

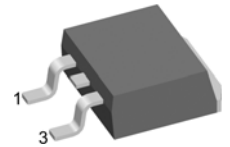
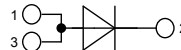
# Sonic Fast Recovery Diode

High Performance Fast Recovery Diode  
 Low Loss and Soft Recovery  
 Single Diode

$V_{RRM} = 600\text{ V}$   
 $I_{FAV} = 30\text{ A}$   
 $t_{rr} = 35\text{ ns}$

Part number

**DHG 30 IM 600 PC**



Backside: cathode

## 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: TO-263 (D2Pak)
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

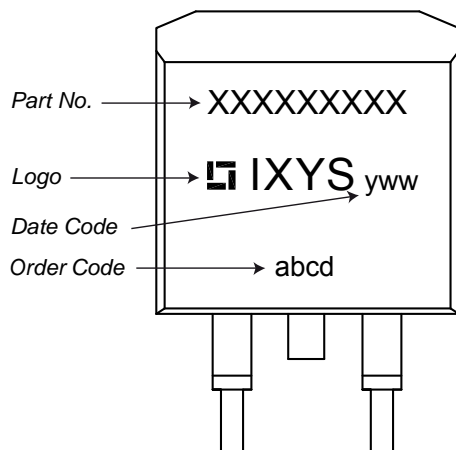
## Ratings

Symbol	Definition	Conditions	Ratings			Unit	
			min.	typ.	max.		
$V_{RRM}$	max. repetitive reverse voltage				600	V	
$I_R$	reverse current	$V_R = 600\text{ V}$			50	$\mu\text{A}$	
		$V_R = 600\text{ V}$			5	mA	
$V_F$	forward voltage	$I_F = 30\text{ A}$			2.37	V	
		$I_F = 60\text{ A}$			3.18	V	
		$I_F = 30\text{ A}$	$T_{VJ} = 150^\circ\text{C}$			2.22	V
		$I_F = 60\text{ A}$	$T_{VJ} = 150^\circ\text{C}$			3.11	V
$I_{FAV}$	average forward current	rectangular $d = 0.5$	$T_C = 95^\circ\text{C}$		30	A	
$V_{F0}$	threshold voltage	} for power loss calculation only	$T_{VJ} = 150^\circ\text{C}$		1.31	V	
$r_F$	slope resistance				29.2	$\text{m}\Omega$	
$R_{thJC}$	thermal resistance junction to case				0.60	K/W	
$T_{VJ}$	virtual junction temperature		-55		150	$^\circ\text{C}$	
$P_{tot}$	total power dissipation		$T_C = 25^\circ\text{C}$		210	W	
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}$ (50 Hz), sine	$T_{VJ} = 45^\circ\text{C}$		200	A	
$I_{RM}$	max. reverse recovery current		$T_{VJ} = 25^\circ\text{C}$		12	A	
		$I_F = 35\text{ A}; V_R = 400\text{ V}$	$T_{VJ} = \text{ }^\circ\text{C}$		tbd	A	
$t_{rr}$	reverse recovery time	$-di_F/dt = 600\text{ A}/\mu\text{s}$	$T_{VJ} = 25^\circ\text{C}$		35	ns	
			$T_{VJ} = \text{ }^\circ\text{C}$		tbd	ns	
$C_J$	junction capacitance	$V_R = 400\text{ V}; f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		16	pF	

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$I_{RMS}$	RMS current	per pin <sup>1)</sup>			35	A
$R_{thCH}$	thermal resistance case to heatsink			0.25		K/W
$T_{stg}$	storage temperature		-55		150	°C
<b>Weight</b>				2		g
$F_c$	mounting force with clip		20		60	N

<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.

## Product Marking



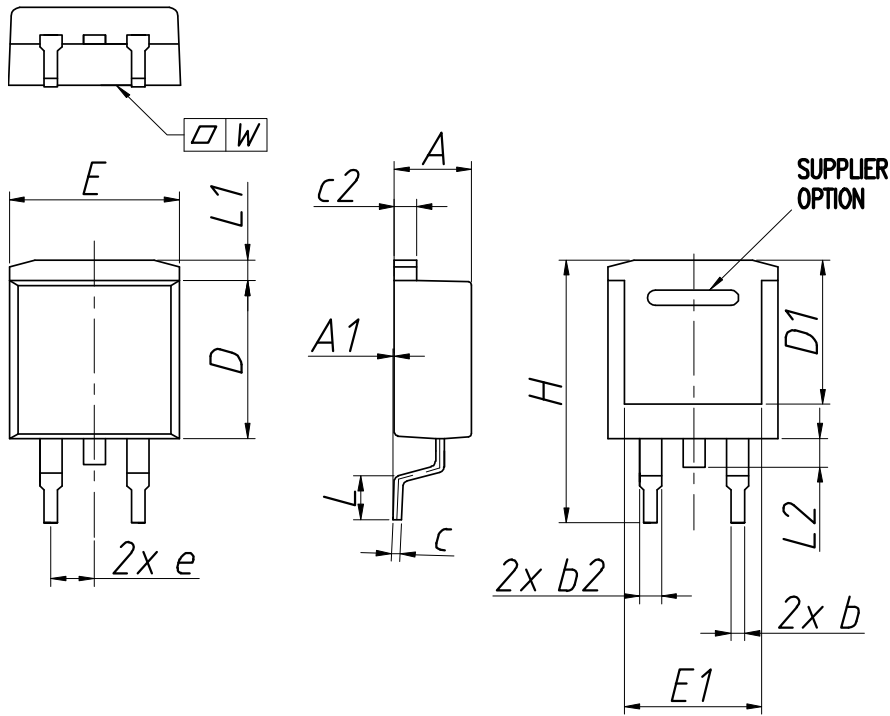
## Part number

- D = Diode
- H = Sonic Fast Recovery Diode
- G = extreme fast
- 30 = Current Rating [A]
- IM = Single Diode
- 600 = Reverse Voltage [V]
- PC = TO-263AB (D2Pak) (2)

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DHG 30 IM 600 PC	DHG30IM600PC	Tape & Reel	800	503501

Similar Part	Package	Voltage Class
DHG30I600PA	TO-220	600
DHG30I600HA	TO-247	600

Outlines TO-263 (D2Pak)



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.06	4.83	0.160	0.190
A1	typ. 0.10		typ. 0.004	
b	0.51	0.99	0.020	0.039
b2	1.14	1.40	0.045	0.055
c	0.40	0.74	0.016	0.029
c2	1.14	1.40	0.045	0.029
D	8.38	9.40	0.330	0.370
D1	8.00	8.89	0.315	0.350
E	9.65	10.41	0.380	0.410
E1	6.22	8.13	0.245	0.320
e	2,54 BSC		0,100 BSC	
H	14.61	15.88	0.575	0.625
L	1.78	2.79	0.070	0.110
L1	1.02	1.68	0.040	0.066
L2	1.02	1.52	0.040	0.060
W	typ. 0.02	0.040	typ. 0.0008	0.0016

All dimensions conform with and/or are within JEDEC standard.