



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.

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## Schottky Diode Gen<sup>2</sup>

$$V_{RRM} = 150V$$

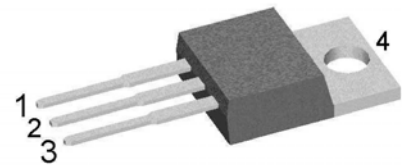
$$I_{FAV} = 2 \times 30A$$

$$V_F = 0.8V$$

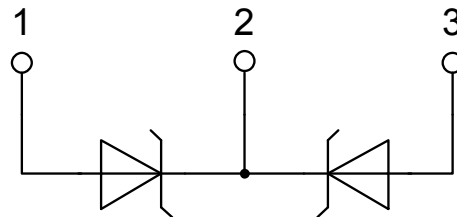
High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

Part number

DSA60C150PB



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:

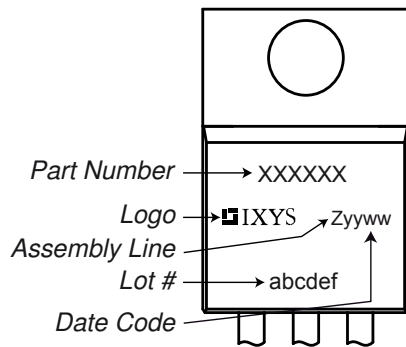
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

### 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	$T_{VJ} = 25^{\circ}C$			150	V
$V_{RRM}$	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}C$			150	V
$I_R$	reverse current, drain current	$V_R = 150 V$	$T_{VJ} = 25^{\circ}C$		450	$\mu A$
		$V_R = 150 V$	$T_{VJ} = 125^{\circ}C$		5	mA
$V_F$	forward voltage drop	$I_F = 30 A$	$T_{VJ} = 25^{\circ}C$		0.93	V
		$I_F = 60 A$			1.09	V
		$I_F = 30 A$	$T_{VJ} = 125^{\circ}C$		0.80	V
		$I_F = 60 A$			0.98	V
$I_{FAV}$	average forward current	$T_C = 150^{\circ}C$ rectangular $d = 0.5$	$T_{VJ} = 175^{\circ}C$		30	A
$V_{FO}$	threshold voltage	} for power loss calculation only	$T_{VJ} = 175^{\circ}C$		0.55	V
$r_F$	slope resistance				6	m $\Omega$
$R_{thJC}$	thermal resistance junction to case				0.85	K/W
$R_{thCH}$	thermal resistance case to heatsink			0.50		K/W
$P_{tot}$	total power dissipation		$T_C = 25^{\circ}C$		175	W
$I_{FSM}$	max. forward surge current	$t = 10 ms; (50 Hz), sine; V_R = 0 V$	$T_{VJ} = 45^{\circ}C$		390	A
$C_J$	junction capacitance	$V_R = 12 V \quad f = 1 MHz$	$T_{VJ} = 25^{\circ}C$		289	pF

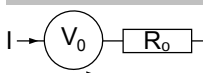
Package TO-220			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
$I_{RMS}$	RMS current	per terminal <sup>1)</sup>			35	A
$T_{VJ}$	virtual junction temperature		-55		175	°C
$T_{op}$	operation temperature		-55		150	°C
$T_{stg}$	storage temperature		-55		150	°C
<b>Weight</b>				2		g
$M_D$	mounting 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  
 60 = Current Rating [A]  
 C = Common Cathode  
 150 = Reverse Voltage [V]  
 PB = TO-220AB (3)

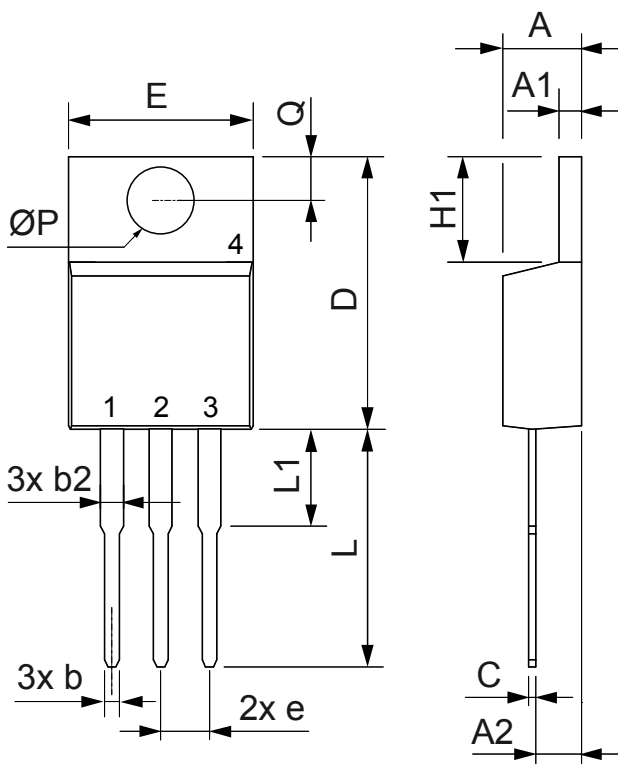
Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA60C150PB	DSA60C150PB	Tube	50	509198

Similar Part	Package	Voltage class
DSA50C150HB	TO-247AD (3)	150

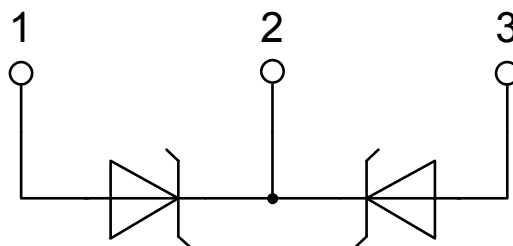
**Equivalent Circuits for Simulation**
*\* on die level*
 $T_{VJ} = 175\text{ °C}$ 

**Schottky**

$V_{0\ max}$	threshold voltage	0.55	V
$R_{0\ max}$	slope resistance *	2.8	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

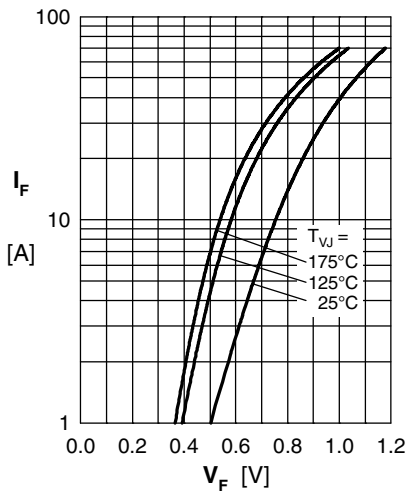


Fig. 1 Maximum forward voltage drop characteristics

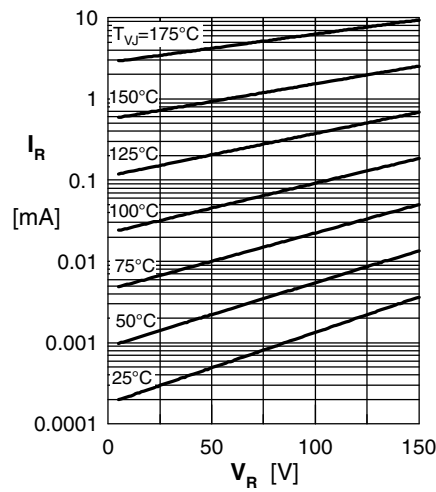


Fig. 2 Typ. reverse current  $I_R$  vs. reverse voltage  $V_R$

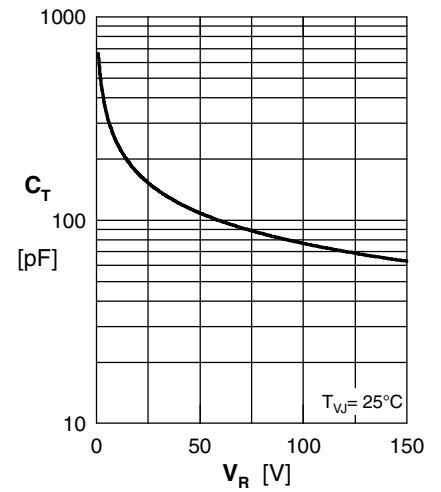


Fig. 3 Typ. junction capacitance  $C_T$  vs. reverse voltage  $V_R$

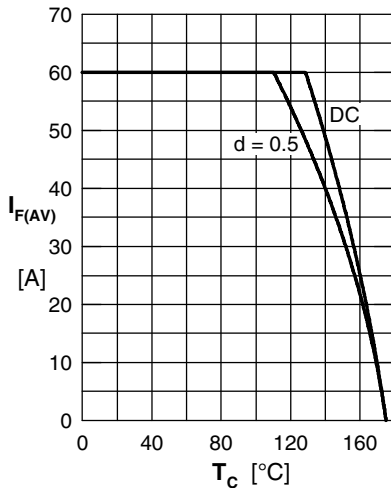


Fig. 4 Average forward current  $I_{F(AV)}$  vs. case temperature  $T_C$

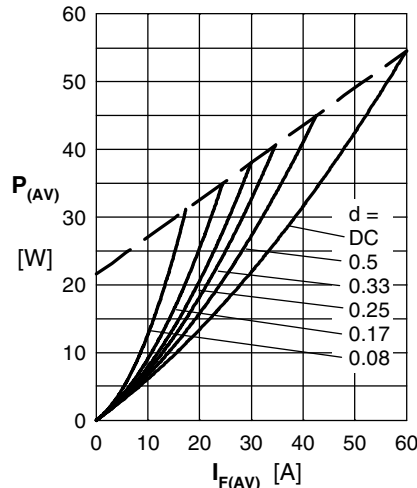


Fig. 5 Forward power loss characteristics

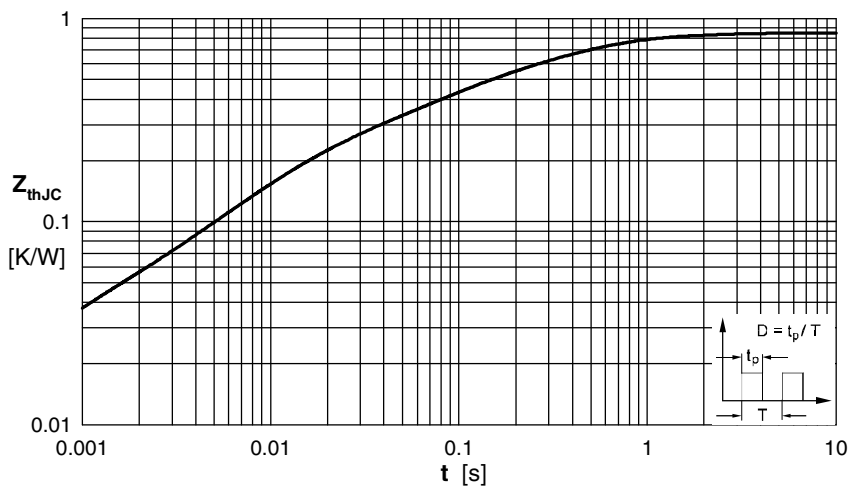


Fig. 6 Transient thermal impedance junction to case at various duty cycles

i	$R_{thi}$ [K/W]	$t_i$ [s]
1	0.02326	0.0005
2	0.1539	0.011
3	0.2031	0.072
4	0.3892	0.34
5	0.08053	1.5