ\text{C}$ | $V_R = 0.8 \cdot V_{RRM}$ | 0.5 | | mA |
| | $T_{VJ} = 125^\circ\text{C}$ | $V_R = 0.8 \cdot V_{RRM}$ | 3 | | mA |
| V_F | $I_F = 70 \text{ A}$; $T_{VJ} = 125^\circ\text{C}$ | $T_{VJ} = 25^\circ\text{C}$ | 2.6 | 4.1 | V |
| V_{T0} | For power-loss calculations only | | | 1.9 | V |
| r_T | $T_{VJ} = T_{VJM}$ | | | 10 | $\text{m}\Omega$ |
| R_{thJC} | | | | 0.4 | K/W |
| R_{thCK} | | | 0.25 | | K/W |
| t_{rr} | $I_F = 1 \text{ A}$; $-di/dt = 200 \text{ A}/\mu\text{s}$; $V_R = 30 \text{ V}$; $T_{VJ} = 25^\circ\text{C}$ | | 40 | | ns |
| t_{rr} | $I_F = 70 \text{ A}$; $-di/dt = 500 \text{ A}/\mu\text{s}$; $V_R = 1000 \text{ V}$; | $T_{VJ} = 25^\circ\text{C}$ | 300 | | ns |
| | | | 60 | | A |
| t_{rr} | $I_F = 70 \text{ A}$; $-di/dt = 500 \text{ A}/\mu\text{s}$; $V_R = 1000 \text{ V}$; | $T_{VJ} = 125^\circ\text{C}$ | 400 | | ns |
| | | | 85 | | A |

① I_{FAVM} rating includes reverse blocking losses at T_{VJM} , $V_R = 0.8 V_{RRM}$, duty cycle $d = 0.5$
 Data according to IEC 60747
 IXYS reserves the right to change limits, test conditions and dimensions