preliminary

Schottky Diode Gen ²

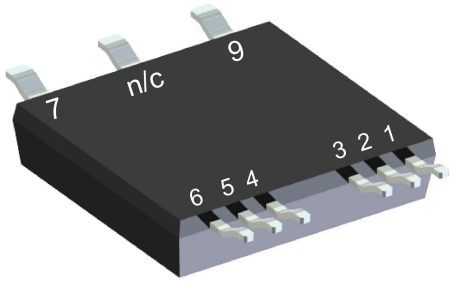
V_{RRM} = 200 V
I_{FAV} = 2x 65 A
V_F = 0.82 V

High Performance Schottky Diode
Low Loss and Soft Recovery
Parallel legs

Part number

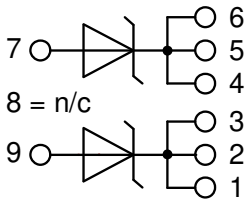
DSA120X200LB

Marking on Product: DSA120X200LB



Backside: isolated

E72873



Features / Advantages:

- Very low Vf
- Extremely low switching losses
- Low Irm 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

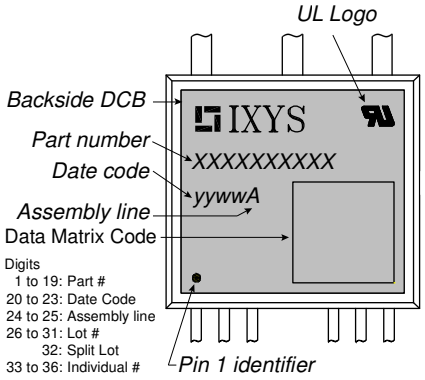
Package: SMPD

- Isolation Voltage: 3000 V~
- Industry convenient outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

Schottky

Symbol	Definition	Conditions		Ratings min.	typ.	max.	Unit
V_{RSM}	*max. non-repetitive reverse blocking voltage*		T_{VJ} = 25°C			200	V
V_{RRM}	*max. repetitive reverse blocking voltage*		T_{VJ} = 25°C			200	V
I_R	*reverse current, drain current*	V_R = 200 V	T_{VJ} = 25°C			1	mA
		V_R = 200 V	T_{VJ} = 125°C			5	mA
V_F	*forward voltage drop*	I_F = 60 A	T_{VJ} = 25°C			0.98	V
		I_F = 120 A				1.22	V
		I_F = 60 A	T_{VJ} = 150°C			0.82	V
		I_F = 120 A				1.10	V
I_{FAV}	*average forward current*	T_C = 130°C	T_{VJ} = 175°C			65	A
		rectangular d = 0.5					
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 175°C			0.51	V
r_F	*slope resistance* }					2.7	mΩ
R_{thJC}	*thermal resistance junction to case*					0.8	K/W
R_{thCH}	*thermal resistance case to heatsink*				0.40		K/W
P_{tot}	*total power dissipation*		T_C = 25°C			185	W
I_{FSM}	*max. forward surge current*	t = 10 ms; (50 Hz), sine; V_R = 0 V	T_{VJ} = 45°C			700	A
C_J	*junction capacitance*	V_R = 24 V f = 1 MHz	T_{VJ} = 25°C		394		pF

Package SMPD				**Ratings**			
Symbol	**Definition**	**Conditions**		**min.**	**typ.**	**max.**	**Unit**
I_{RMS}	*RMS current*	per terminal				100	A
T_{VJ}	*virtual junction temperature*			-55		175	°C
T_{op}	*operation temperature*			-55		150	°C
T_{stg}	*storage temperature*			-55		150	°C
Weight					8.5		g
F_C	*mounting force with clip*			40		130	N
$d_{Spp/App}$	*creepage distance on surface | striking distance through air*		*terminal to terminal*	1.6			mm
$d_{Spb/Apb}$			*terminal to backside*	4.0			mm
V_{ISOL}	*isolation voltage*	t = 1 second	50/60 Hz, RMS; I_{ISOL} ≤ 1 mA	3000			V
		t = 1 minute		2500			V



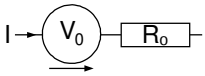
Part description

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

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA120X200LB-TUB	DSA120X200LB	Tube	20	524773
Alternative	DSA120X200LB-TRR	DSA120X200LB	Tape & Reel	200	523115

Equivalent Circuits for Simulation

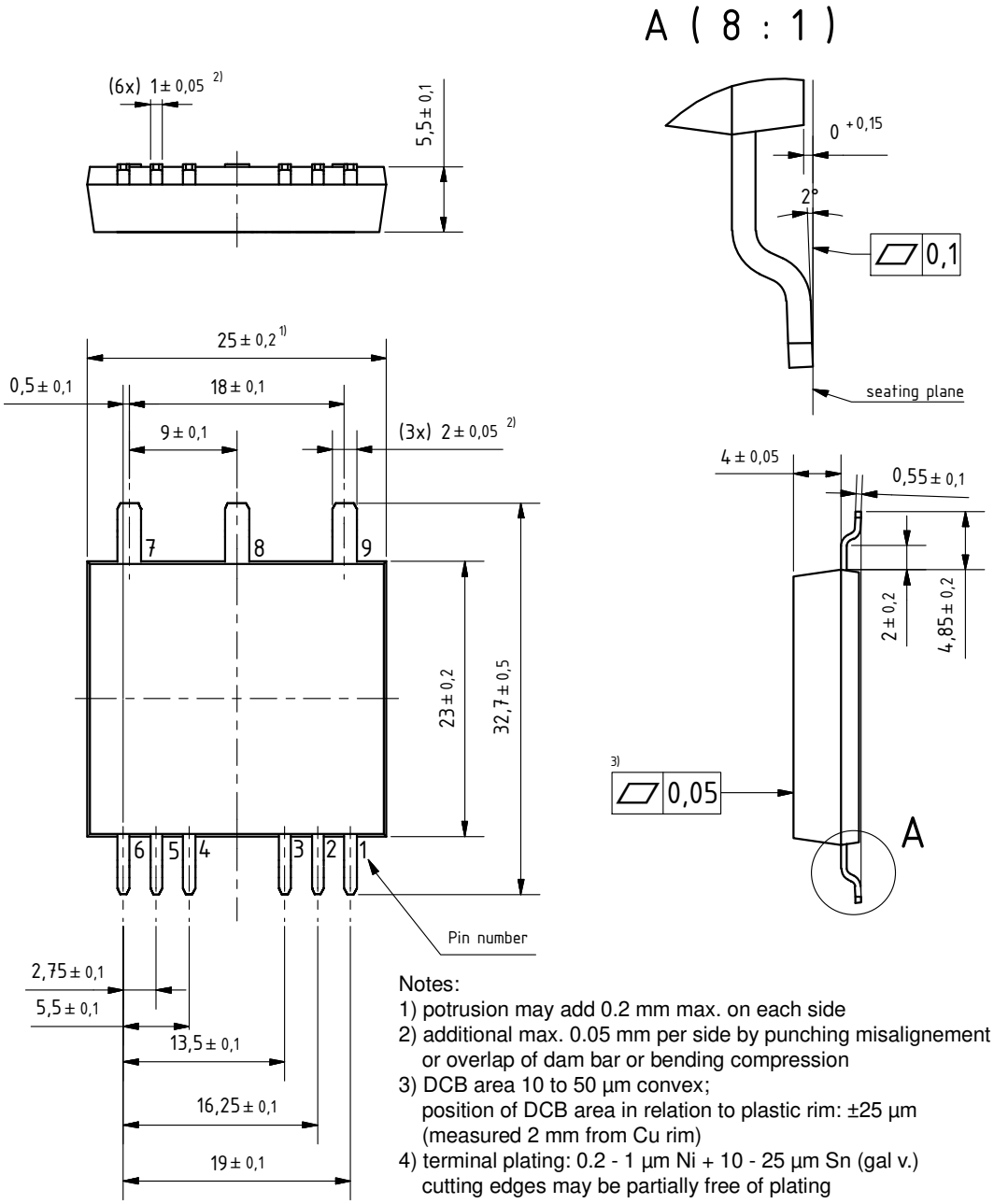
** on die level* T_{VJ} = 175 °C



Schottky

$V_{0\ max}$	*threshold voltage*	0.51	V
$R_{0\ max}$	*slope resistance **	2.7	mΩ

Outlines SMPD



Notes:
1) potrusion may add 0.2 mm max. on each side
2) additional max. 0.05 mm per side by punching misalignement or overlap of dam bar or bending compression
3) DCB area 10 to 50 µm convex; position of DCB area in relation to plastic rim: ±25 µm (measured 2 mm from Cu rim)
4) terminal plating: 0.2 - 1 µm Ni + 10 - 25 µm Sn (gal v.) cutting edges may be partially free of plating