

Schottky

High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

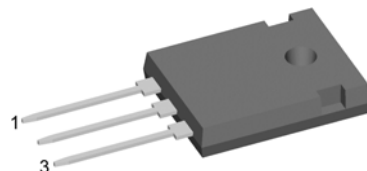
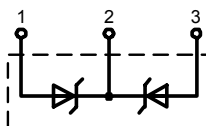
$$V_{RRM} = 45 \text{ V}$$

$$I_{FAV} = 2 \times 15 \text{ A}$$

$$V_F = 0.54 \text{ V}$$

Part number (Marking on product)

DSB 30 C 45HB



Features / Advantages:

- Very low V_f
- Extremely low switching losses
- Low I_{rm} -values
- Improved thermal behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Applications:

- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Package:

TO-247AD

- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

Ratings

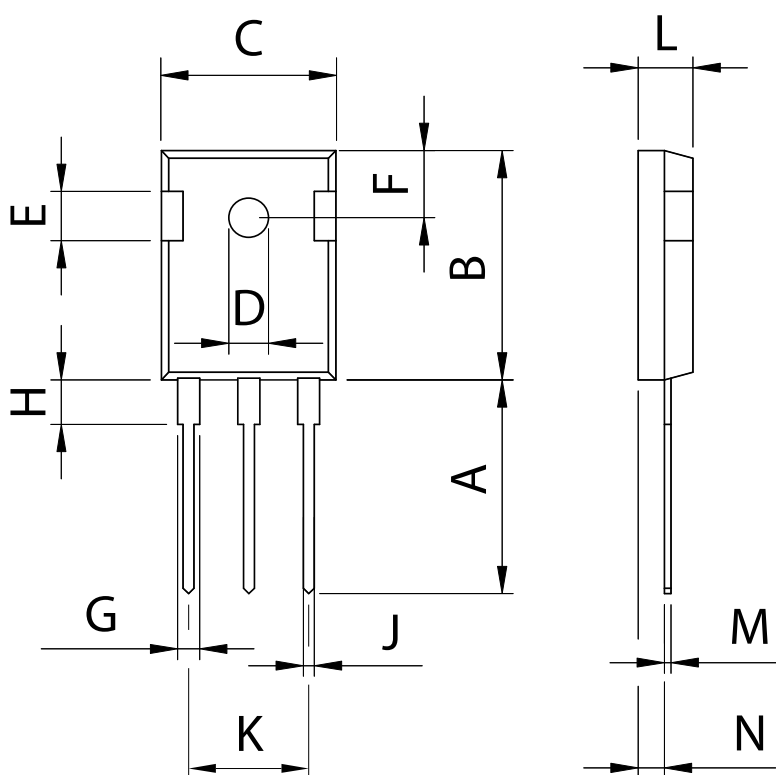
Symbol	Definition	Conditions	min.	typ.	max.	Unit
V_{RRM}	max. repetitive reverse voltage	$T_{VJ} = 25^\circ\text{C}$			45	V
I_R	reverse current	$V_R = 45 \text{ V}$ $T_{VJ} = 25^\circ\text{C}$			10	mA
		$V_R = 45 \text{ V}$ $T_{VJ} = 100^\circ\text{C}$			50	mA
V_F	forward voltage	$I_F = 15 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$			0.58	V
		$I_F = 30 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$			0.82	V
		$I_F = 15 \text{ A}$ $T_{VJ} = 125^\circ\text{C}$			0.54	V
		$I_F = 30 \text{ A}$ $T_{VJ} = 125^\circ\text{C}$			0.78	V
I_{FAV}	average forward current	rectangular, $d = 0.5$ $T_C = 125^\circ\text{C}$			15	A
V_{F0}	threshold voltage	$T_{VJ} = 150^\circ\text{C}$ for power loss calculation only			0.31	V
r_F	slope resistance				14.9	m Ω
R_{thJC}	thermal resistance junction to case				1.75	K/W
T_{VJ}	virtual junction temperature		-55		150	$^\circ\text{C}$
P_{tot}	total power dissipation	$T_C = 25^\circ\text{C}$			70	W
I_{FSM}	max. forward surge current	$t_p = 10 \text{ ms (50 Hz), sine}$ $T_{VJ} = 45^\circ\text{C}$			160	A
C_J	junction capacitance	$V_R = \text{V}; f = 1 \text{ MHz}$ $T_{VJ} = 25^\circ\text{C}$				pF
E_{AS}	non-repetitive avalanche energy	$I_{AS} = \text{A}; L = 100 \mu\text{H}$ $T_{VJ} = 25^\circ\text{C}$			tbd	mJ
I_{AR}	repetitive avalanche current	$V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$			tbd	A

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
I_{RMS}	RMS current	per pin*			50	A
R_{thCH}	thermal resistance case to heatsink			0.25		K/W
M_D	mounting torque		0.8		1.2	Nm
F_c	mounting force with clip		20		120	N
T_{stg}	storage temperature		-55		150	°C
Weight				6		g

* I_{rms} is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.

In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

Outlines TO-247AD



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102