

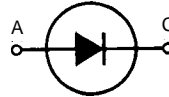
# Super Fast Recovery Diode

## DSDI 60

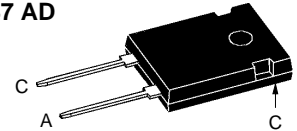
$I_{FAVM} = 63 \text{ A}$   
 $V_{RRM} = 1400-1800 \text{ V}$   
 $t_{rr} = 40 \text{ ns}$

### 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 <sup>2</sup> s
	$t = 8.3 \text{ ms}$ (60 Hz), sine	1200	A <sup>2</sup> s
	$T_{VJ} = 150^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	1000	A <sup>2</sup> s
	$t = 8.3 \text{ ms}$ (60 Hz), sine	950	A <sup>2</sup> s
$T_{VJ}$		-40...+150	°C
$T_{VJM}$		150	°C
$T_{stg}$		-40...+150	°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	V 4.1 V
$V_{T0}$	For power-loss calculations only		1.9 V
$r_T$	$T_{VJ} = T_{VJM}$		10 mΩ
$R_{thJC}$			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
		$I_{RM}$	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
		$I_{RM}$	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