

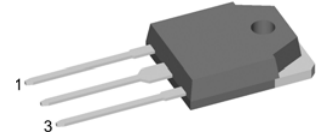
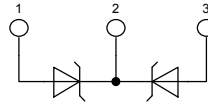
## Schottky Diode Gen<sup>2</sup>

High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

$$\begin{aligned} V_{RRM} &= 100 \text{ V} \\ I_{FAV} &= 2 \times 25 \text{ A} \\ V_F &= 0.72 \text{ V} \end{aligned}$$

Part number

**DSA 50 C 100 QB**



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

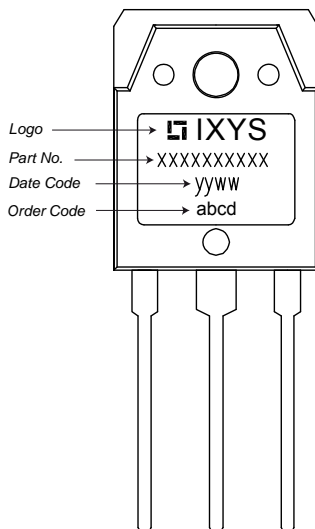
### Package:

- Housing: TO-3P
- Industry standard outline compatible with TO-247
- 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	$V_R = 100 \text{ V}$			0.45	mA
		$V_R = 100 \text{ V}$			5	mA
$V_F$	forward voltage	$I_F = 25 \text{ A}$			0.90	V
		$I_F = 50 \text{ A}$			1.07	V
		$I_F = 25 \text{ A}$			0.72	V
		$I_F = 50 \text{ A}$			0.90	V
$I_{FAV}$	average forward current	rectangular d = 0.5			25	A
$V_{FO}$	threshold voltage	} for power loss calculation only			0.45	V
$r_F$	slope resistance				7.3	mΩ
$R_{thJC}$	thermal resistance junction to case				0.95	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			230	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 pin <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>				5		g
$M_D$	mounting torque		0.8		1.2	Nm
$F_C$	mounting force with clip		20		120	N

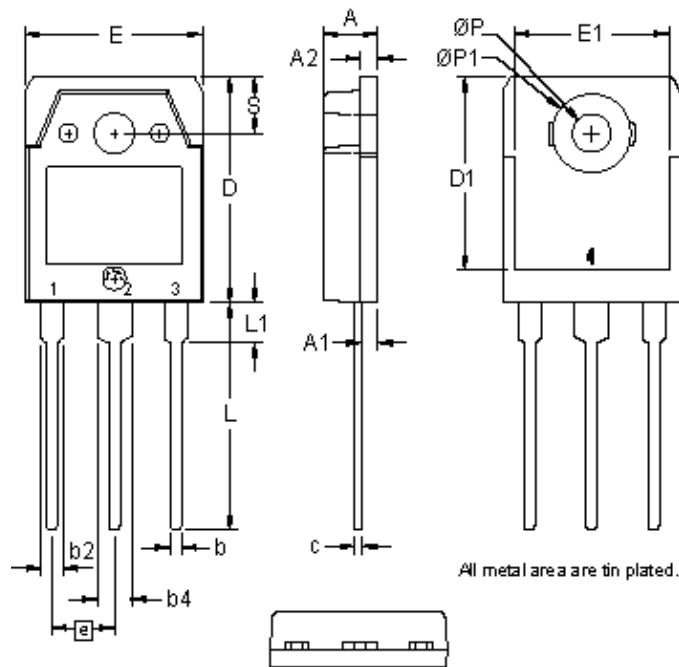
<sup>1)</sup>  $I_{RMS}$  is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.  
 In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

**Product Marking**

**Part number**

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

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSA 50 C 100 QB	DSA50C100QB	Tube	30	504033

Similar Part	Package	Voltage class
DSA50C100HB	TO-247AD (3)	100
DSA60C100PB	TO-220AB (3)	100

**Outlines TO-3P**


SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.185	.193	4.70	4.90
A1	.051	.059	1.30	1.50
A2	.057	.065	1.45	1.65
b	.035	.045	0.90	1.15
b2	.075	.087	1.90	2.20
b4	.114	.126	2.90	3.20
c	.022	.031	0.55	0.80
D	.780	.791	19.80	20.10
D1	.665	.677	16.90	17.20
E	.610	.622	15.50	15.80
E1	.531	.539	13.50	13.70
e	.215 BSC		5.45 BSC	
L	.779	.795	19.80	20.20
L1	.134	.142	3.40	3.60
ØP	.126	.134	3.20	3.40
ØP1	.272	.280	6.90	7.10
S	.193	.201	4.90	5.10

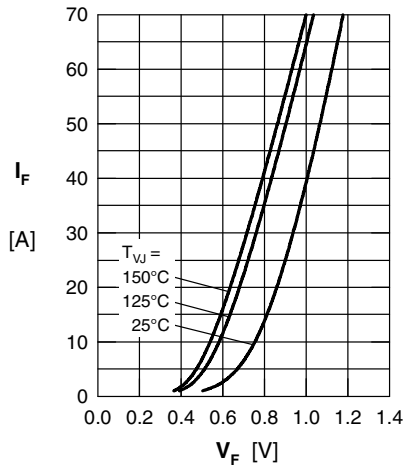


Fig. 1 Maximum forward voltage drop characteristics

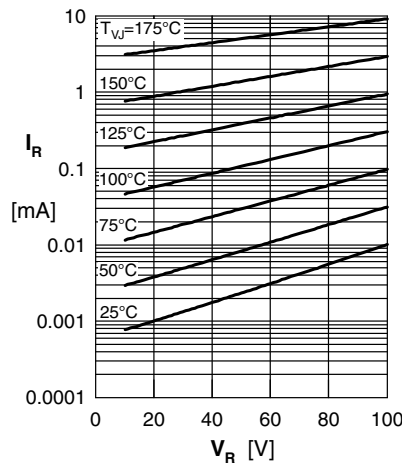


Fig. 2 Typ. reverse current  $I_R$  vs. reverse voltage  $V_R$

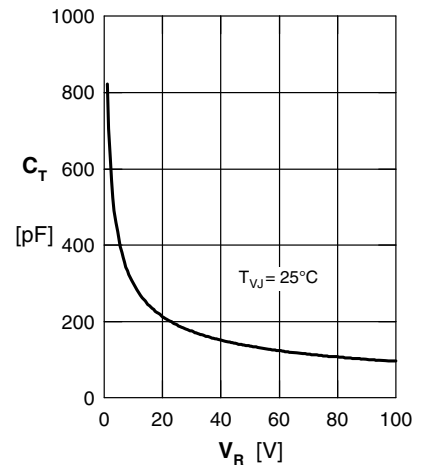


Fig. 3 Typ. junction capacitance  $C_T$  vs. reverse voltage  $V_R$

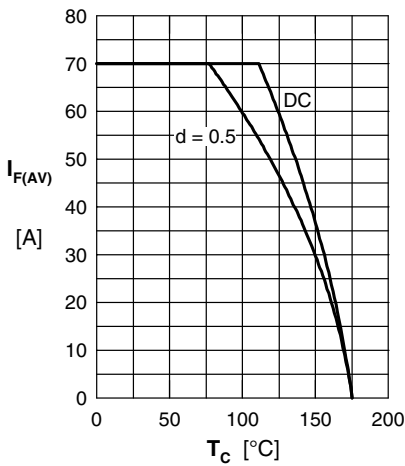


Fig. 4 Average forward current  $I_{F(AV)}$  vs. case temperature  $T_C$

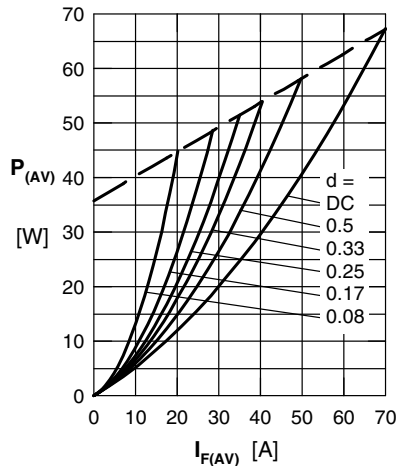


Fig. 5 Forward power loss characteristics

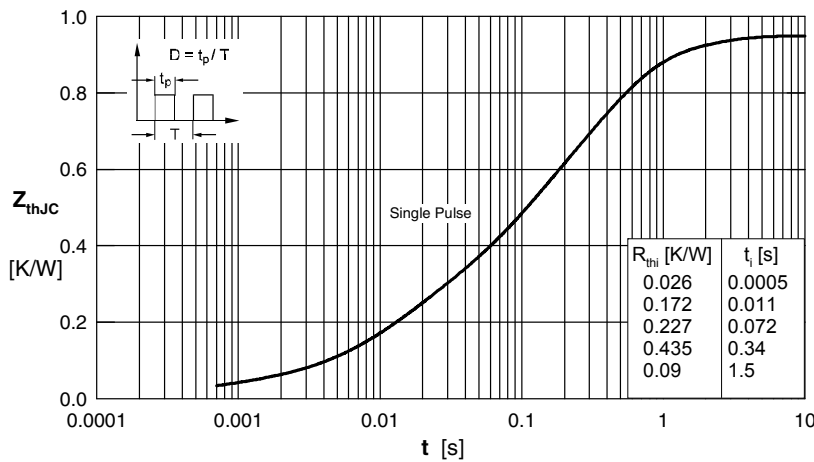


Fig. 6 Transient thermal impedance junction to case

Note: All curves are per diode