

# High Efficiency Standard Rectifier

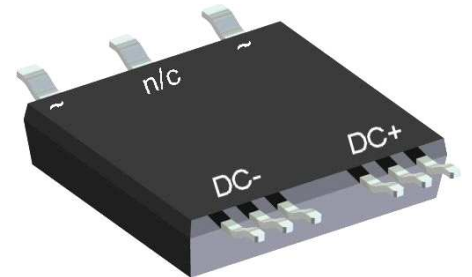
<b>1~ Rectifier</b>
$V_{RRM} = 1200\text{ V}$
$I_{DAV} = 124\text{ A}$
$I_{FSM} = 400\text{ A}$

## 1~ Rectifier Bridge


### Part number

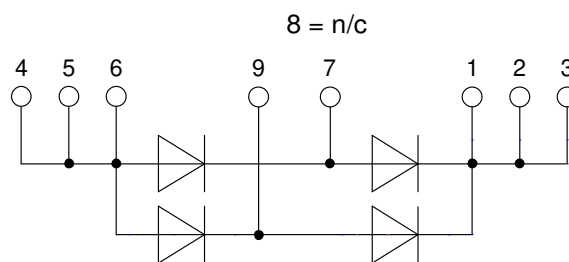
**DLA100B1200LB**

Marking on Product: *DLA100B1200LB*



Backside: isolated

 E72873



### Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very low forward voltage drop
- Improved thermal behaviour

### Applications:

- Diode Bridge for main rectification

### 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

### Disclaimer Notice

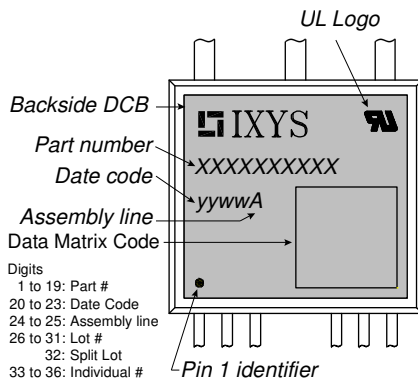
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Rectifier				Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit	
$V_{RSM}$	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}C$			1200	V	
$V_{RRM}$	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}C$			1200	V	
$I_R$	reverse current	$V_R = 1200 V$	$T_{VJ} = 25^{\circ}C$		10	$\mu A$	
		$V_R = 1200 V$	$T_{VJ} = 150^{\circ}C$		0.1	mA	
$V_F$	forward voltage drop	$I_F = 50 A$	$T_{VJ} = 25^{\circ}C$		1.23	V	
		$I_F = 100 A$			1.45	V	
		$I_F = 50 A$	$T_{VJ} = 150^{\circ}C$		1.15	V	
		$I_F = 100 A$			1.44	V	
$I_{DAV}$	bridge output current	$T_C = 135^{\circ}C$ 180° sine	$T_{VJ} = 175^{\circ}C$		124	A	
$V_{FO}$	threshold voltage	} for power loss calculation only	$T_{VJ} = 175^{\circ}C$		0.75	V	
$r_F$	slope resistance				4.2	m $\Omega$	
$R_{thJC}$	thermal resistance junction to case				1	K/W	
$R_{thCH}$	thermal resistance case to heatsink			0.40		K/W	
$P_{tot}$	total power dissipation		$T_C = 25^{\circ}C$		150	W	
$I_{FSM}$	max. forward surge current	t = 10 ms; (50 Hz), sine	$T_{VJ} = 45^{\circ}C$		400	A	
		t = 8,3 ms; (60 Hz), sine	$V_R = 0 V$		430	A	
		t = 10 ms; (50 Hz), sine	$T_{VJ} = 150^{\circ}C$		340	A	
		t = 8,3 ms; (60 Hz), sine	$V_R = 0 V$		365	A	
$I^2t$	value for fusing	t = 10 ms; (50 Hz), sine	$T_{VJ} = 45^{\circ}C$		800	A <sup>2</sup> s	
		t = 8,3 ms; (60 Hz), sine	$V_R = 0 V$		770	A <sup>2</sup> s	
		t = 10 ms; (50 Hz), sine	$T_{VJ} = 150^{\circ}C$		580	A <sup>2</sup> s	
		t = 8,3 ms; (60 Hz), sine	$V_R = 0 V$		555	A <sup>2</sup> s	
$C_J$	junction capacitance	$V_R = 400 V; f = 1 MHz$	$T_{VJ} = 25^{\circ}C$		13	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
<b>Weight</b>				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	3000			V
		t = 1 minute	2500			V



**Part description**

- D = Diode
- L = Low Voltage Standard Rectifier
- A = (up to 1200V)
- 100 = Current Rating [A]
- B = 1~ Rectifier Bridge
- 1200 = Reverse Voltage [V]
- LB = SMPD-B

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DLA100B1200LB-TUB	DLA100B1200LB	Tube	20	517180
Alternative	DLA100B1200LB-TRR	DLA100B1200LB	Tape & Reel	200	517187

**Equivalent Circuits for Simulation**

\* on die level

$T_{VJ} = 175\text{ °C}$



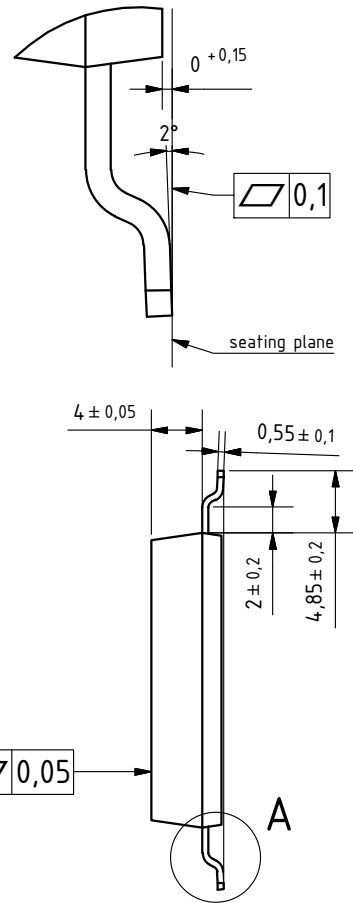
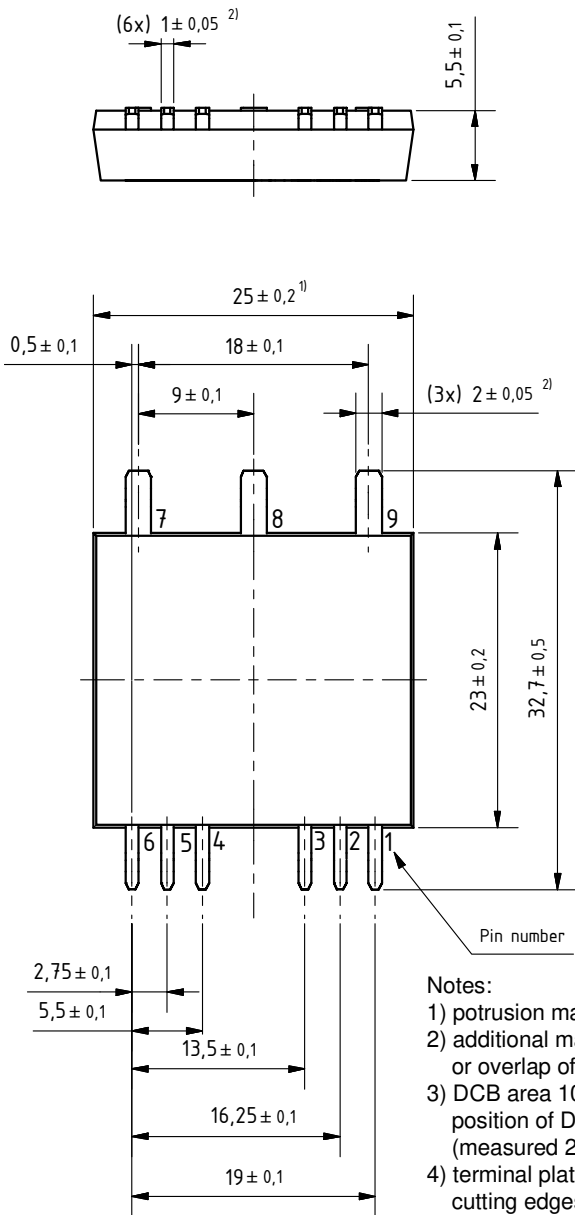
**Rectifier**

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



**Outlines SMPD**

**A ( 8 : 1 )**



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

