



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!



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Schottky Diode Gen ²

preliminary

$$V_{RRM} = 45V$$

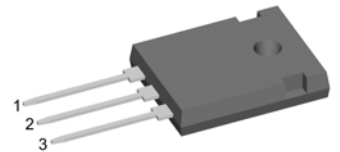
$$I_{FAV} = 2 \times 15A$$

$$V_F = 0.62V$$

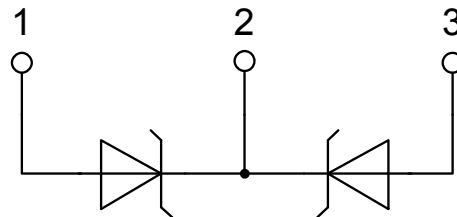
High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSA30C45HB



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

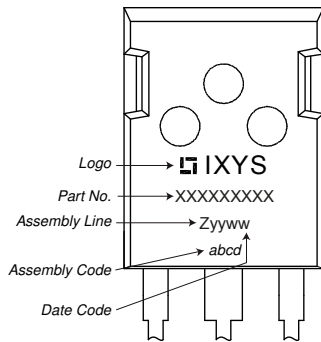
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

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	$V_R = 45\text{ V}$	$T_{VJ} = 25^\circ\text{C}$			250	μA
		$V_R = 45\text{ V}$	$T_{VJ} = 125^\circ\text{C}$			2.5	mA
V_F	forward voltage drop	$I_F = 15\text{ A}$	$T_{VJ} = 25^\circ\text{C}$			0.74	V
		$I_F = 30\text{ A}$				0.90	V
		$I_F = 15\text{ A}$	$T_{VJ} = 125^\circ\text{C}$			0.62	V
		$I_F = 30\text{ A}$				0.77	V
I_{FAV}	average forward current	$T_C = 155^\circ\text{C}$ rectangular	$T_{VJ} = 175^\circ\text{C}$			15	A
V_{FO}	threshold voltage	} for power loss calculation only	$T_{VJ} = 175^\circ\text{C}$			0.42	V
r_F	slope resistance					9.2	m Ω
R_{thJC}	thermal resistance junction to case					1.75	K/W
R_{thCH}	thermal resistance case to heatsink				0.25		K/W
P_{tot}	total power dissipation			$T_C = 25^\circ\text{C}$		85	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$	$T_{VJ} = 45^\circ\text{C}$			340	A
C_J	junction capacitance	$V_R = 5\text{ V}$ $f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		497		pF
E_{AS}	non-repetitive avalanche energy	$I_{AS} = 13\text{ A}$ $L = 180\text{ }\mu\text{H}$	$T_{VJ} = 25^\circ\text{C}$			15.2	mJ
I_{AR}	repetitive avalanche current	$V_A = 1.5 \cdot V_R$ typ.: $f = 10\text{ kHz}$				1.3	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		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
- 30 = Current Rating [A]
- C = Common Cathode
- 45 = Reverse Voltage [V]
- HB = TO-247AD (3)

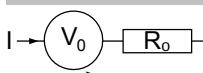
Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA30C45HB	DSA30C45HB	Tube	30	503927

Similar Part	Package	Voltage class
DSA30C45PB	TO-220AB (3)	45
DSA30C45PC	TO-263AB (D2Pak) (2)	45

Equivalent Circuits for Simulation

* on die level

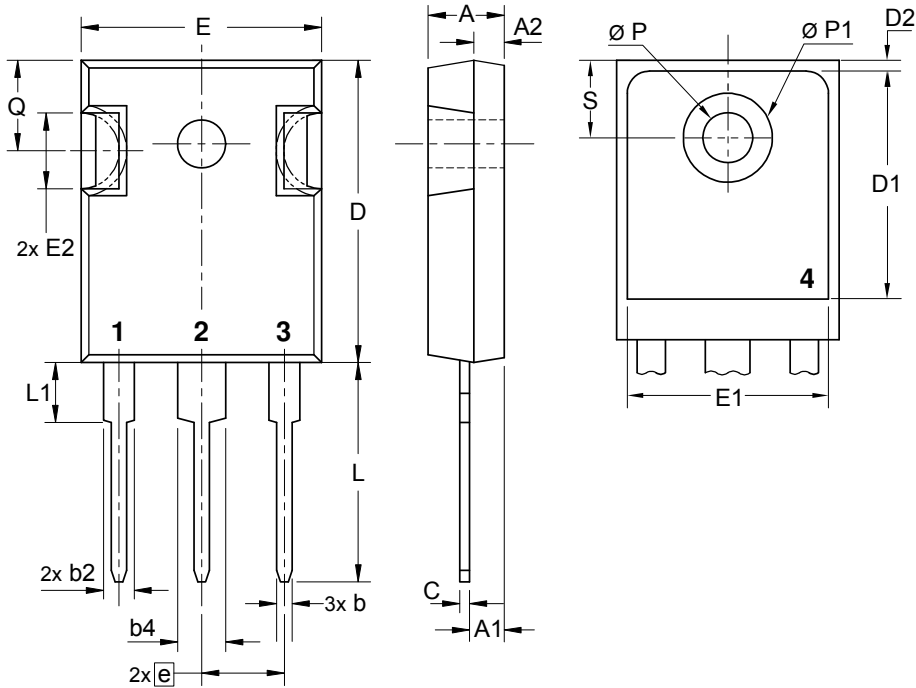
$T_{VJ} = 175\text{ °C}$



Schottky

$V_{0\ max}$	threshold voltage	0.42	V
$R_{0\ max}$	slope resistance *	6.6	mΩ

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

