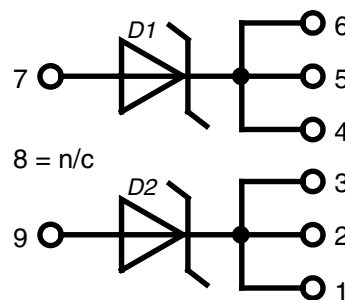
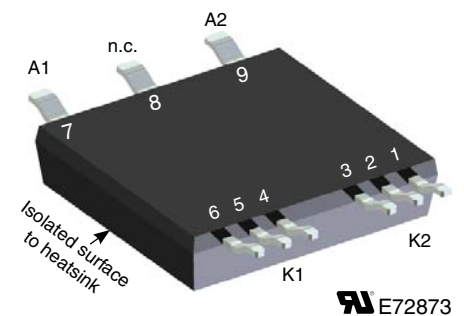


Schottky Diode Gen²

$V_{RRM} = 150\text{ V}$
 $I_{DAV} = 2 \times 75\text{ A}$
 $V_F = 0.80\text{ V}$

High Performance Schottky Diode
 Low Loss and Soft Recovery
 Parallel Legs

Part number
 DSA120X150LB



Features / Advantages:

- Very low V_F
- Extremely low switching losses
- Low I_{RM} values
- Improved thermal behaviour
- High reliability circuits operation
- Low voltage peaks for reduced protection circuits
- Low noise switching

Applications:

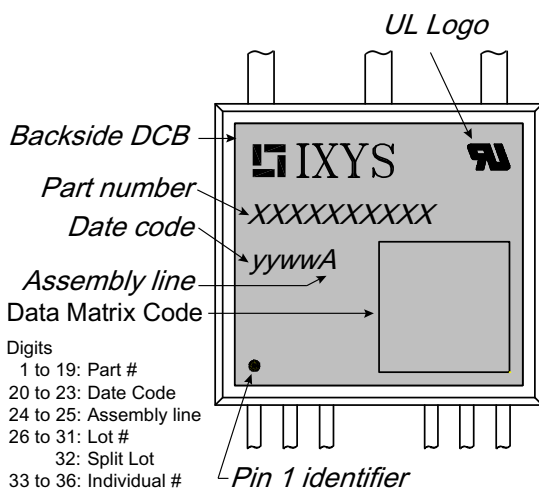
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Package: SMPD

- Isolation Voltage: 3000 V~ ($t = 1\text{ s}$)
- Industry convenient outline
- RoHS compliant
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

Schottky				Ratings		
Symbol	Definitions	Conditions	min.	typ.	max.	
V_{RSM}	max. non-repetitive rev. blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$			150	V
V_{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$			150	V
I_R	reverse current, drain current	$V_R = 150\text{ V}$			1 5	mA mA
V_F	forward voltage drop	$I_F = 60\text{ A}$ $I_F = 120\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$		0.93 1.13	V V
		$I_F = 60\text{ A}$ $I_F = 120\text{ A}$	$T_{VJ} = 150^{\circ}\text{C}$		0.74 0.95	V V
I_{FAV}	average forward current	rectangular; $d = 0.5$	$T_C = 135^{\circ}\text{C}$		75	A
V_{F0} r_F	threshold voltage slope resistance	} for power loss calculation only	$T_{VJ} = 175^{\circ}\text{C}$		0.51 1.3	V m Ω
R_{thJC}	thermal resistance junction to case				0.8	K/W
R_{thJH}	thermal resistance case to heatsink	with thermal transfer paste (IXYS test setup)		1.05	0.25	K/W
P_{tot}	total power dissipation	$T_C = 25^{\circ}\text{C}$			185	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}$; (50 Hz), sine; $V_R = 0\text{ V}$	$T_{VJ} = 45^{\circ}\text{C}$		700	A
C_J		$V_R = 24\text{ V}$; $f = 1\text{ MHz}$	$T_{VJ} = 25^{\circ}\text{C}$	480		pF

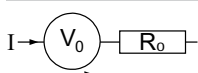
Package SMPD				Ratings		
Symbol	Definitions	Conditions	min.	typ.	max.	
I_{RMS}	RMS current	wide pin standard pin			100 60	A A
T_{stg}	storage temperature		-55		150	°C
T_{op}	operation temperature		-55		150	°C
T_{VJ}	virtual junction temperature		-55		175	°C
Weight					8.5	g
F_C	mounting force with clip		40		130	N
$d_{Spp/App}$	creepage distance on surface /	terminal to terminal	1.6			mm
$d_{Spb/Apb}$	striking distance through air	terminal to backside	4.0			mm
V_{ISOL}	isolation voltage	$t = 1$ second $t = 1$ minute		3000 2500		V V


Part number

- D = Diode
- S = Schottky Diode
- A = low V_F
- 120 = Current Rating [A]
- X = Parallel legs
- 150 = Reverse Voltage [V]
- LB = SMPD-B

- Digits**
- 1 to 19: Part #
 - 20 to 23: Date Code
 - 24 to 25: Assembly line
 - 26 to 31: Lot #
 - 32: Split Lot
 - 33 to 36: Individual #

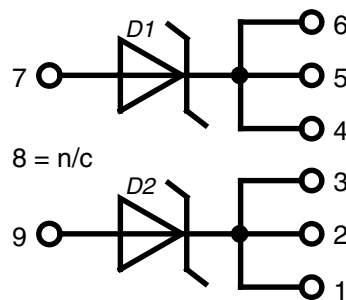
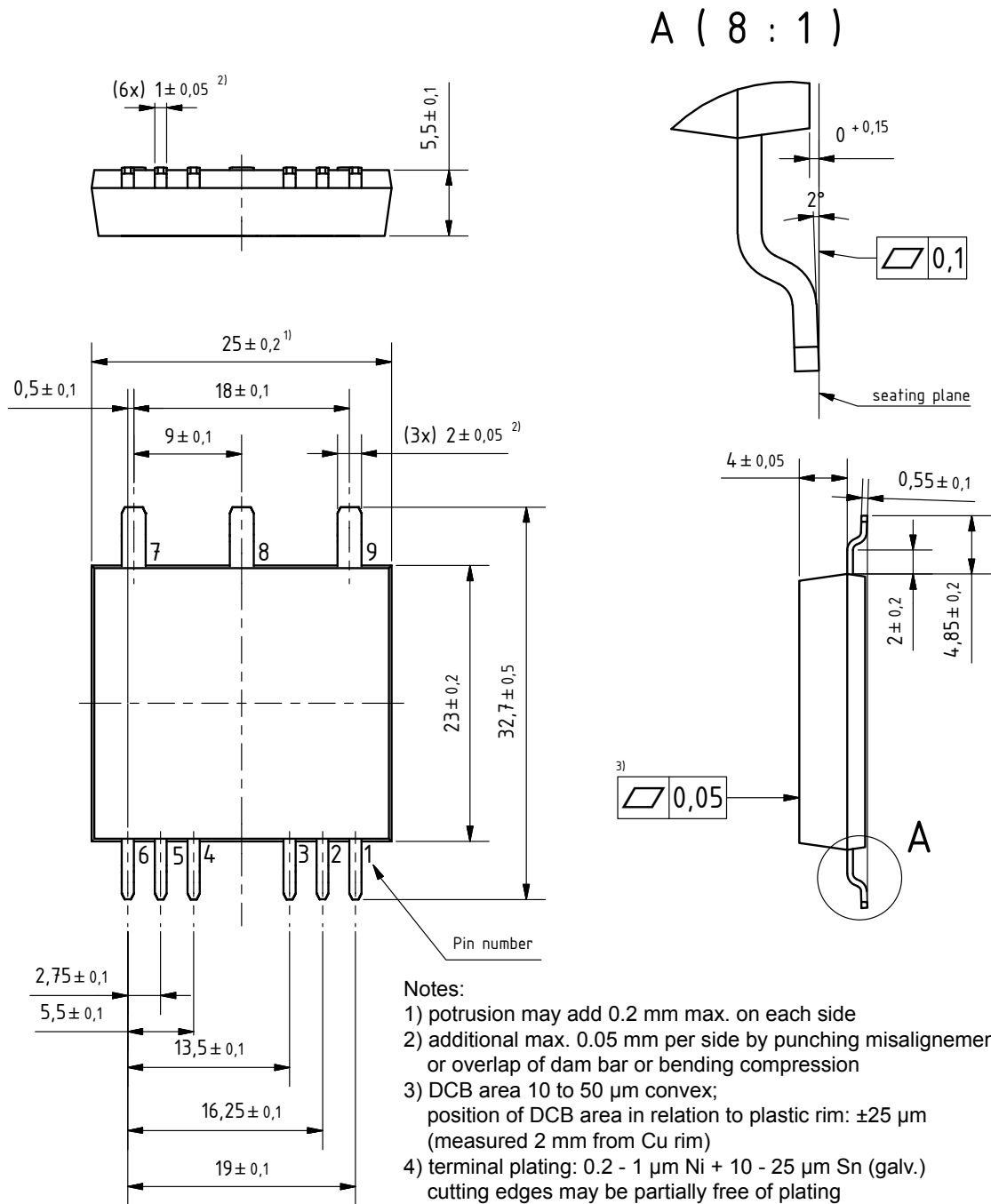
Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Ordering Code
Standard	DSA120X150LB-TRR	DSA120X150LB-TRR	Tape&Reel	200	510493
	DSA120X150LB	DSA120X150LB	Blister	45	510238

Equivalent Circuits for Simulation *on die level $T_{VJ} = 175^\circ\text{C}$


Schottky

$V_{0\max}$	threshold voltage	0.51	V
$R_{0\max}$	slope resistance *	1.3	mΩ

Outlines SMPD



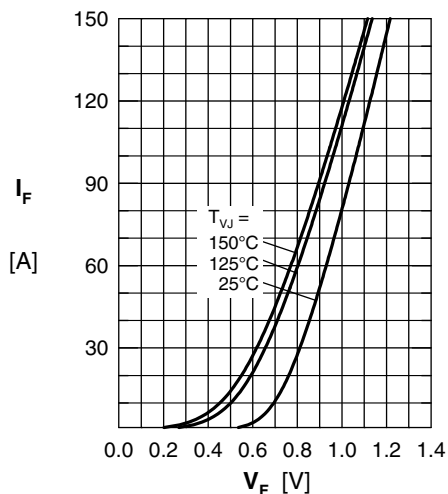


Fig. 1 Maximum forward voltage drop characteristics

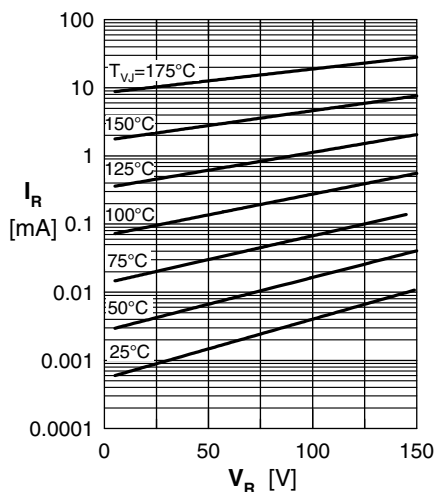


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

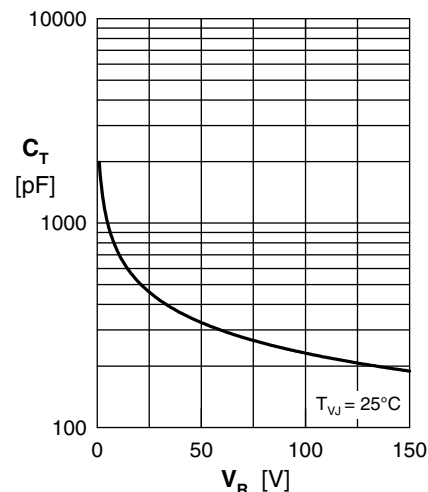


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

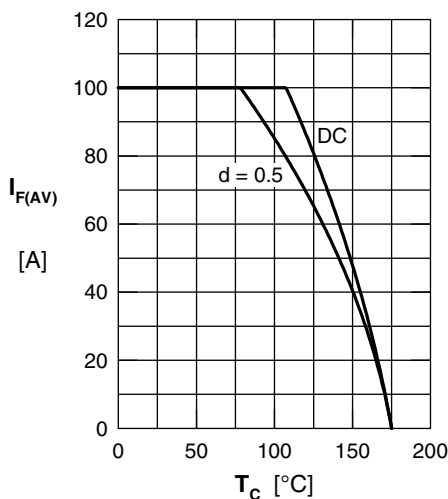


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temperature T_C

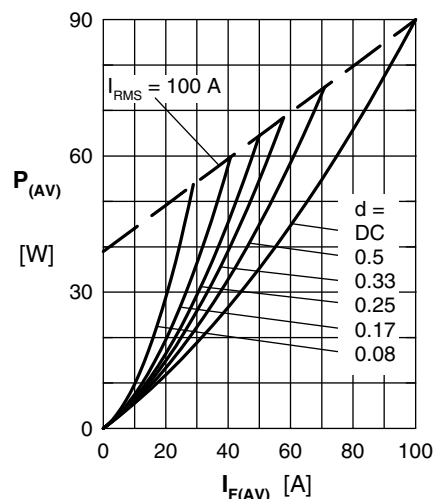


Fig. 5 Forward power loss @ $T_J = 175^\circ\text{C}$

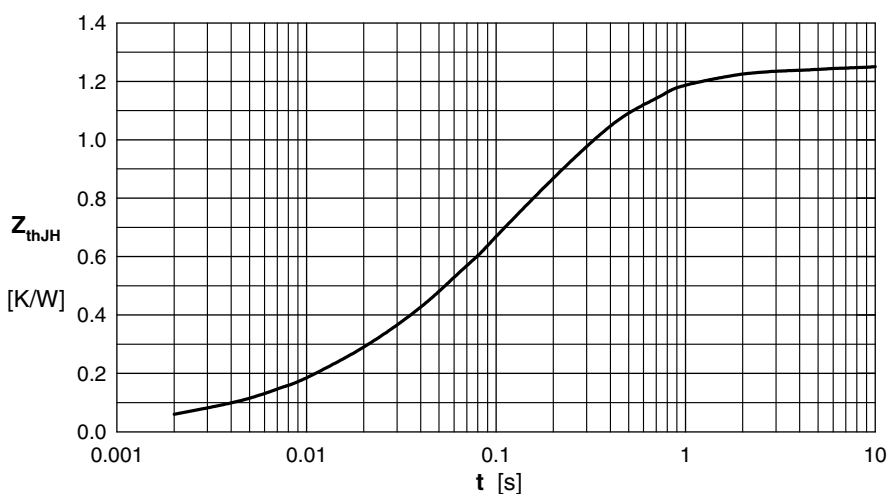


Fig. 6 Transient thermal impedance junction

Note: All curves are per diode