

preliminary

# Schottky Diode

$$V_{RRM} = 150\text{ V}$$

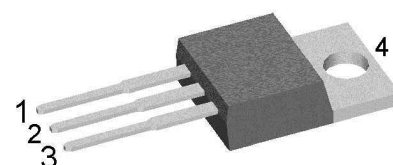
$$I_{FAV} = 2 \times 5\text{ A}$$

$$V_F = 0.71\text{ V}$$

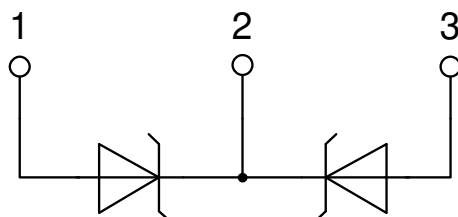
High Performance Schottky Diode  
 Low Loss and Soft Recovery  
 Common Cathode

Part number

**DSA10C150PB**



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-220

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

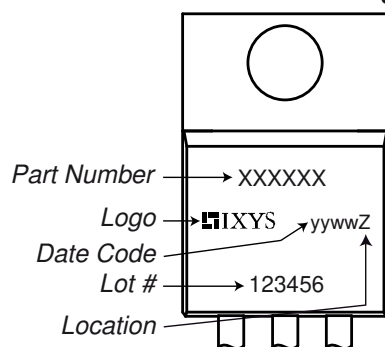
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Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
$V_{RSM}$	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				150	V
$V_{RRM}$	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				150	V
$I_R$	reverse current, drain current	$V_R = 150\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$			100	$\mu\text{A}$
		$V_R = 150\text{ V}$	$T_{VJ} = 125^{\circ}\text{C}$			0.9	mA
$V_F$	forward voltage drop	$I_F = 5\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$			0.86	V
		$I_F = 10\text{ A}$				0.93	V
		$I_F = 5\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$			0.71	V
		$I_F = 10\text{ A}$				0.81	V
$I_{FAV}$	average forward current	$T_C = 160^{\circ}\text{C}$ rectangular $d = 0.5$	$T_{VJ} = 175^{\circ}\text{C}$			5	A
$V_{F0}$	threshold voltage	} for power loss calculation only		$T_{VJ} = 175^{\circ}\text{C}$		0.54	V
$r_F$	slope resistance					19.4	m $\Omega$
$R_{thJC}$	thermal resistance junction to case					4.8	K/W
$R_{thCH}$	thermal resistance case to heatsink				0.5		K/W
$P_{tot}$	total power dissipation	$T_C = 25^{\circ}\text{C}$				30	W
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$	$T_{VJ} = 45^{\circ}\text{C}$			150	A
$C_J$	junction capacitance	$V_R = 24\text{ V}$ $f = 1\text{ MHz}$	$T_{VJ} = 25^{\circ}\text{C}$		29		pF

preliminary

Package TO-220			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
$I_{RMS}$	RMS current	per terminal <sup>1)</sup>			20	A
$T_{VJ}$	virtual junction temperature		-55		175	°C
$T_{op}$	operation temperature		-55		150	°C
$T_{stg}$	storage temperature		-55		150	°C
Weight				2		g
$M_D$	mounting torque		0.4		0.6	Nm
$F_C$	mounting force with clip		20		60	N

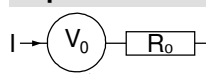
**Product Marking**

**Part description**

D = Diode  
 S = Schottky Diode  
 A = low VF  
 10 = Current Rating [A]  
 C = Common Cathode  
 150 = Reverse Voltage [V]  
 PB = TO-220AB (3)

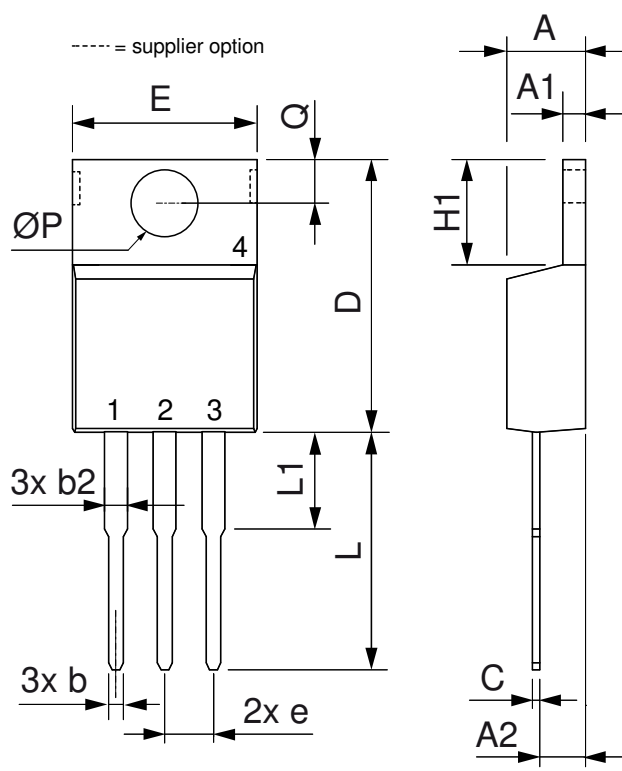
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA10C150PB	DSA10C150PB	Tube	50	509188

**Equivalent Circuits for Simulation**

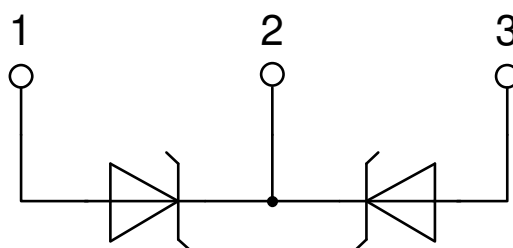
\* on die level

 $T_{VJ} = 175^{\circ}\text{C}$ 

**Schottky**

$V_{0\max}$	threshold voltage	0.54	V
$R_{0\max}$	slope resistance *	16.2	mΩ

**Outlines TO-220**


Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.32	4.82	0.170	0.190
A1	1.14	1.39	0.045	0.055
A2	2.29	2.79	0.090	0.110
b	0.64	1.01	0.025	0.040
b2	1.15	1.65	0.045	0.065
C	0.35	0.56	0.014	0.022
D	14.73	16.00	0.580	0.630
E	9.91	10.66	0.390	0.420
e	2.54	BSC	0.100	BSC
H1	5.85	6.85	0.230	0.270
L	12.70	13.97	0.500	0.550
L1	2.79	5.84	0.110	0.230
ØP	3.54	4.08	0.139	0.161
Q	2.54	3.18	0.100	0.125



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