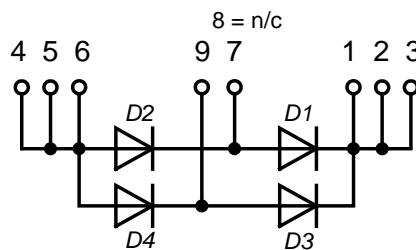
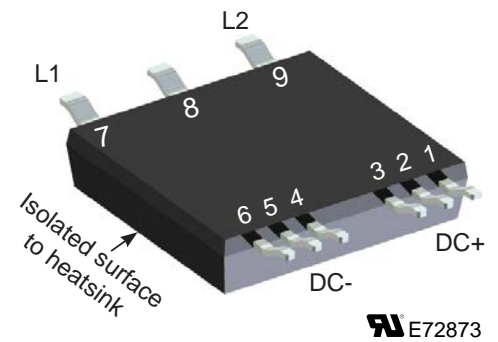


High Efficiency Standard Rectifier

Single Phase Rectifier Bridge

$V_{RRM} = 800 \text{ V}$
 $I_{DAV} = 124 \text{ A}$
 $V_F = 1.15 \text{ V}$

Part number
 DLA100B800LB



Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very low forward voltage drop
- Improved thermal behaviour
- AEC-Q 101 qualified 2018

Applications:

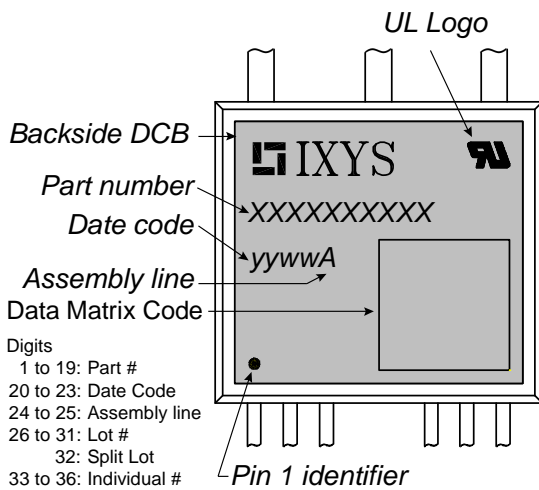
- Diode Bridge for main rectification

Package: SMPD

- DCB isolated backside
- Isolation Voltage 3000 V
- Epoxy meets UL 94V-0
- RoHS compliant

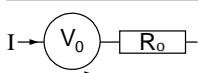
Diodes				Ratings		
Symbol	Definitions	Conditions	min.	typ.	max.	
$V_{RRM\ op}$	<i>operating reverse blocking voltage</i>				800	V
$V_{RRM\ peak}$	<i>peak repetitive reverse blocking voltage</i>				1200	V
I_R	<i>reverse current, drain current</i>	$V_R = 800\ V$			10	μA
					0.1	mA
V_F	<i>forward voltage drop</i>	$I_F = 50\ A$ $I_F = 100\ A$	$T_{VJ} = 25^\circ C$		1.23	V
					1.45	V
		$I_F = 50\ A$ $I_F = 100\ A$	$T_{VJ} = 150^\circ C$		1.15	V
					1.44	V
I_{DAV}	<i>average forward current</i>	<i>rectifier output current with: rectangular; d = 0.5 (per diode) sine 180° (per diode)</i>	$T_C = 135^\circ C$		132	A
					124	A
V_{F0}	<i>threshold voltage</i>	} for power loss calculation only	$T_{VJ} = 175^\circ C$		0.75	V
r_F	<i>slope resistance</i>				4.2	$m\Omega$
R_{thJC}	<i>thermal resistance junction to case</i>				1.0	K/W
R_{thJH}	<i>thermal resistance junction to heatsink</i>	with thermal transfer paste (IXYS test setup)		1.45	1.60	K/W
P_{tot}	<i>total power dissipation</i>		$T_C = 25^\circ C$		150	W
I_{FSM}	<i>max. forward surge current</i>				400	A
					430	A
					350	A
					375	A
					800	A^2s
					780	A^2s
I^2t	<i>value for fusing</i>				610	A^2s
					570	A^2s
C_J		$V_R = 800\ V; f = 1\ MHz$	$T_{VJ} = 25^\circ C$		13	pF

Package SMPD				Ratings		
Symbol	Definitions	Conditions	min.	typ.	max.	
I_{RMS}	RMS current	wide terminal standard terminal			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		g
F_C	mounting force with clip		40		130	N
$d_{Spp/App}$	creepage distance on surface /	terminal to terminal	1.6			mm
$d_{Spbl/Apb}$	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
- L = High Efficiency Standard Rectifier
- A = (up to 1200V)
- 100 = Current Rating [A]
- B = 1 - Rectifier Bridge
- 800 = Reverse Voltage [V]
- LB = SMPD-B

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Ordering Code
Standard	DLA100B800LB-TRR	DLA100B800LB-TRR	Tape&Reel	200	514621
	DLA100B800LB	DLA100B800LB	Tube	20	514614

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


Diode

 $V_{0\ max}$ threshold voltage

0.75 V

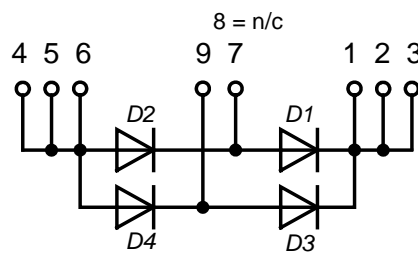
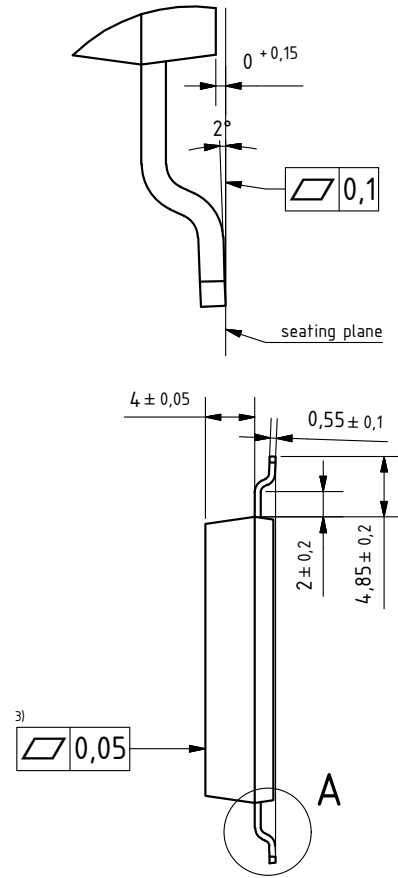
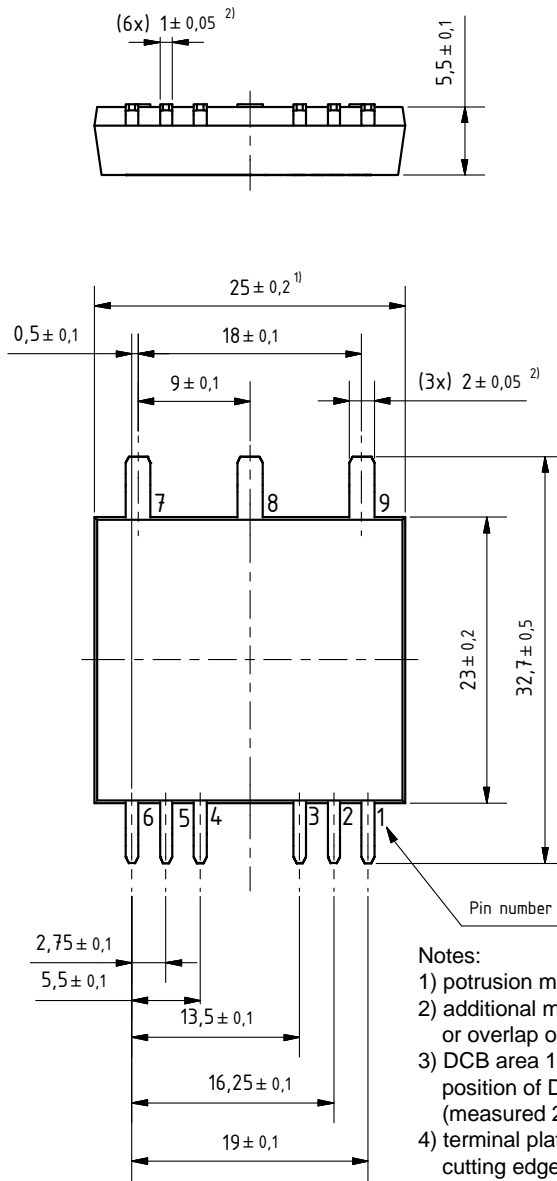
 $R_{0\ max}$ slope resistance *

4.2 mΩ

Outlines SMPD

A (8 : 1)

**Dimensions in mm
(1 mm = 0.0394")**



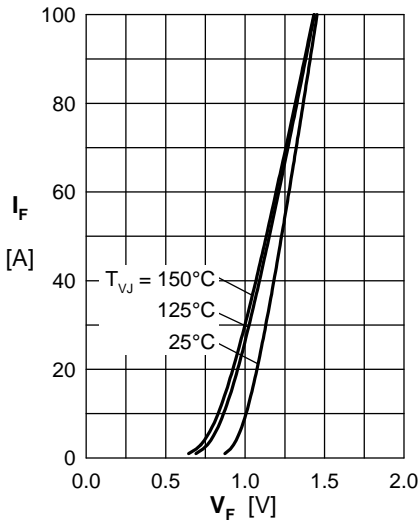


Fig. 1 Forward current versus voltage drop per diode

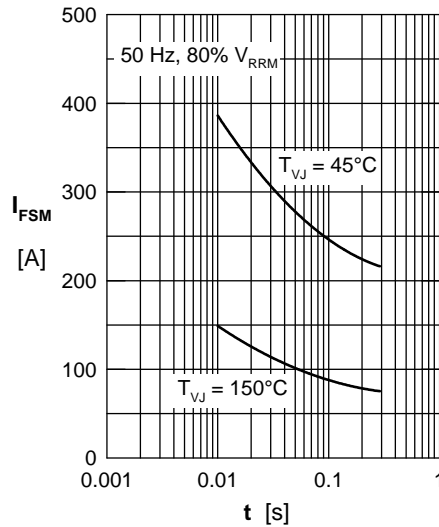


Fig. 2 Surge overload current

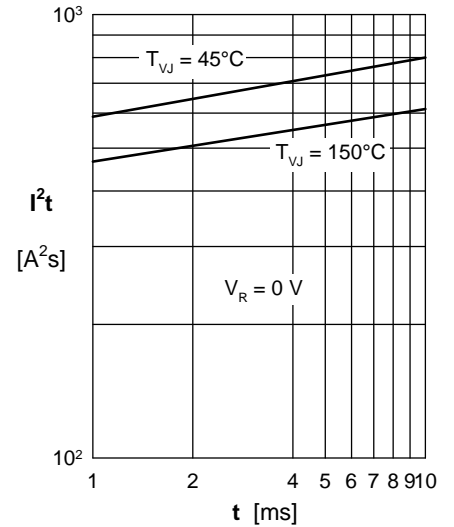


Fig. 3 I^2t versus time per diode

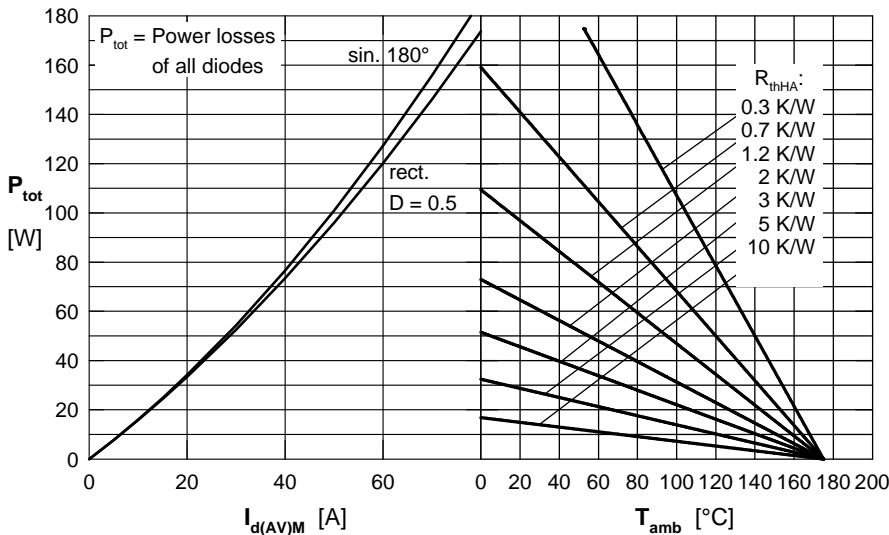


Fig. 4 Power dissipation vs. bridge output current and ambient temperature

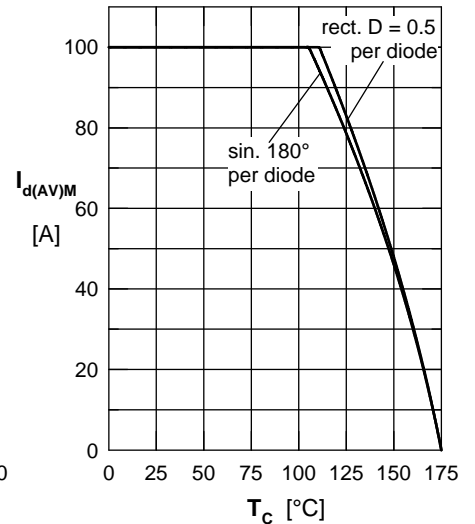


Fig. 5 Max. bridge output current vs. case temperature

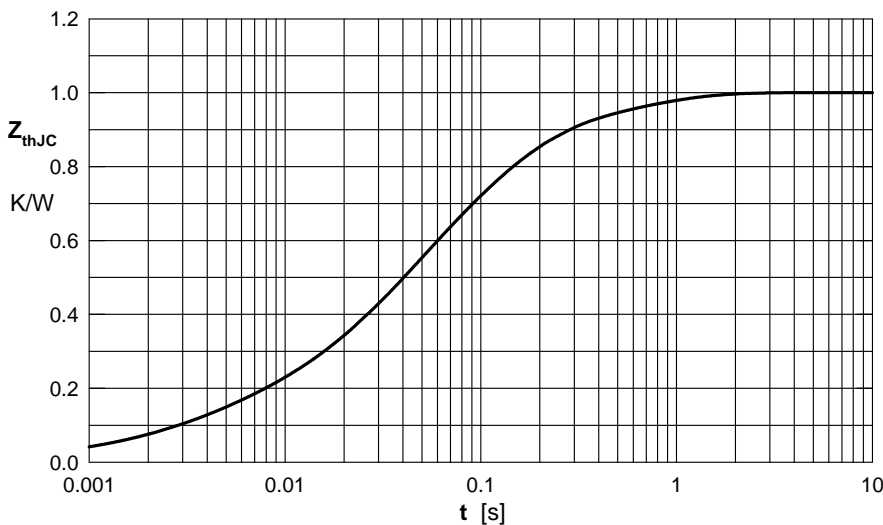


Fig. 6 Transient thermal impedance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} [K/W]	t_i [s]
1	0.09	0.003
2	0.116	0.062
3	0.386	0.1
4	0.128	0.55