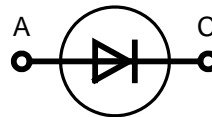
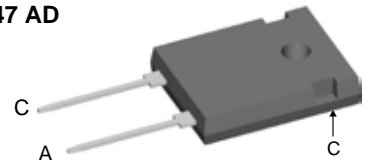


# Super Fast Recovery Diode

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

$V_{RSM}$	$V_{RRM}$	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	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
	$T_{VJ} = 150^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	450	A
		$t = 8.3 \text{ ms}$ (60 Hz), sine	480
$I^2t$	$T_{VJ} = 45^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	1250	A <sup>2</sup> s
		$t = 8.3 \text{ ms}$ (60 Hz), sine	1200
	$T_{VJ} = 150^\circ\text{C}$ ; $t = 10 \text{ ms}$ (50 Hz), sine	1000	A <sup>2</sup> s
		$t = 8.3 \text{ ms}$ (60 Hz), sine	950
$T_{VJ}$		-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
<b>Weight</b>	typical	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

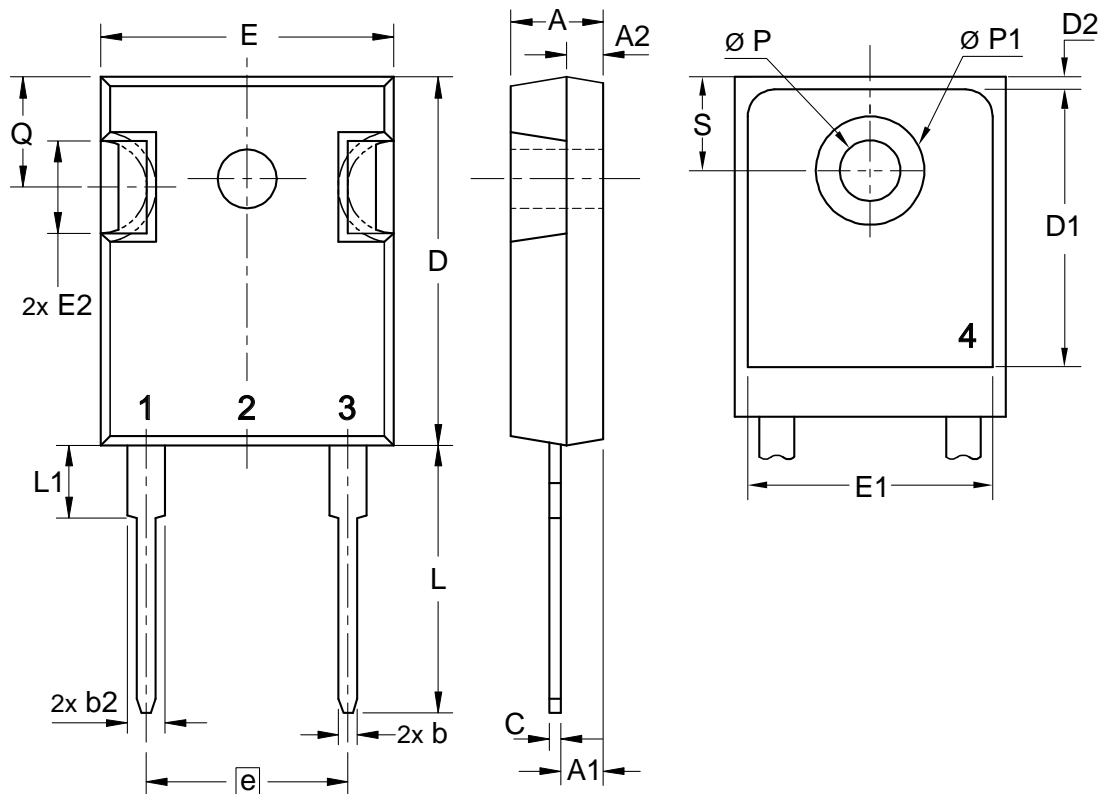
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses
- Operating at lower temperature or space saving by reduced cooling

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

Data according to IEC 60747

①  $I_{FAVM}$  rating includes reverse blocking losses at  $T_{VJM}$ ,  $V_R = 0.8 V_{RRM}$ , duty cycle  $d = 0.5$

## Dimensions TO-247 AD



Sym.	Inches		Millimeter	
	min.	max.	min.	max.
A	0.185	0.209	4.70	5.30
A1	0.087	0.102	2.21	2.59
A2	0.059	0.098	1.50	2.49
D	0.819	0.845	20.79	21.45
E	0.610	0.640	15.48	16.24
E2	0.170	0.216	4.31	5.48
e	0.430 BSC		10.92 BSC	
L	0.780	0.800	19.80	20.30
L1	-	0.177	-	4.49
Ø P	0.140	0.144	3.55	3.65
Q	0.212	0.244	5.38	6.19
S	0.242 BSC		6.14 BSC	
b	0.039	0.055	0.99	1.40
b2	0.065	0.094	1.65	2.39
b4	0.102	0.135	2.59	3.43
c	0.015	0.035	0.38	0.89
D1	0.515	-	13.07	-
D2	0.020	0.053	0.51	1.35
E1	0.530	-	13.45	-
Ø P1	-	0.29	-	7.39

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