



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 Gen²

preliminary

$$V_{RRM} = 15V$$

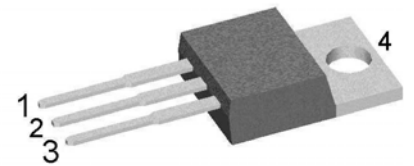
$$I_{FAV} = 2 \times 20A$$

$$V_F = 0.39V$$

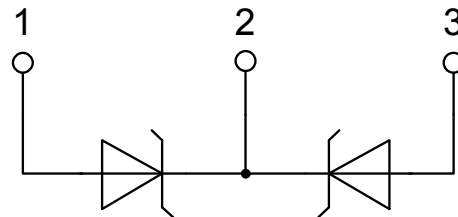
High Performance Schottky Diode
 Low Loss and Soft Recovery
 Common Cathode

Part number

DSB40C15PB



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

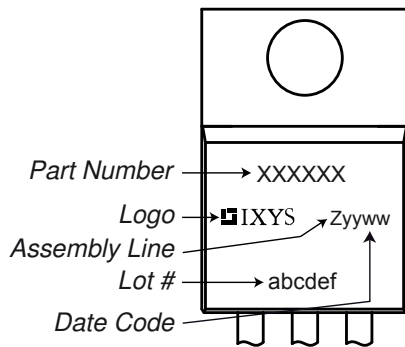
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

Schottky				Ratings				
Symbol	Definition	Conditions		min.	typ.	max.	Unit	
V_{RSM}	max. non-repetitive reverse blocking voltage					15	V	
V_{RRM}	max. repetitive reverse blocking voltage					15	V	
I_R	reverse current, drain current	$V_R = 15\text{ V}$	$T_{VJ} = 25^\circ\text{C}$			5	mA	
		$V_R = 15\text{ V}$	$T_{VJ} = 100^\circ\text{C}$			40	mA	
V_F	forward voltage drop	$I_F = 20\text{ A}$	$T_{VJ} = 25^\circ\text{C}$			0.48	V	
		$I_F = 40\text{ A}$				0.60	V	
		$I_F = 20\text{ A}$	$T_{VJ} = 125^\circ\text{C}$			0.39	V	
		$I_F = 40\text{ A}$				0.54	V	
I_{FAV}	average forward current	$T_C = 130^\circ\text{C}$ rectangular $d = 0.5$	$T_{VJ} = 150^\circ\text{C}$			20	A	
V_{FO}	threshold voltage	} for power loss calculation only				0.23	V	
r_F	slope resistance					7.2	mΩ	
R_{thJC}	thermal resistance junction to case					1.75	K/W	
R_{thCH}	thermal resistance case to heatsink			0.50			K/W	
P_{tot}	total power dissipation			$T_C = 25^\circ\text{C}$			70	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	$V_R = 3\text{ V}$ $f = 1\text{ MHz}$		$T_{VJ} = 25^\circ\text{C}$	1.28	nF		

preliminary

Package TO-220			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal ¹⁾			35	A
T_{VJ}	virtual junction temperature		-55		150	°C
T_{op}	operation temperature		-55		125	°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 number

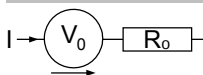
- D = Diode
- S = Schottky Diode
- B = ultra low VF
- 40 = Current Rating [A]
- C = Common Cathode
- 15 = Reverse Voltage [V]
- PB = TO-220AB (3)

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSB40C15PB	DSB40C15PB	Tube	50	502802

Equivalent Circuits for Simulation

* on die level

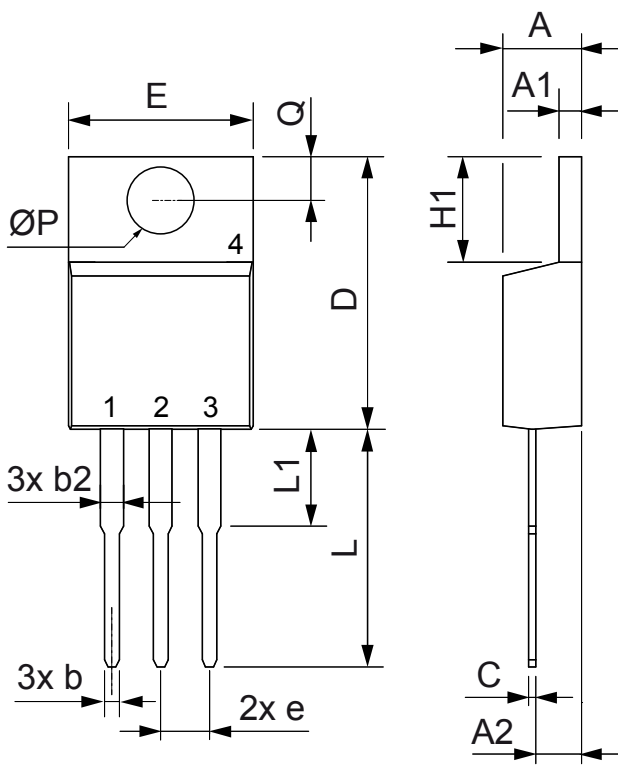
$T_{VJ} = 150\text{ °C}$



Schottky

$V_{0\max}$	threshold voltage	0.23	V
$R_{0\max}$	slope resistance *	4.1	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

