

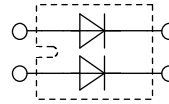
# Sonic Fast Recovery Diode

High Performance Fast Recovery Diode  
 Low Loss and Soft Recovery  
 Parallel legs

$V_{RRM} = 1200\text{ V}$   
 $I_{FAV} = 2 \times 25\text{ A}$   
 $t_{rr} = 75\text{ ns}$

Part number

**DHG 50 X 1200 NA**



Backside: Isolated

### 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:

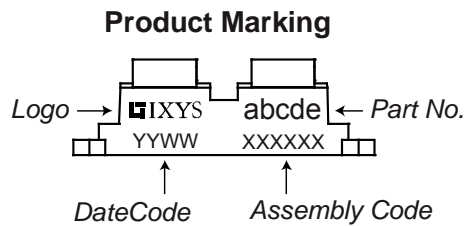
- Housing: SOT-227B (minibloc)
- Industry standard outline
- Cu base plate internal DCB isolated
- Isolation Voltage 3000 V
- UL registered E 72873
- Epoxy meets UL 94V-0
- RoHS compliant

### Ratings

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$V_{RRM}$	max. repetitive reverse voltage				1200	V
$I_R$	reverse current	$V_R = 1200\text{ V}$			50	$\mu\text{A}$
		$V_R = 1200\text{ V}$			2	mA
$V_F$	forward voltage	$I_F = 25\text{ A}$			2.12	V
		$I_F = 50\text{ A}$			2.70	V
		$I_F = 25\text{ A}$			2.00	V
		$I_F = 50\text{ A}$			2.73	V
$I_{FAV}$	average forward current	rectangular $d = 0.5$			25	A
$V_{F0}$	threshold voltage	} for power loss calculation only			1.17	V
$r_F$	slope resistance				28.8	$\text{m}\Omega$
$R_{thJC}$	thermal resistance junction to case				1.20	K/W
$T_{VJ}$	virtual junction temperature		-55		150	$^{\circ}\text{C}$
$P_{tot}$	total power dissipation				100	W
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}$ (50 Hz), sine			180	A
$I_{RM}$	max. reverse recovery current				25	A
		$I_F = 25\text{ A}; V_R = 800\text{ V}$			tbd	A
$t_{rr}$	reverse recovery time	$-di_F/dt = 1000\text{ A}/\mu\text{s}$			75	ns
					tbd	ns
$C_J$	junction capacitance	$V_R = 600\text{ V}; f = 1\text{ MHz}$			11	pF

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$I_{RMS}$	RMS current	per pin <sup>1)</sup>			100	A
$R_{thCH}$	thermal resistance case to heatsink			0.10		K/W
$T_{stg}$	storage temperature		-55		150	°C
<b>Weight</b>				30		g
$M_D$	mounting torque		1.1		1.5	Nm
$M_T$	terminal torque		1.1		1.5	Nm
$V_{ISOL}$	isolation voltage	t = 1 second	3000			V
		t = 1 minute	2500			V
$d_s$	creepage distance on surface		8			mm
$d_A$	striking distance through air		4			mm

<sup>1)</sup>  $I_{RMS}$  is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.  
 In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

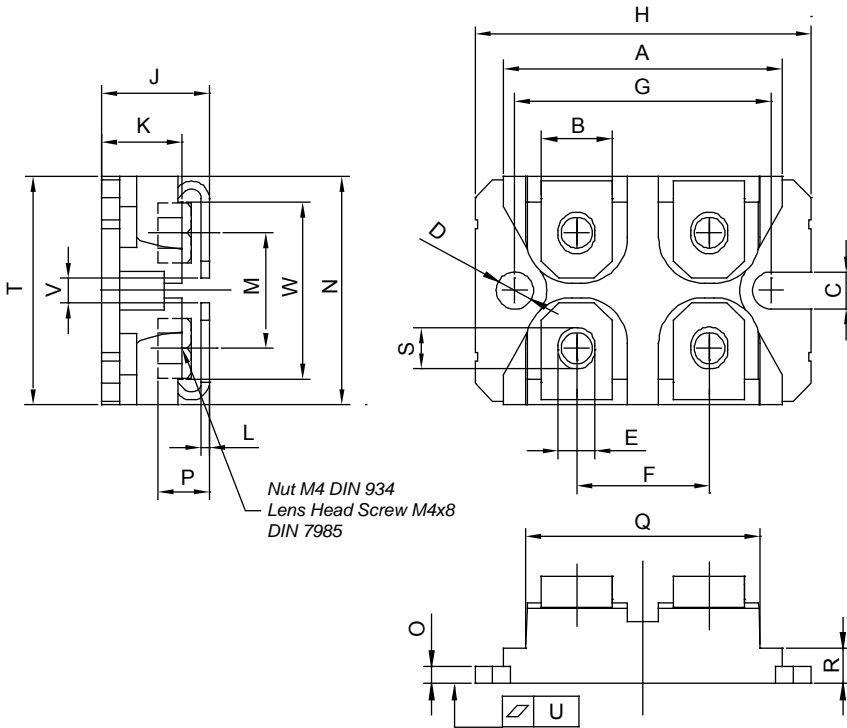


### Part number

- D = Diode
- H = Sonic Fast Recovery Diode
- G = extreme fast
- 50 = Current Rating [A]
- X = Parallel legs
- 1200 = Reverse Voltage [V]
- NA = SOT-227B (minibloc)

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DHG 50 X 1200 NA	DHG50X1200NA	Tube	10	507766

## Outlines SOT-227B (minibloc)



SYM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	31.50	31.88	1.240	1.255
B	7.80	8.20	.307	.323
C	4.09	4.29	.161	.169
D	4.09	4.29	.161	.169
E	4.09	4.29	.161	.169
F	14.91	15.11	.587	.595
G	30.12	30.30	1.186	1.193
H	37.80	38.23	1.489	1.505
J	11.68	12.22	.460	.481
K	8.92	9.60	.351	.378
L	0.76	0.84	.030	.033
M	12.60	12.85	.496	.506
N	25.15	25.42	.990	1.001
O	1.98	2.13	.078	.084
P	4.95	5.97	.195	.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	.155	.174
S	4.72	4.85	.186	.191
T	24.59	25.07	.968	.987
U	-.05	.10	-.002	.004
V	3.30	4.57	.130	.180
W	19.81	21.08	.780	.830