

Sonic Fast Recovery Diode

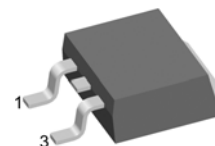
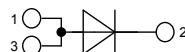
High Performance Fast Recovery Diode

Low Loss and Soft Recovery

Single Diode

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

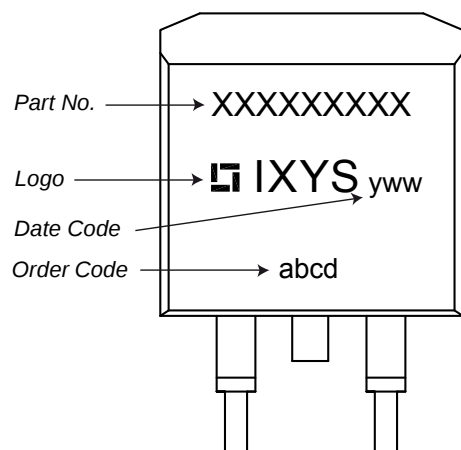
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RRM}	max. repetitive reverse voltage		$T_{VJ} = 25^{\circ}\text{C}$			600	V
I_R	reverse current	$V_R = 600\text{V}$	$T_{VJ} = 25^{\circ}\text{C}$			50	μA
		$V_R = 600\text{V}$	$T_{VJ} = 125^{\circ}\text{C}$			5	mA
V_F	forward voltage	$I_F = 30\text{A}$	$T_{VJ} = 25^{\circ}\text{C}$			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
		$I_F = 60\text{A}$				3.11	V
I_{FAV}	average forward current	rectangular $d = 0.5$	$T_C = 95^{\circ}\text{C}$			30	A
V_{FO}	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
		$I_F = 35\text{A}; V_R = 400\text{V}$	$T_{VJ} = ^{\circ}\text{C}$		tbd		A
		$-di_F/dt = 600\text{ A}/\mu\text{s}$	$T_{VJ} = 25^{\circ}\text{C}$		35		ns
			$T_{VJ} = ^{\circ}\text{C}$		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			
			min.	typ.	max.	Unit
I_{RMS}	RMS current	per pin ¹⁾			35	A
R_{thCH}	thermal resistance case to heatsink			0.25		K/W
T_{stg}	storage temperature		-55		150	°C
Weight				2		g
F_c	mounting force with clip		20		60	N

¹⁾ 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



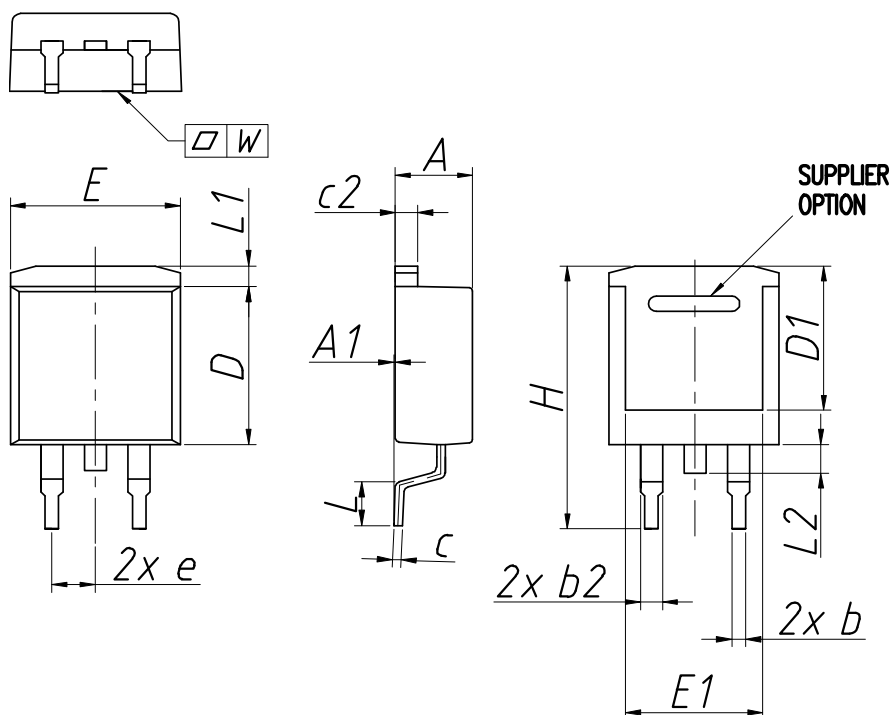
Part number

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.