

Schottky Diode Gen ²

preliminary

$$V_{RRM} = 45V$$

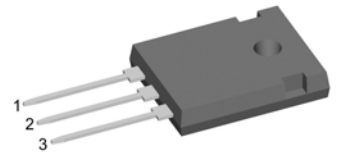
$$I_{FAV} = 2x \ 30A$$

$$V_F = 0.58V$$

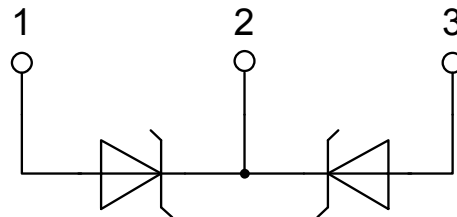
High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSB60C45HB



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: TO-247

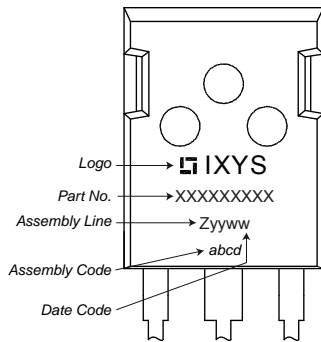
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

Schottky				Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit	
V_{RSM}	max. non-repetitive reverse blocking voltage				45	V	
V_{RRM}	max. repetitive reverse blocking voltage				45	V	
I_R	reverse current, drain current	$V_R = 45\text{ V}$			10	mA	
		$V_R = 45\text{ V}$			100	mA	
V_F	forward voltage drop	$I_F = 30\text{ A}$			0.62	V	
		$I_F = 60\text{ A}$			0.88	V	
		$I_F = 30\text{ A}$	$T_{VJ} = 125^\circ\text{C}$			0.58	V
		$I_F = 60\text{ A}$				0.86	V
I_{FAV}	average forward current	$T_C = 125^\circ\text{C}$ rectangular $d = 0.5$			30	A	
V_{FO}	threshold voltage	} for power loss calculation only			0.31	V	
r_F	slope resistance				8.7	mΩ	
R_{thJC}	thermal resistance junction to case				0.95	K/W	
R_{thCH}	thermal resistance case to heatsink			0.25		K/W	
P_{tot}	total power dissipation				130	W	
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$			570	A	
C_J	junction capacitance	$V_R = 5\text{ V}$ $f = 1\text{ MHz}$			980	pF	

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
- 60 = Current Rating [A]
- C = Common Cathode
- 45 = Reverse Voltage [V]
- HB = TO-247AD (3)

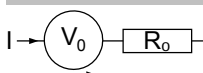
Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSB60C45HB	DSB60C45HB	Tube	30	505549

Similar Part	Package	Voltage class
DSB60C45PB	TO-220AB (3)	45

Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 150\text{ °C}$



Schottky

$V_{0\ max}$	threshold voltage	0.31	V
$R_{0\ max}$	slope resistance *	6.2	mΩ

Outlines TO-247

