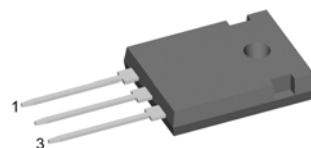
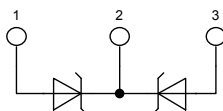


Schottky Diode Gen²

High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSB 80 C 45 HB



Backside: cathode

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

Applications:

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

Package:

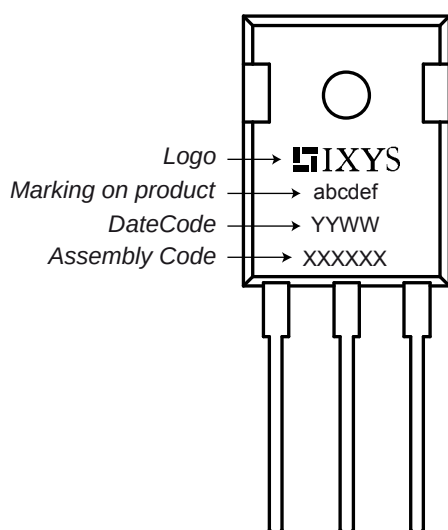
- Housing: TO-247
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

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	$V_R = 45\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$			15	mA
		$V_R = 45\text{ V}$	$T_{VJ} = 100^{\circ}\text{C}$			150	mA
V_F	forward voltage	$I_F = 40\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$			0.62	V
		$I_F = 80\text{ A}$				0.90	V
		$I_F = 40\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$			0.59	V
		$I_F = 80\text{ A}$				0.88	V
I_{FAV}	average forward current	rectangular $d = 0.5$	$T_C = 120^{\circ}\text{C}$			40	A
V_{F0}	threshold voltage	} for power loss calculation only		$T_{VJ} = 150^{\circ}\text{C}$		0.31	V
r_F	slope resistance					7	mΩ
R_{thJC}	thermal resistance junction to case					0.70	K/W
T_{VJ}	virtual junction temperature			-55		150	$^{\circ}\text{C}$
P_{tot}	total power dissipation		$T_C = 25^{\circ}\text{C}$			180	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms (50 Hz), sine}$	$T_{VJ} = 45^{\circ}\text{C}$			600	A
C_J	junction capacitance	$V_R = 5\text{ V}; f = 1\text{ MHz}$	$T_{VJ} = 25^{\circ}\text{C}$		1.38		nF
E_{AS}	non-repetitive avalanche energy	$I_{AS} = 26\text{ A}; L = 180\text{ μH}$	$T_{VJ} = 25^{\circ}\text{C}$			61	mJ
I_{AR}	repetitive avalanche current	$V_A = 1.5 \cdot V_R$ typ.: $f = 10\text{ kHz}$				2.6	A

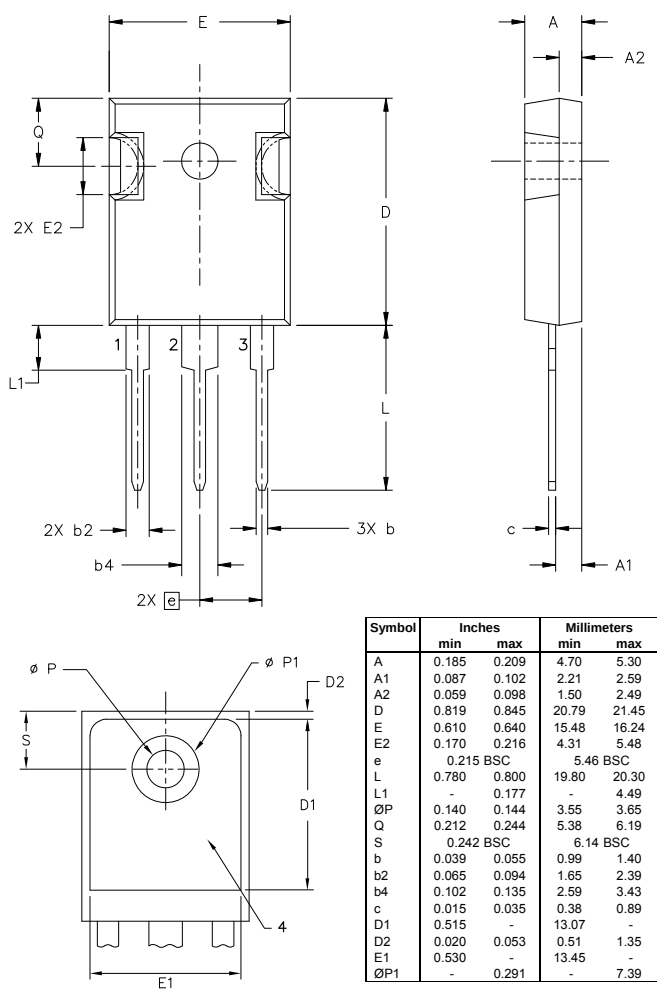
Symbol	Definition	Conditions	Ratings			
			min.	typ.	max.	Unit
I_{RMS}	RMS current	per pin ¹⁾			50	A
R_{thCH}	thermal resistance case to heatsink			0.25		K/W
T_{stg}	storage temperature		-55		150	°C
Weight				6		g
M_D	mounting torque		0.8		1.2	Nm
F_C	mounting force with clip		20		120	N

¹⁾ 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.

Product Marking

Part number

D = Diode
S = Schottky Diode
B = ultra low VF
80 = Current Rating [A]
C = Common Cathode
45 = Reverse Voltage [V]
HB = TO-247AD (3)

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSB 80 C 45 HB	DSB80C45HB	Tube	30	504883

Outlines TO-247


Symbol	Inches		Millimeters	
	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	0.215 BSC		5.46 BSC	
L	0.780	0.800	19.80	20.30
L1	-	0.177	-	4.49
$\varnothing P$	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	0.084	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	-
$\varnothing P1$	-	0.291	-	7.39