

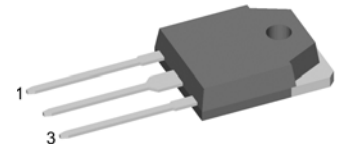
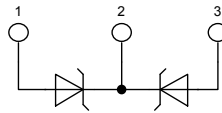
Schottky Diode Gen²

High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

$V_{RRM} = 150\text{ V}$
 $I_{FAV} = 2 \times 60\text{ A}$
 $V_F = 0.80\text{ V}$

Part number

DSA 120 C 150 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

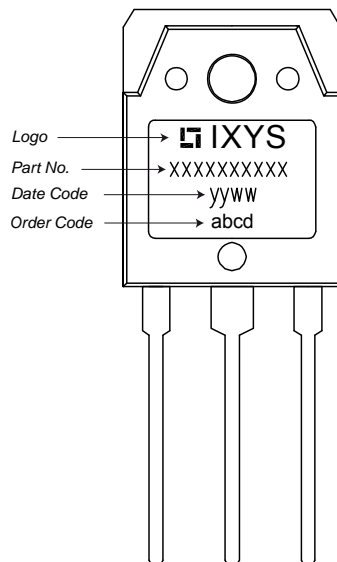
Package:

- 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				150	V
I_R	reverse current	$V_R = 150\text{ V}$			1.8	mA
		$V_R = 150\text{ V}$			5	mA
V_F	forward voltage	$I_F = 60\text{ A}$			0.93	V
		$I_F = 120\text{ A}$			1.13	V
		$I_F = 60\text{ A}$			0.80	V
		$I_F = 120\text{ A}$			1.03	V
I_{FAV}	average forward current	rectangular d = 0.5			60	A
V_{F0}	threshold voltage				0.51	V
r_F	slope resistance					
R_{thJC}	thermal resistance junction to case				0.40	K/W
T_{VJ}	virtual junction temperature		-55		175	°C
P_{tot}	total power dissipation				375	W
I_{FSM}	max. forward surge current	t = 10 ms (50 Hz), sine			600	A
C_j	junction capacitance	$V_R = 24\text{ V}$; f = 1 MHz		481		pF

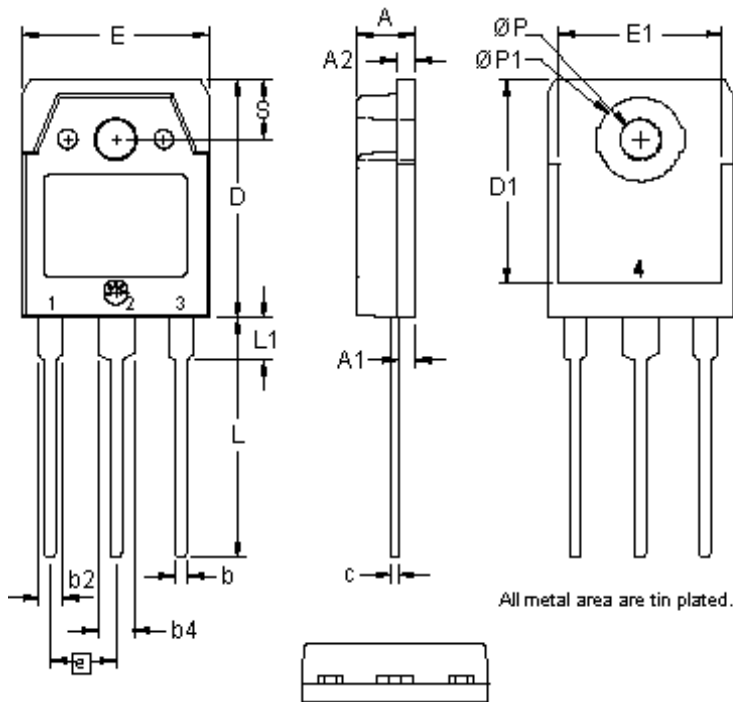
Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
I_{RMS}	RMS current	per pin ¹⁾			70	A
R_{thCH}	thermal resistance case to heatsink			0.25		K/W
T_{stg}	storage temperature		-55		150	°C
Weight				5		g
M_D	mounting torque		0.8		1.2	Nm
F_C	mounting force with clip		20		120	N

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
- 120 = Current Rating [A]
- C = Common Cathode
- 150 = Reverse Voltage [V]
- QB = TO-3P (3)

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSA 120 C 150 QB	DSA120C150QB	Tube	30	501788

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	.090	1.15
b2	.075	.087	1.90	2.20
b4	.114	.126	2.90	3.20
c	.022	.031	.055	.080
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		.545 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

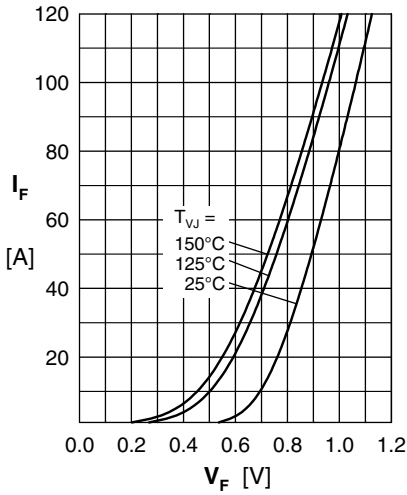


Fig. 1 Maximum forward voltage drop characteristics

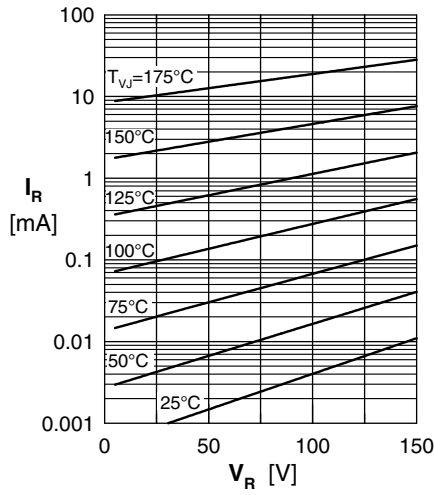


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

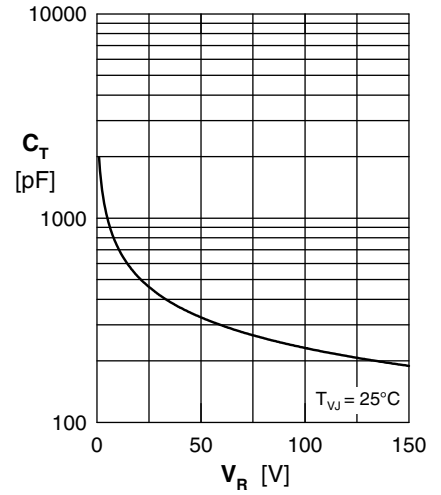


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

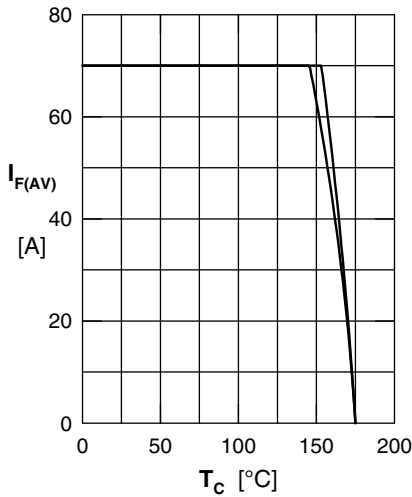


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temperature T_C

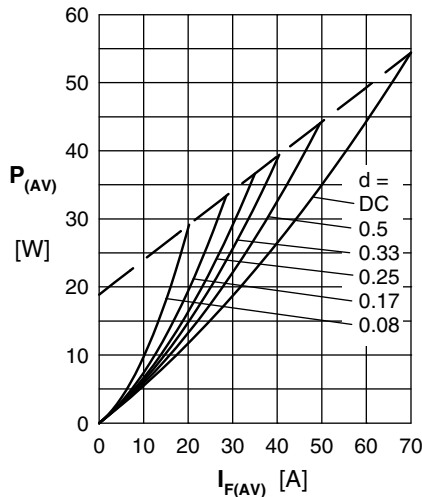


Fig. 5 Forward power loss characteristics

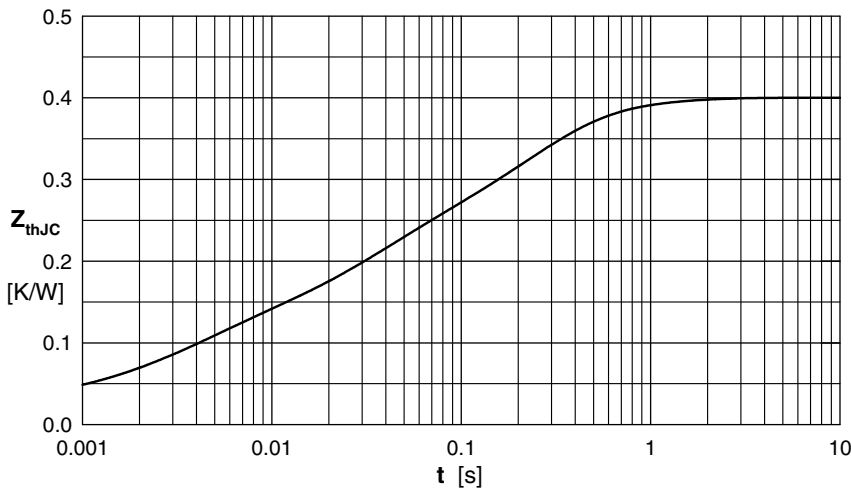


Fig. 6 Transient thermal impedance junction to case at various duty cycles

R_{thi}	t_i
0.022	0.0002
0.082	0.0032
0.104	0.026
0.165	0.208
0.027	0.79

Note: All curves are per diode