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Super Fast Recovery Diode

DSDI 60

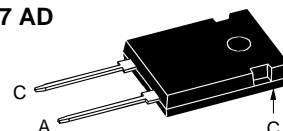
$I_{FAVM} = 63 \text{ A}$
 $V_{RRM} = 1400-1800 \text{ V}$
 $t_{rr} = 40 \text{ ns}$

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 ² s
	$t = 8.3 \text{ ms}$ (60 Hz), sine	1200	A ² s
	$T_{VJ} = 150^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	1000	A ² s
	$t = 8.3 \text{ ms}$ (60 Hz), sine	950	A ² 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_{TO}	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	
		60	A	
I_{RM}	$I_F = 70 \text{ A}$; $-di/dt = 500 \text{ A}/\mu\text{s}$; $V_R = 1000 \text{ V}$; $T_{VJ} = 125^\circ\text{C}$	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