

Schottky Diode Gen ²

preliminary

$$V_{RRM} = 150V$$

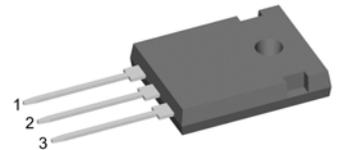
$$I_{FAV} = 2 \times 25A$$

$$V_F = 0.74V$$

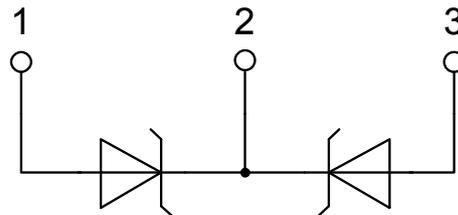
High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSA50C150HB



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

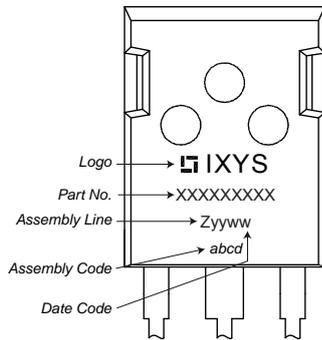
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage					150	V
V_{RRM}	max. repetitive reverse blocking voltage					150	V
I_R	reverse current, drain current	$V_R = 150\text{ V}$		$T_{VJ} = 25^\circ\text{C}$		450	μA
		$V_R = 150\text{ V}$		$T_{VJ} = 125^\circ\text{C}$		5	mA
V_F	forward voltage drop	$I_F = 25\text{ A}$		$T_{VJ} = 25^\circ\text{C}$		0.88	V
		$I_F = 50\text{ A}$				1.02	V
		$I_F = 25\text{ A}$		$T_{VJ} = 125^\circ\text{C}$		0.74	V
		$I_F = 50\text{ A}$				0.90	V
I_{FAV}	average forward current	$T_C = 155^\circ\text{C}$	rectangular	$T_{VJ} = 175^\circ\text{C}$		25	A
V_{FO}	threshold voltage			$T_{VJ} = 175^\circ\text{C}$		0.53	V
r_F	slope resistance					5.8	m Ω
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			$T_C = 25^\circ\text{C}$		160	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$		$T_{VJ} = 45^\circ\text{C}$		390	A
C_J	junction capacitance	$V_R = 24\text{ V}$		$T_{VJ} = 25^\circ\text{C}$		161	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		175	°C
T_{op}	operation temperature		-55		150	°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

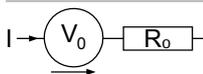
- D = Diode
- S = Schottky Diode
- A = low VF
- 50 = Current Rating [A]
- C = Common Cathode
- 150 = Reverse Voltage [V]
- HB = TO-247AD (3)

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA50C150HB	DSA50C150HB	Tube	30	505450

Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 175\text{ °C}$



Schottky

$V_{0\max}$	threshold voltage	0.53	V
$R_{0\max}$	slope resistance *	3.2	mΩ

Outlines TO-247

