Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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preliminary

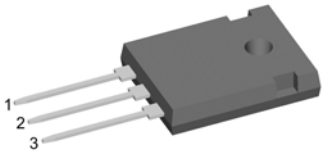
Schottky Diode Gen ²

V_{RRM} = 45V
I_{FAV} = 2x 40A
V_F = 0.59V

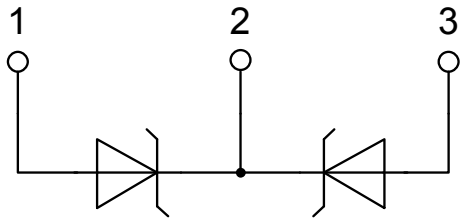
High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSB80C45HB



Backside: cathode



Features / Advantages:

- Very low Vf
- Extremely low switching losses
- Low Irm 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: TO-247

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

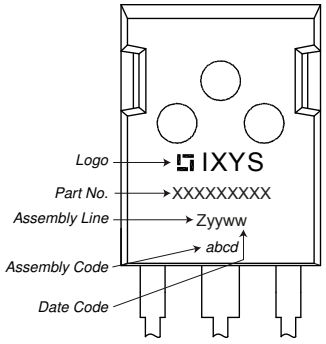
preliminary

Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	*max. non-repetitive reverse blocking voltage*		T_{VJ} = 25°C			45	V
V_{RRM}	*max. repetitive reverse blocking voltage*		T_{VJ} = 25°C			45	V
I_R	*reverse current, drain current*	V_R = 45 V	T_{VJ} = 25°C			15	mA
		V_R = 45 V	T_{VJ} = 100°C			150	mA
V_F	*forward voltage drop*	I_F = 40 A	T_{VJ} = 25°C			0.62	V
		I_F = 80 A				0.90	V
		I_F = 40 A	T_{VJ} = 125°C			0.59	V
		I_F = 80 A				0.88	V
I_{FAV}	*average forward current*	T_C = 125°C	T_{VJ} = 150°C			40	A
		rectangular d = 0.5					
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 150°C			0.31	V
r_F	*slope resistance* }					7	mΩ
R_{thJC}	*thermal resistance junction to case*					0.7	K/W
R_{thCH}	*thermal resistance case to heatsink*				0.25		K/W
P_{tot}	*total power dissipation*		T_C = 25°C			180	W
I_{FSM}	*max. forward surge current*	t = 10 ms; (50 Hz), sine; V_R = 0 V	T_{VJ} = 45°C			600	A
C_J	*junction capacitance*	V_R = 5 V f = 1 MHz	T_{VJ} = 25°C		1.38		nF
E_{AS}	*non-repetitive avalanche energy*	I_{AS} = tbd A L = tbd µH	T_{VJ} = 25°C				mJ
I_{AR}	*repetitive avalanche current*	$V_A = 1.5 \cdot V_R$ typ.: f = 10 kHz					A

preliminary

Package TO-247			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per terminal [1]			50	A
T_{VJ}	*virtual junction temperature*		-55		150	°C
T_{op}	*operation temperature*		-55		125	°C
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

Product Marking

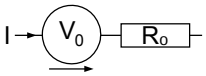


Part number

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 Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSB80C45HB	DSB80C45HB	Tube	30	504883

Equivalent Circuits for Simulation ** on die level* T_{VJ} = 150 °C

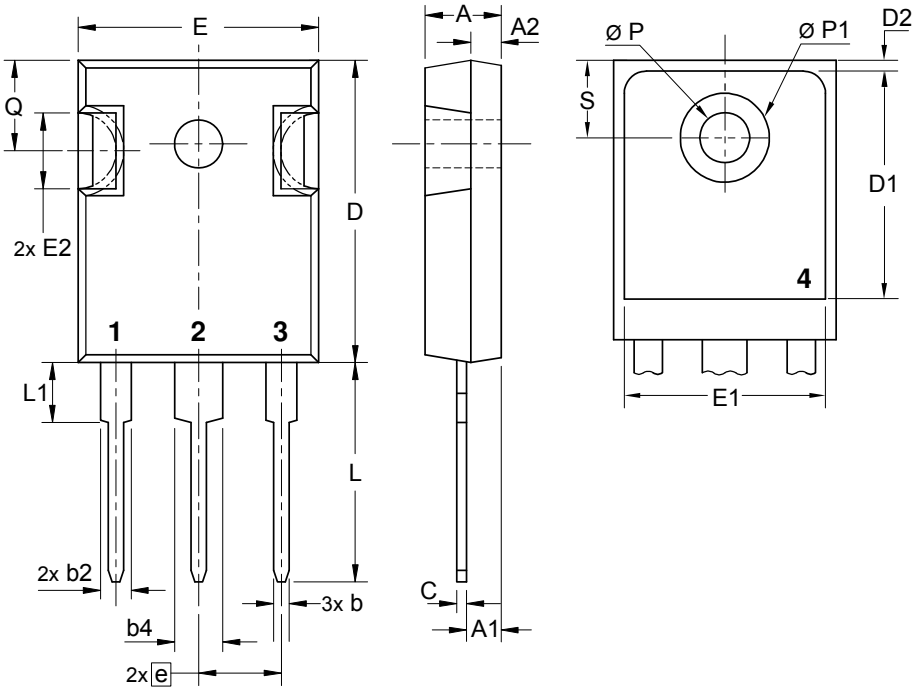


Schottky

$V_{0\,max}$	*threshold voltage*	0.31	V
$R_{0\,max}$	*slope resistance **	4.5	mΩ

preliminary

Outlines TO-247



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	0.215 BSC		5.46 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