

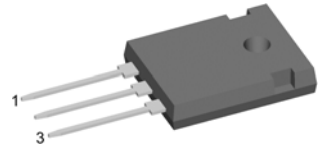
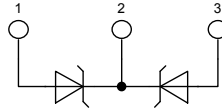
# Schottky Diode Gen<sup>2</sup>

High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

$V_{RRM} = 100\text{ V}$   
 $I_{FAV} = 2 \times 35\text{ A}$   
 $V_F = 0.74\text{ V}$

Part number

**DSA 70 C 100 HB**



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

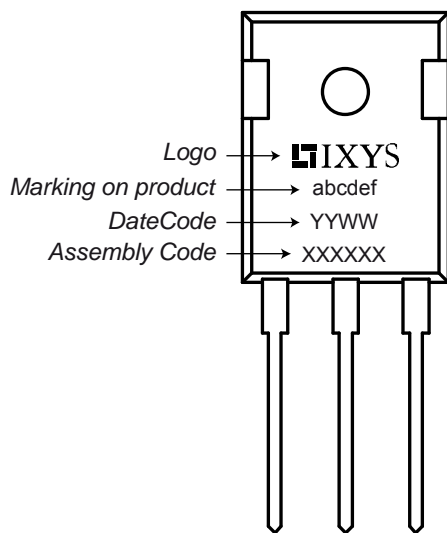
### Package:

- Housing: TO-247
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$V_{RRM}$	max. repetitive reverse voltage				100	V
$I_R$	reverse current	$V_R = 100\text{ V}$			0.68	mA
		$V_R = 100\text{ V}$			7.5	mA
$V_F$	forward voltage	$I_F = 35\text{ A}$			0.92	V
		$I_F = 70\text{ A}$			1.10	V
		$I_F = 35\text{ A}$			0.74	V
		$I_F = 70\text{ A}$			0.95	V
$I_{FAV}$	average forward current	rectangular d = 0.5			35	A
$V_{F0}$	threshold voltage	} for power loss calculation only			0.45	V
$r_F$	slope resistance				6	mΩ
$R_{thJC}$	thermal resistance junction to case				0.70	K/W
$T_{VJ}$	virtual junction temperature		-55		175	°C
$P_{tot}$	total power dissipation				160	W
$I_{FSM}$	max. forward surge current	t = 10 ms (50 Hz), sine			420	A
$C_J$	junction capacitance	$V_R = 12\text{ V}$ ; f = 1 MHz		406		pF

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$I_{RMS}$	RMS current	per terminal <sup>1)</sup>			50	A
$R_{thCH}$	thermal resistance case to heatsink			0.25		K/W
$T_{stg}$	storage temperature		-55		150	°C
<b>Weight</b>				6		g
$M_D$	mounting torque		0.8		1.2	Nm
$F_C$	mounting force with clip		20		120	N

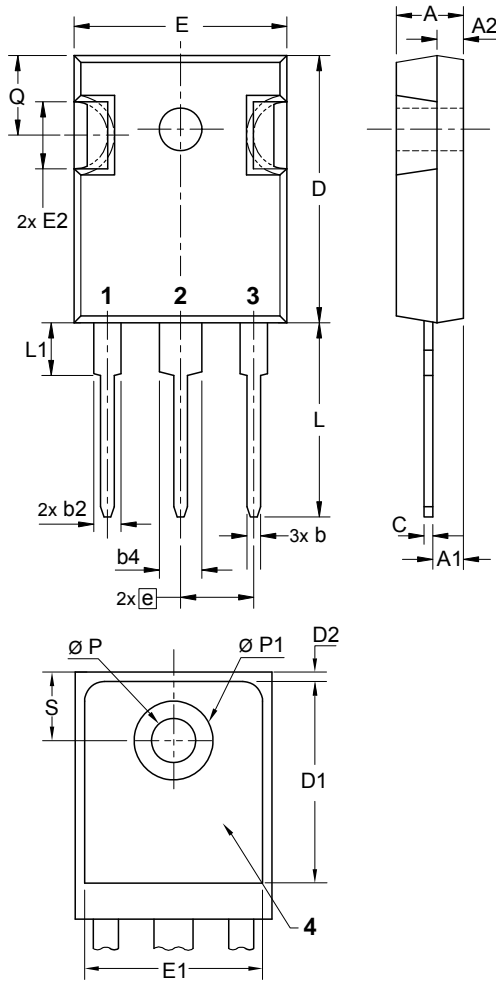
<sup>1)</sup>  $I_{RMS}$  is typically limited by the pin-to-chip resistance (1); or by the current capability of the chip (2).  
 In case of (1) and a common cathode/anode configuration with a non-isolated backside, the current capability can be increased by connecting the backside.

**Product Marking**

**Part number**

D = Diode  
 S = Schottky Diode  
 A = low VF  
 70 = Current Rating [A]  
 C = Common Cathode  
 100 = Reverse Voltage [V]  
 HB = TO-247AD (3)

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSA 70 C 100 HB	DSA70C100HB	Tube	30	502788

Similar Part	Package	Voltage class
DSA80C100PB	TO-220AB (3)	100

**Outlines TO-247**


Sym.	Inches		Millimeter	
	min.	max.	min.	max.
A	0.185	0.209	4.70	5.30
A1	0.087	0.102	2.21	2.59
A2	0.059	0.098	1.50	2.49
D	0.819	0.845	20.79	21.45
E	0.610	0.640	15.48	16.24
E2	0.170	0.216	4.31	5.48
e	0.215 BSC		5.46 BSC	
L	0.780	0.800	19.80	20.30
L1	-	0.177	-	4.49
Ø P	0.140	0.144	3.55	3.65
Q	0.212	0.244	5.38	6.19
S	0.242 BSC		6.14 BSC	
b	0.039	0.055	0.99	1.40
b2	0.065	0.094	1.65	2.39
b4	0.102	0.135	2.59	3.43
c	0.015	0.035	0.38	0.89
D1	0.515	-	13.07	-
D2	0.020	0.053	0.51	1.35
E1	0.530	-	13.45	-
Ø P1	-	0.29	-	7.39

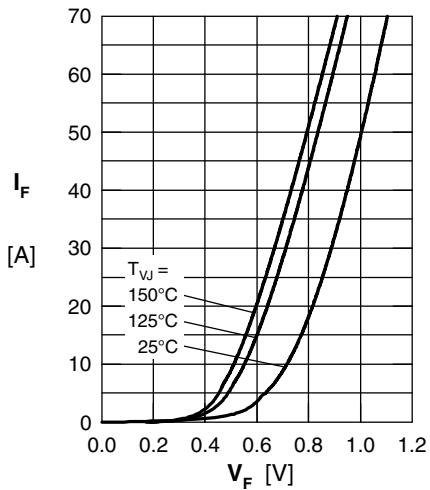


Fig. 1 Maximum forward voltage drop characteristics

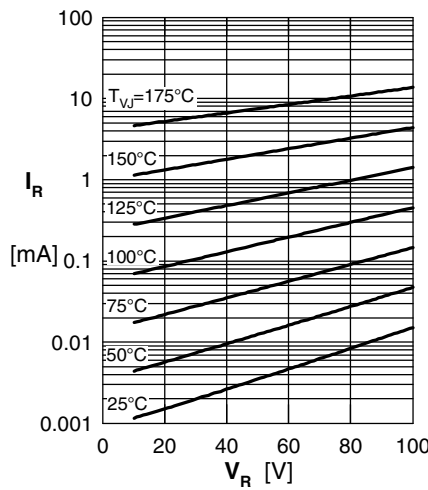


Fig. 2 Typ. reverse current  $I_R$  vs. reverse voltage  $V_R$

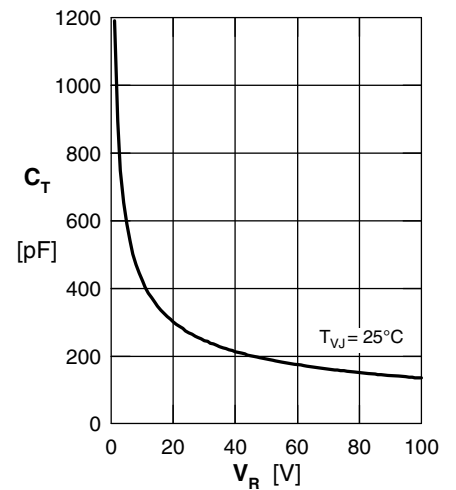


Fig. 3 Typ. junction capacitance  $C_T$  vs. reverse voltage  $V_R$

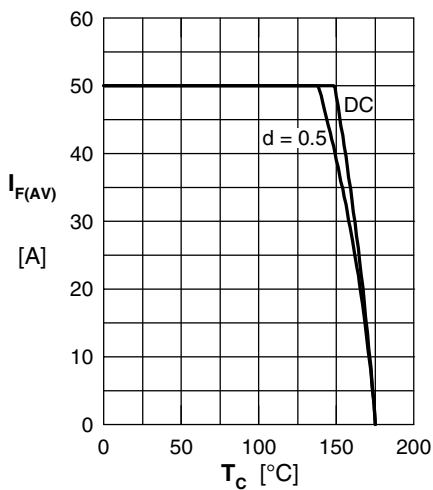


Fig. 4 Average forward current  $I_{F(AV)}$  vs. case temperature  $T_C$

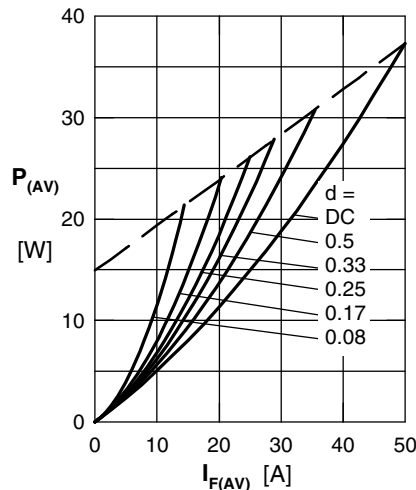


Fig. 5 Forward power loss characteristics

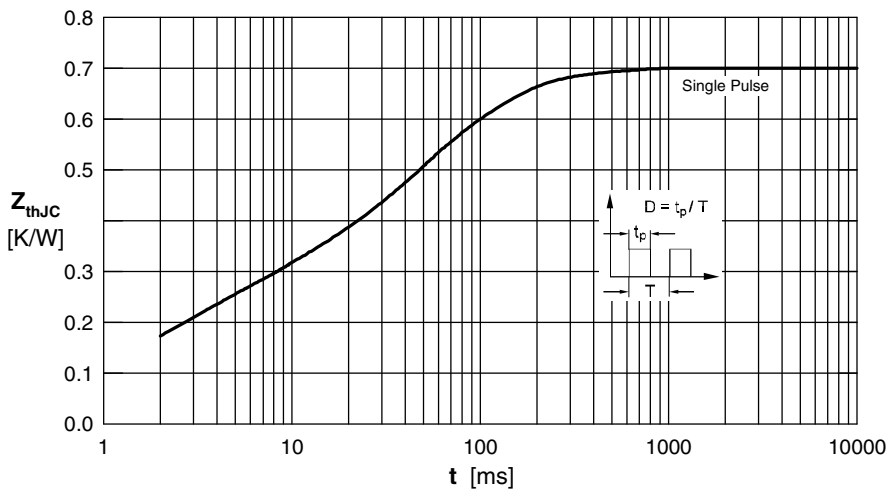


Fig. 6 Transient thermal impedance junction to case

Note: All curves are per diode