

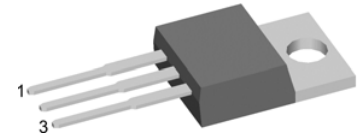
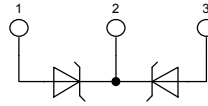
## Schottky Diode Gen<sup>2</sup>

High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

$$\begin{aligned} V_{RRM} &= 150 \text{ V} \\ I_{FAV} &= 2 \times 30 \text{ A} \\ V_F &= 0.80 \text{ V} \end{aligned}$$

Part number

**DSA 60 C 150 PB**



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

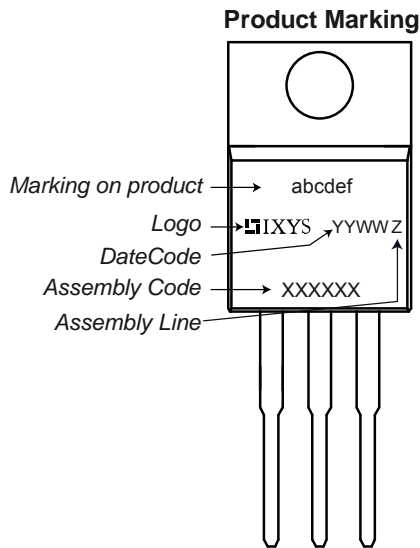
### Package:

- Housing: TO-220
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$V_{RRM}$	max. repetitive reverse voltage				150	V
$I_R$	reverse current	$V_R = 150 \text{ V}$			0.45	mA
		$V_R = 150 \text{ V}$			5	mA
$V_F$	forward voltage	$I_F = 30 \text{ A}$			0.93	V
		$I_F = 60 \text{ A}$			1.09	V
		$I_F = 30 \text{ A}$			0.80	V
		$I_F = 60 \text{ A}$			0.98	V
$I_{FAV}$	average forward current	rectangular $d = 0.5$			30	A
$V_{FO}$	threshold voltage	} for power loss calculation only			0.55	V
$r_F$	slope resistance				6	mΩ
$R_{thJC}$	thermal resistance junction to case				0.85	K/W
$T_{VJ}$	virtual junction temperature		-55		175	°C
$P_{tot}$	total power dissipation				175	W
$I_{FSM}$	max. forward surge current	$t = 10 \text{ ms}$ (50 Hz), sine			200	A
$C_J$	junction capacitance	$V_R = 12 \text{ V}; f = 1 \text{ MHz}$		289		pF

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$I_{RMS}$	RMS current	per terminal <sup>1)</sup>			35	A
$R_{thCH}$	thermal resistance case to heatsink			0.50		K/W
$T_{stg}$	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

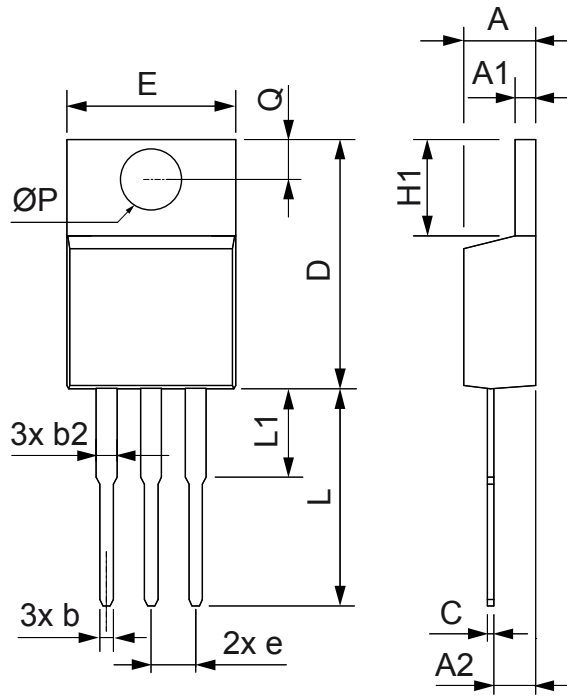
<sup>1)</sup>  $I_{RMS}$  is typically limited by the pin-to-chip resistance (1); or by the current capability of the chip (2).  
 In case of (1) and a common cathode/anode configuration with a non-isolated backside, the current capability can be increased by connecting the backside.


**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 Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSA 60 C 150 PB	DSA60C150PB	Tube	50	509198

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

**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

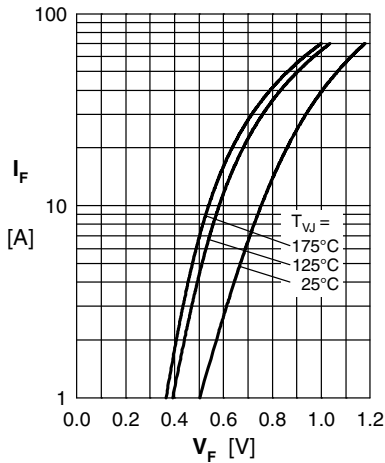


Fig. 1 Maximum forward voltage drop characteristics

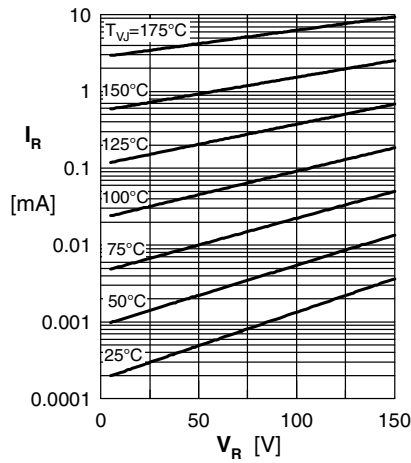


Fig. 2 Typ. reverse current  $I_R$  vs. reverse voltage  $V_R$

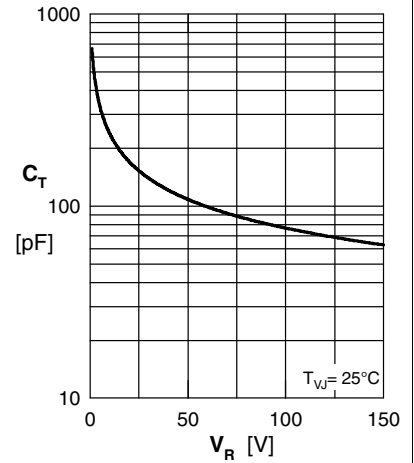


Fig. 3 Typ. junction capacitance  $C_T$  vs. reverse voltage  $V_R$

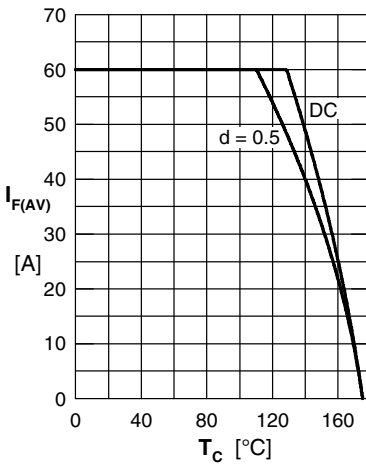


Fig. 4 Average forward current  $I_{F(AV)}$  vs. case temperature  $T_C$

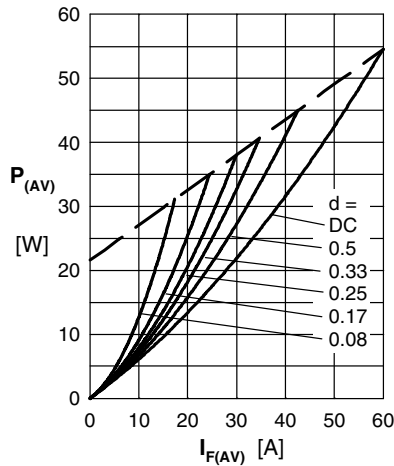


Fig. 5 Forward power loss characteristics

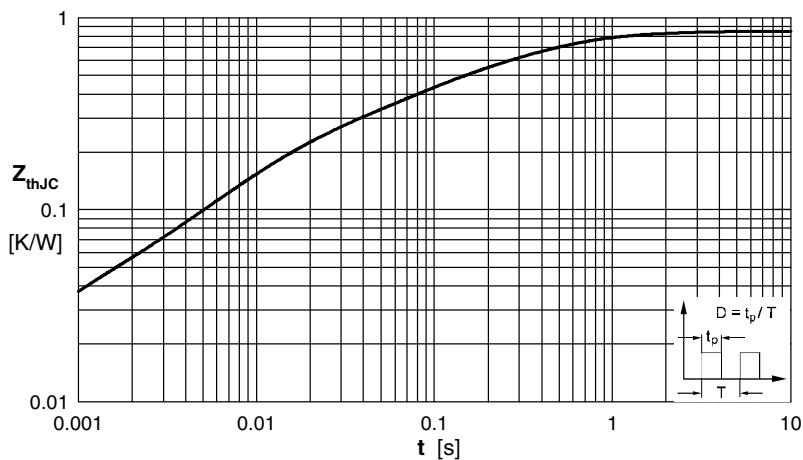


Fig. 6 Transient thermal impedance junction to case at various duty cycles

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