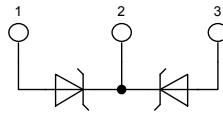


Schottky Diode Gen²

High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

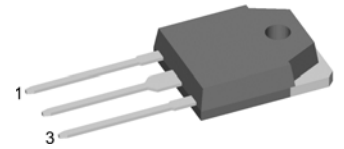
DSA 50 C 100 QB



$$V_{RRM} = 100 \text{ V}$$

$$I_{FAV} = 2 \times 25 \text{ A}$$

$$V_F = 0.72 \text{ V}$$



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

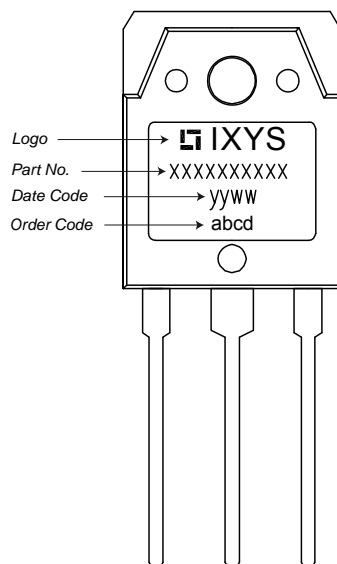
Package:

- 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_{F0}	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 ¹⁾			50	A
R_{thCH}	thermal resistance case to heatsink			0.25		K/W
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

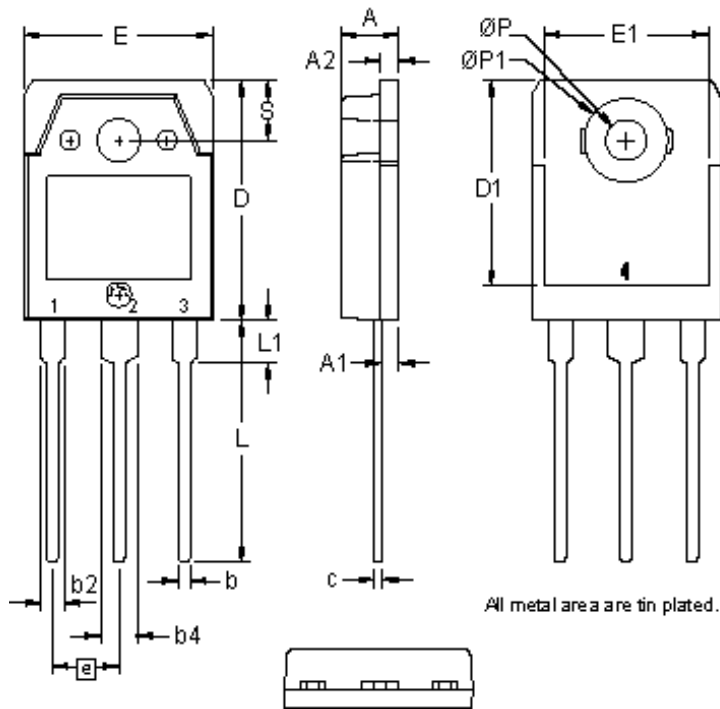
¹⁾ I_{RMS} is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.
 In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

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

All metal area are tin plated.

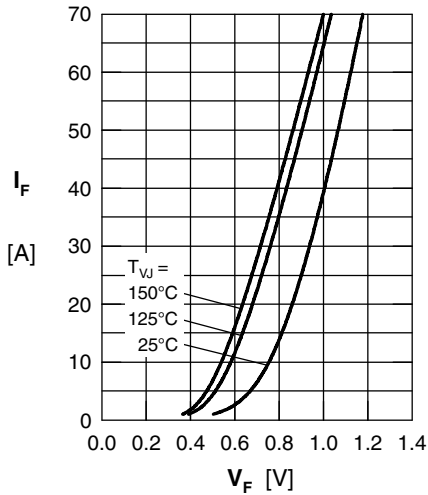


Fig. 1 Maximum forward voltage drop characteristics

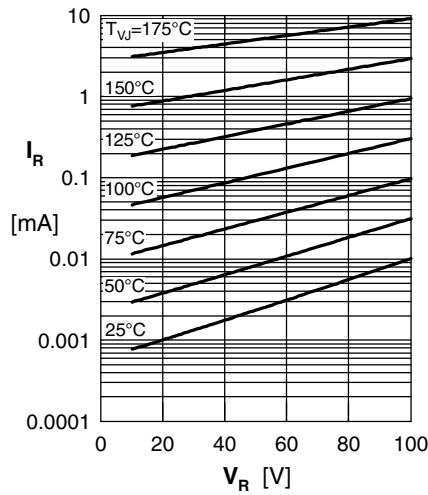


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

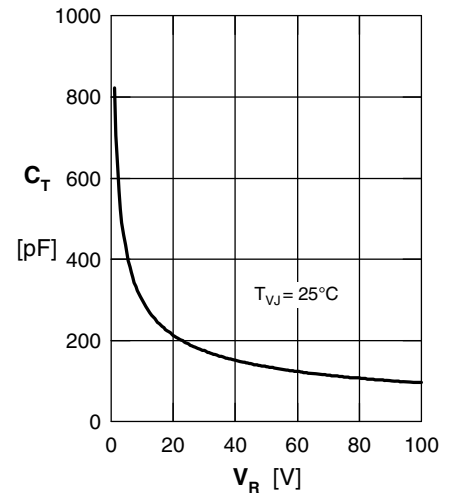


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

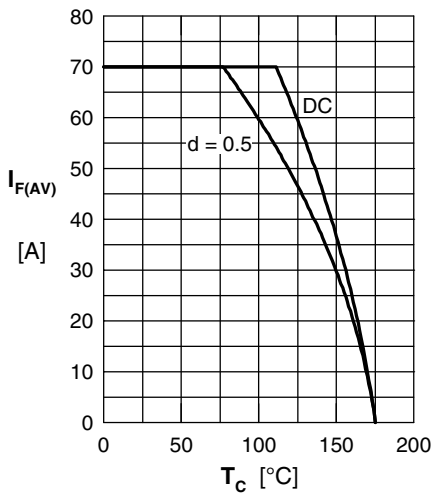


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temperature T_C

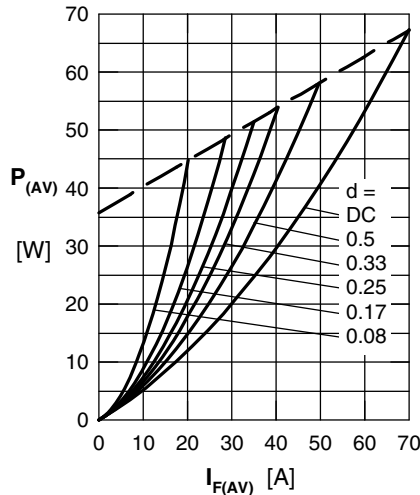


Fig. 5 Forward power loss characteristics

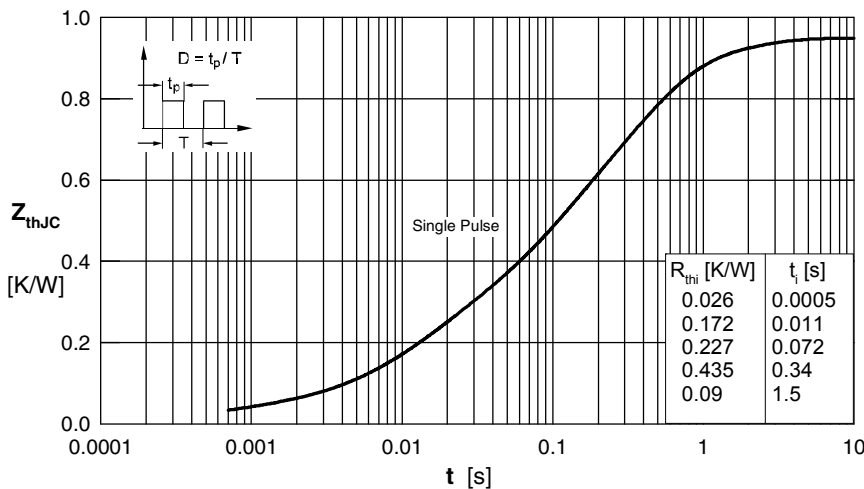


Fig. 6 Transient thermal impedance junction to case

Note: All curves are per diode