

preliminary

Sonic Fast Recovery Diode

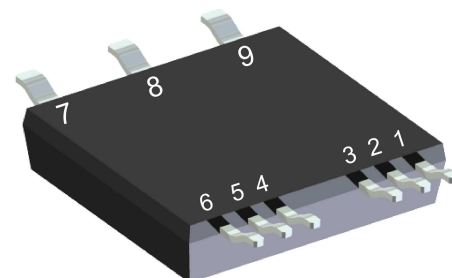
$V_{RRM} = 1200\text{ V}$
 $I_{DAV} = 34\text{ A}$
 $t_{rr} = 150\text{ ns}$

High Performance Fast Recovery Diode
 Low Loss and Soft Recovery
 1~ Rectifier Bridge

Part number

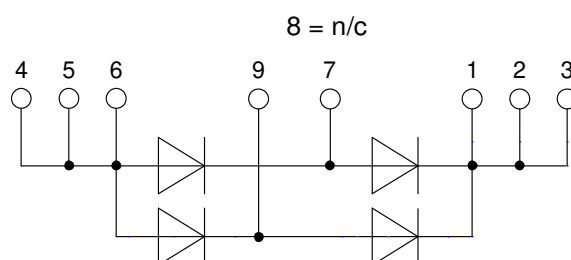
DHG40B1200LB

Marking on Product: DHG40B1200LB



Backside: isolated

 E72873



Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very short recovery time
- Improved thermal behaviour
- Very low I_{rm} -values
- Very soft recovery behaviour
- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low I_{rm} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commutating switch

Applications:

- Antiparallel diode for high frequency switching devices
- Antisaturation diode
- Snubber diode
- Free wheeling diode
- Rectifiers in switch mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)

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

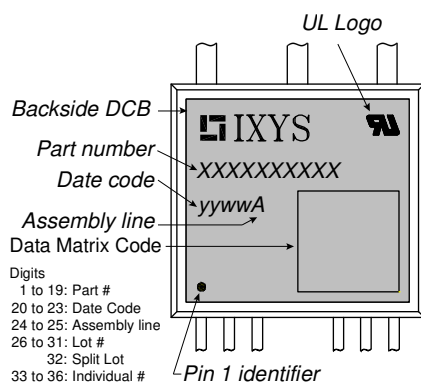
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Fast Diode				Ratings				
Symbol	Definition	Conditions		min.	typ.	max.	Unit	
V _{RSM}	max. non-repetitive reverse blocking voltage	T _{VJ} = 25°C				1200	V	
V _{RRM}	max. repetitive reverse blocking voltage	T _{VJ} = 25°C				1200	V	
I _R	reverse current, drain current	V _R = 1200 V	T _{VJ} = 25°C			40	μA	
		V _R = 1200 V	T _{VJ} = 125°C			0.4	mA	
V _F	forward voltage drop	I _F = 20 A	T _{VJ} = 25°C			2.24	V	
		I _F = 40 A				2.89	V	
		I _F = 20 A	T _{VJ} = 125°C			2.24	V	
		I _F = 40 A				3.15	V	
I _{DAV}	bridge output current	T _C = 80°C rectangular d = 0.5	T _{VJ} = 150°C			34	A	
V _{F0}	threshold voltage	} for power loss calculation only		T _{VJ} = 150°C		1.35	V	
r _F	slope resistance					43	mΩ	
R _{thJC}	thermal resistance junction to case					1.5	K/W	
R _{thCH}	thermal resistance case to heatsink				0.50		K/W	
P _{tot}	total power dissipation	T _C = 25°C				80	W	
I _{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine; V _R = 0 V		T _{VJ} = 45°C		150	A	
C _J	junction capacitance	V _R = 600 V f = 1 MHz		T _{VJ} = 25°C	8		pF	
I _{RM}	max. reverse recovery current	} I _F = 15 A; V _R = 600 V -di _F /dt = 600 A/μs		T _{VJ} = 25 °C	15		A	
				T _{VJ} = 125 °C	20		A	
t _{rr}	reverse recovery time			T _{VJ} = 25 °C	150		ns	
				T _{VJ} = 125 °C	250		ns	

preliminary

Package SMPD			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal			100	A
T_{VJ}	virtual junction temperature		-55		150	°C
T_{op}	operation temperature		-55		125	°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	3000			V
		t = 1 minute	2500			V



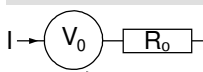
Part description

D = Diode
 H = Sonic Fast Recovery Diode
 G = extreme fast
 40 = 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	DHG40B1200LB-TUB	DHG40B1200LB	Tube	20	525198
Alternative	DHG40B1200LB-TRR	DHG40B1200LB	Tape & Reel	200	524922

Equivalent Circuits for Simulation

* on die level

 $T_{VJ} = 150\text{ °C}$

Fast Diode
 $V_{0\text{ max}}$ threshold voltage

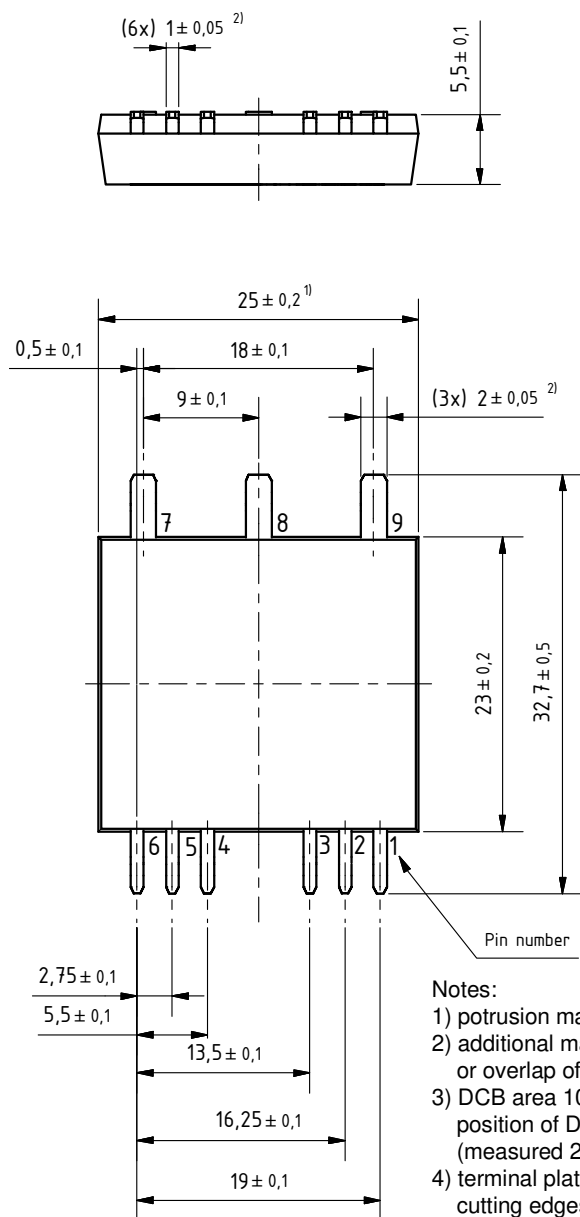
1.35

V

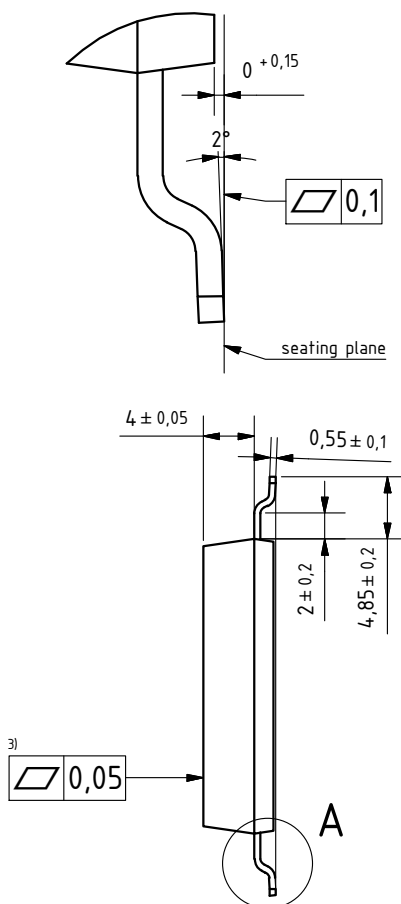
 $R_{0\text{ max}}$ slope resistance *

41

mΩ

Outlines SMPD
A (8 : 1)

Notes:

- 1) protrusion 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 μm convex; position of DCB area in relation to plastic rim: $\pm 25 \mu\text{m}$ (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



$$8 = n/c$$

