



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

$$V_{RRM} = 150V$$

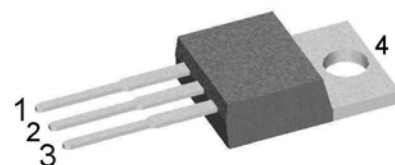
$$I_{FAV} = 2 \times 10A$$

$$V_F = 0.73V$$

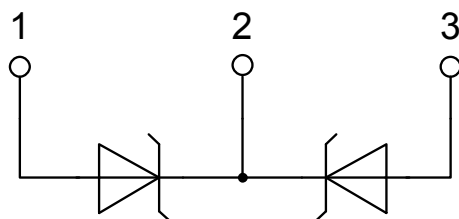
High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSA20C150PB



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

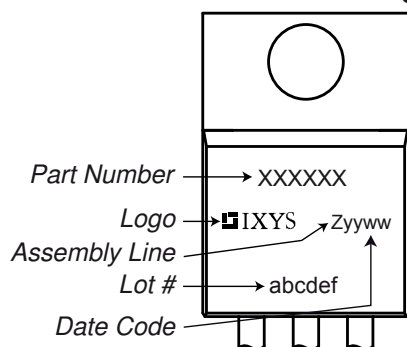
Package: TO-220

- 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	$T_{VJ} = 25^{\circ}\text{C}$				150	V
V_{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				150	V
I_R	reverse current, drain current	$V_R = 150\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$			200	μA
		$V_R = 150\text{ V}$	$T_{VJ} = 125^{\circ}\text{C}$			2	mA
V_F	forward voltage drop	$I_F = 10\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$			0.87	V
		$I_F = 20\text{ A}$				0.98	V
		$I_F = 10\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$			0.73	V
		$I_F = 20\text{ A}$				0.85	V
I_{FAV}	average forward current	$T_C = 155^{\circ}\text{C}$ rectangular $d = 0.5$	$T_{VJ} = 175^{\circ}\text{C}$			10	A
V_{F0}	threshold voltage	} for power loss calculation only		$T_{VJ} = 175^{\circ}\text{C}$		0.54	V
r_F	slope resistance					11.4	m Ω
R_{thJC}	thermal resistance junction to case					2.4	K/W
R_{thCH}	thermal resistance case to heatsink				0.50		K/W
P_{tot}	total power dissipation	$T_C = 25^{\circ}\text{C}$				65	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$	$T_{VJ} = 45^{\circ}\text{C}$			220	A
C_J	junction capacitance	$V_R = 24\text{ V}$ $f = 1\text{ MHz}$	$T_{VJ} = 25^{\circ}\text{C}$		53		pF

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		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 number

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

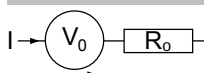
Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA20C150PB	DSA20C150PB	Tube	50	503913

Similar Part	Package	Voltage class
DSA20C150PN	TO-220ABFP (3)	150

Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 175\text{ °C}$



Schottky

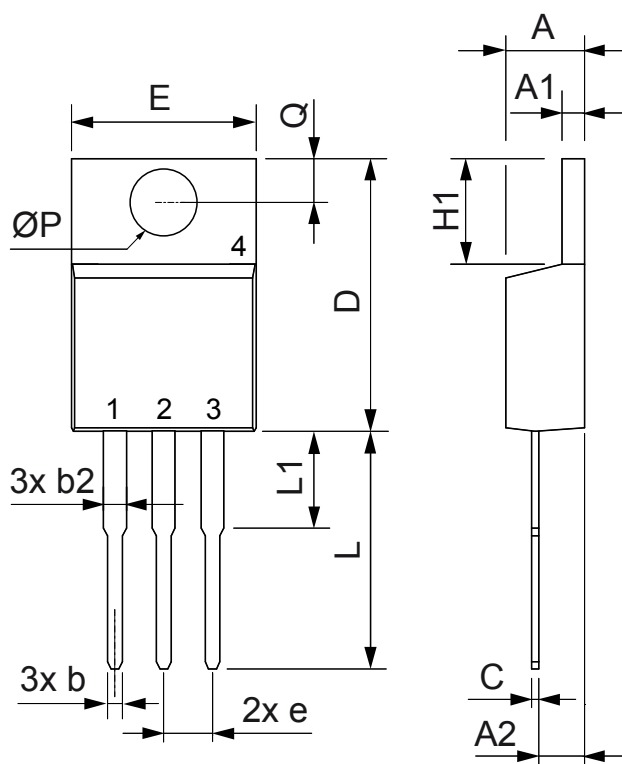
$V_{0\max}$ threshold voltage 0.54

V

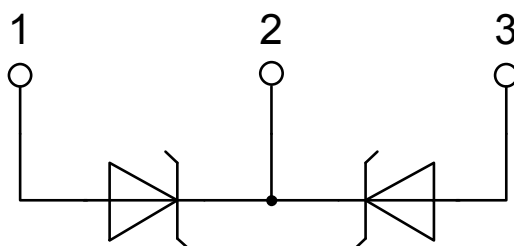
$R_{0\max}$ slope resistance * 8.2

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
$\varnothing P$	3.54	4.08	0.139	0.161
Q	2.54	3.18	0.100	0.125



Schottky

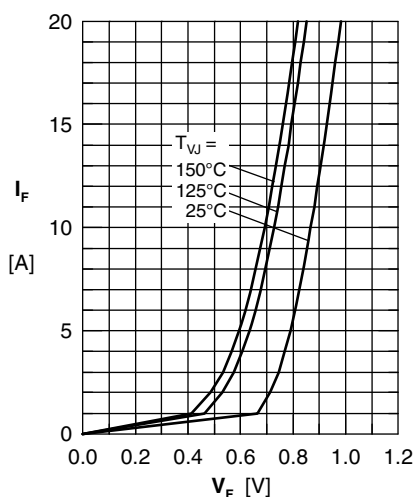


Fig. 1 Maximum forward voltage drop characteristics

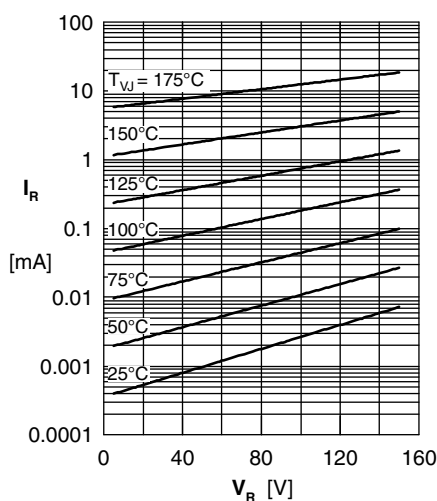


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

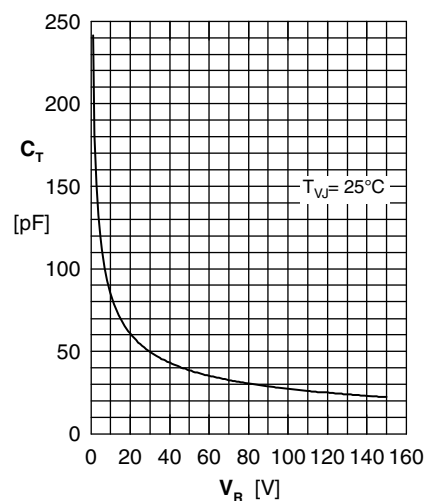


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

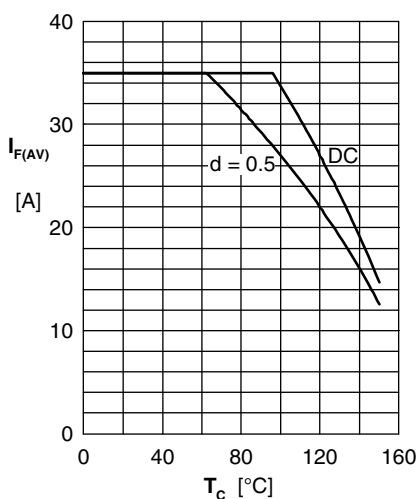


Fig. 4 Avg: forward current $I_{F(AV)}$ vs. case temperature T_c

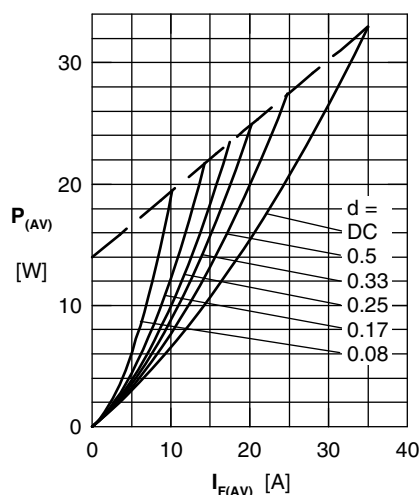


Fig. 5 Forward power loss characteristics

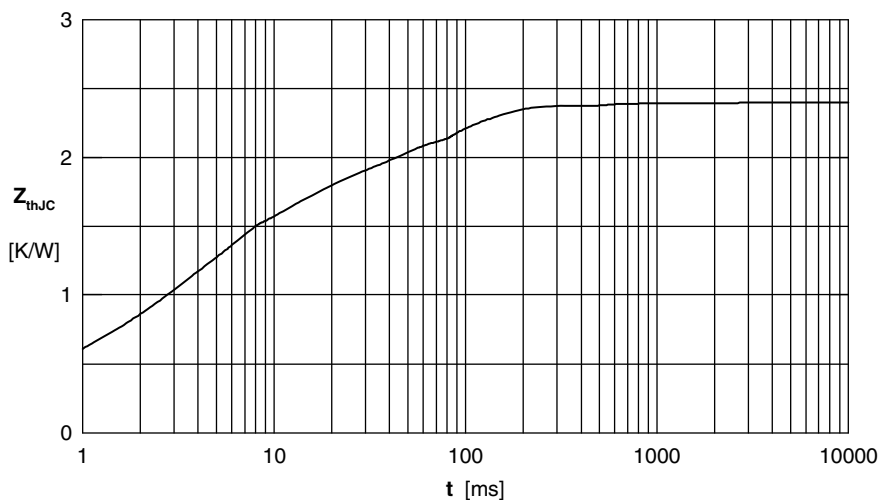


Fig. 6 Transient thermal impedance junction to case