



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

$$V_{RRM} = 150V$$

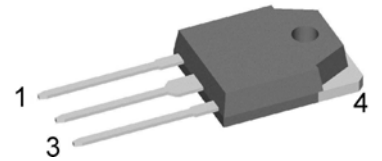
$$I_{FAV} = 2 \times 60A$$

$$V_F = 0.8V$$

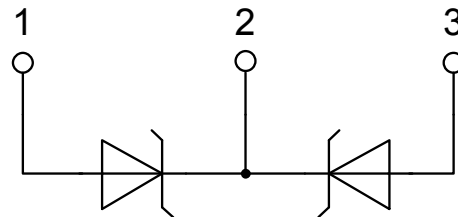
High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSA120C150QB



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

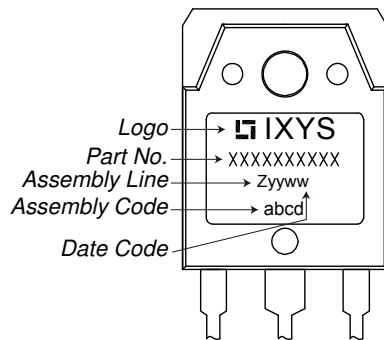
Package: TO-3P

- Industry standard outline compatible with TO-247
- 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	$V_R = 150\text{ V}$			900	μA	
		$V_R = 150\text{ V}$			5	mA	
V_F	forward voltage drop	$I_F = 60\text{ A}$			0.93	V	
		$I_F = 120\text{ A}$			1.13	V	
		$I_F = 60\text{ A}$	$T_{VJ} = 125^\circ\text{C}$			0.80	V
		$I_F = 120\text{ A}$	$T_{VJ} = 125^\circ\text{C}$			1.03	V
I_{FAV}	average forward current	$T_c = 150^\circ\text{C}$ rectangular $d = 0.5$			60	A	
V_{FO}	threshold voltage	} for power loss calculation only			0.51	V	
r_F	slope resistance				3.9	m Ω	
R_{thJC}	thermal resistance junction to case				0.4	K/W	
R_{thCH}	thermal resistance case to heatsink			0.25		K/W	
P_{tot}	total power dissipation				375	W	
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$			1.20	kA	
C_J	junction capacitance	$V_R = 24\text{ V}$ $f = 1\text{ MHz}$			481	pF	

Package TO-3P			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal ¹⁾			70	A
T_{VJ}	virtual junction temperature		-55		175	°C
T_{op}	operation temperature		-55		150	°C
T_{stg}	storage temperature		-55		150	°C
Weight				5		g
M_D	mounting torque		0.8		1.2	Nm
F_C	mounting force with clip		20		120	N

Product Marking



Part number

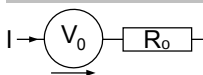
- D = Diode
- S = Schottky Diode
- A = low VF
- 120 = Current Rating [A]
- C = Common Cathode
- 150 = Reverse Voltage [V]
- QB = TO-3P (3)

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA120C150QB	DSA120C150QB	Tube	30	501788

Equivalent Circuits for Simulation

* on die level

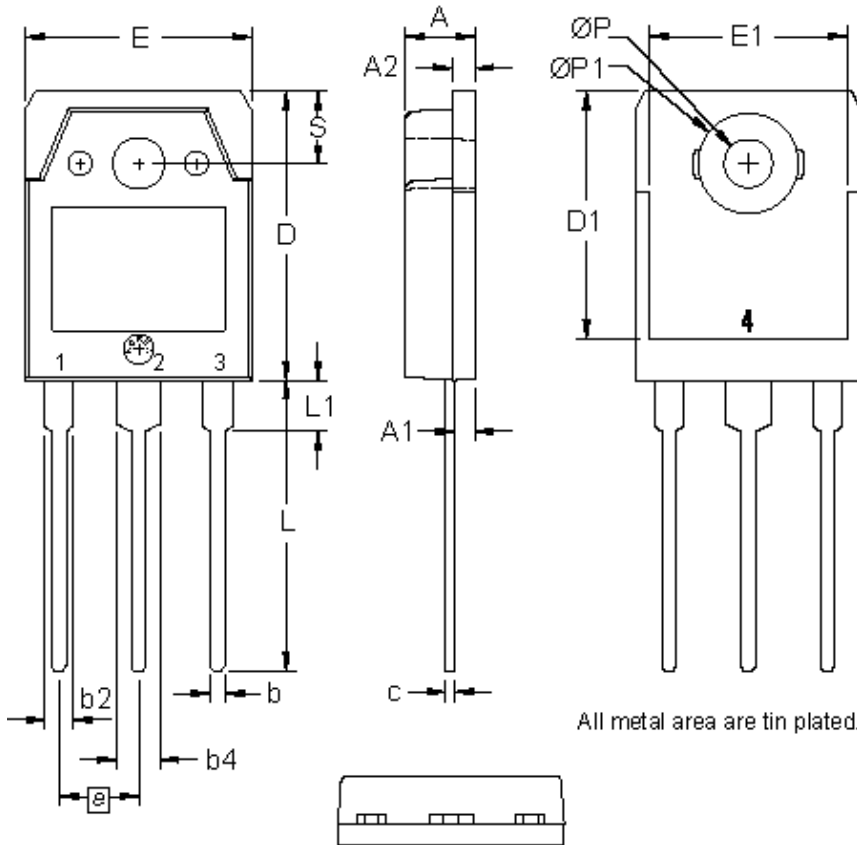
$T_{VJ} = 175\text{ °C}$



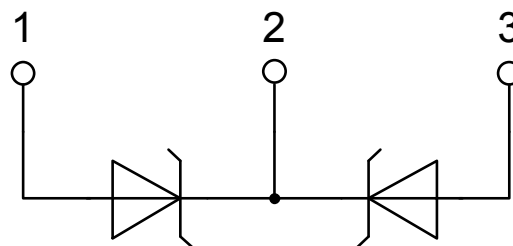
Schottky

$V_{0\ max}$	threshold voltage	0.51	V
$R_{0\ max}$	slope resistance *	1.3	mΩ

Outlines TO-3P



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.70	4.90	0.185	0.193
A1	1.30	1.50	0.051	0.059
A2	1.45	1.65	0.057	0.065
b	0.90	1.15	0.035	0.045
b2	1.90	2.20	0.075	0.087
b4	2.90	3.20	0.114	0.126
c	0.55	0.80	0.022	0.031
D	19.80	20.10	0.780	0.791
D1	16.90	17.20	0.665	0.677
E	15.50	15.80	0.610	0.622
E1	13.50	13.70	0.531	0.539
e	5.45 BSC		0.215 BSC	
L	19.80	20.20	0.780	0.795
L1	3.40	3.60	0.134	0.142
Ø P	3.20	3.40	0.126	0.134
ØP1	6.90	7.10	0.272	0.280
S	4.90	5.10	0.193	0.201



Schottky

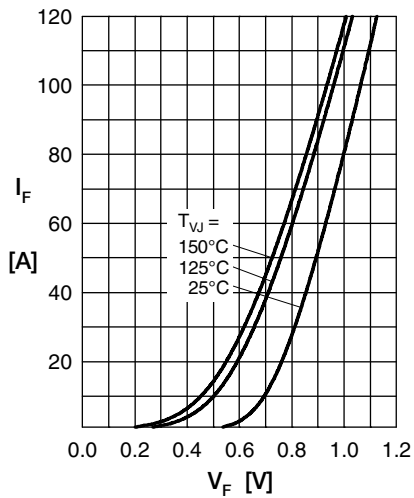


Fig. 1 Max. forward voltage drop characteristics

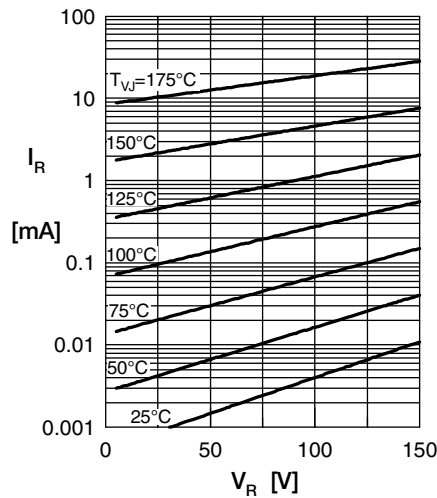


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

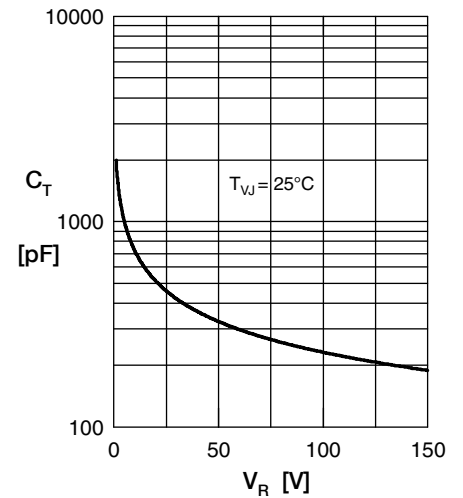


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

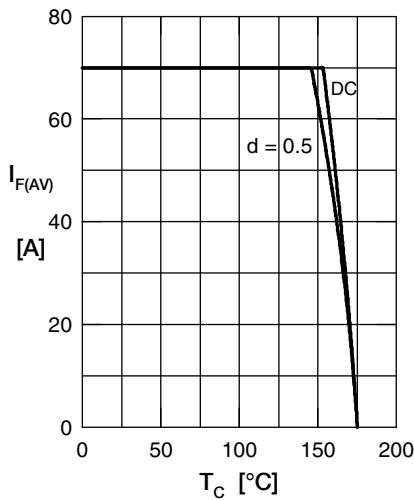


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temp T_C

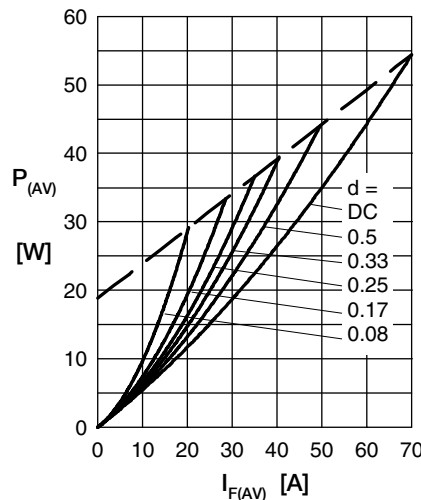


Fig. 5 Forward power loss characteristics

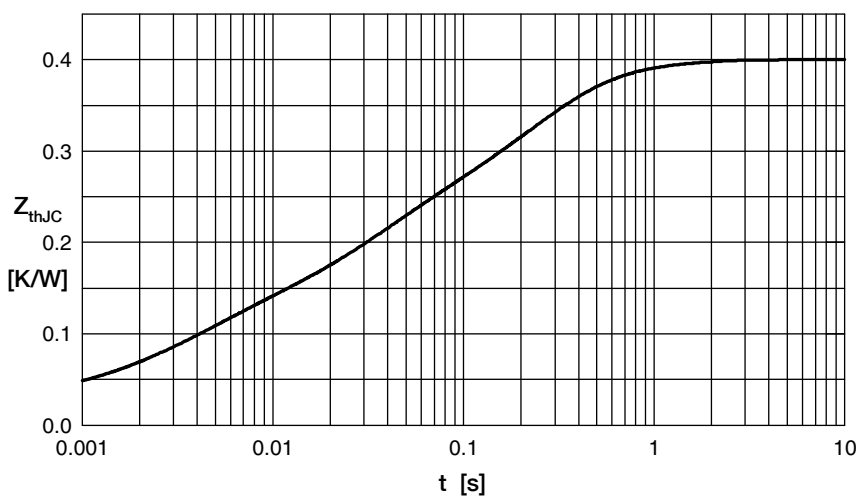


Fig. 6 Transient thermal impedance junction to case at various duty cycles

R_{thi}	t_i
0.022	0.0002
0.082	0.0032
0.104	0.026
0.165	0.208
0.027	0.79

Note: All curves are per diode