Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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preliminary

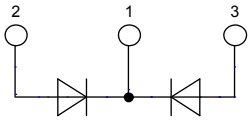
Sonic Fast Recovery Diode

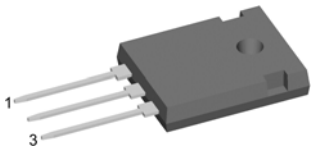
V_{RRM} = 1200 V
I_{FAV} = 2x 20 A
t_{rr} = 200 ns

High Performance Fast Recovery Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DHG 40 C 1200 HB





Backside: cathode

Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very short recovery time
- Improved thermal behaviour
- Very low Irm-values
- Very soft recovery behaviour
- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low Irm 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-247
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

Ratings

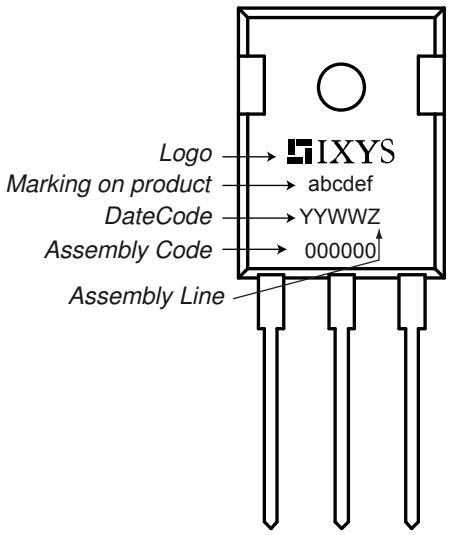
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RRM}	*max. repetitive reverse voltage*		T_{VJ} = 25°C			1200	V
I_R	*reverse current*	V_R = 1200 V	T_{VJ} = 25°C			25	µA
		V_R = 1200 V	T_{VJ} = 125°C			0.4	mA
V_F	*forward voltage*	I_F = 20 A	T_{VJ} = 25°C			2.24	V
		I_F = 40 A				2.89	V
		I_F = 20 A	T_{VJ} = 125°C			2.24	V
		I_F = 40 A				3.15	V
I_{FAV}	*average forward current*	rectangular d = 0.5	T_C = 95°C			20	A
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 150°C			1.29	V
r_F	*slope resistance* }					43	mΩ
R_{thJC}	*thermal resistance junction to case*					0.90	K/W
T_{VJ}	*virtual junction temperature*			-55		150	°C
P_{tot}	*total power dissipation*		T_C = 25°C			140	W
I_{FSM}	*max. forward surge current*	t = 10 ms (50 Hz), sine	T_{VJ} = 45°C			150	A
I_{RM}	*max. reverse recovery current*		T_{VJ} = 25°C		15		A
		I_F = 20 A; V_R = 600 V	T_{VJ} = 125°C		20		A
t_{rr}	*reverse recovery time*	$-di_F/dt$ = 400 A/µs	T_{VJ} = 25°C		200		ns
			T_{VJ} = 125°C		350		ns
C_J	*junction capacitance*	V_R = 600 V; f = 1 MHz	T_{VJ} = 25°C		8		pF

preliminary

Symbol	Definition	Conditions	Ratings min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per terminal [1]			70	A
R_{thCH}	*thermal resistance case to heatsink*			0.25		K/W
T_{stg}	*storage temperature*		-55		150	°C
Weight				6		g
M_D	*mounting torque*		0.8		1.2	Nm
F_C	*mounting force with clip*		20		120	N

[1] I_{RMS} is typically limited by the pin-to-chip resistance (1); or by the current capability of the chip (2). In case of (1) and a common cathode/anode configu ration with a non-isolated backside, the current capability can be increased by connecting the backside.

Product Marking

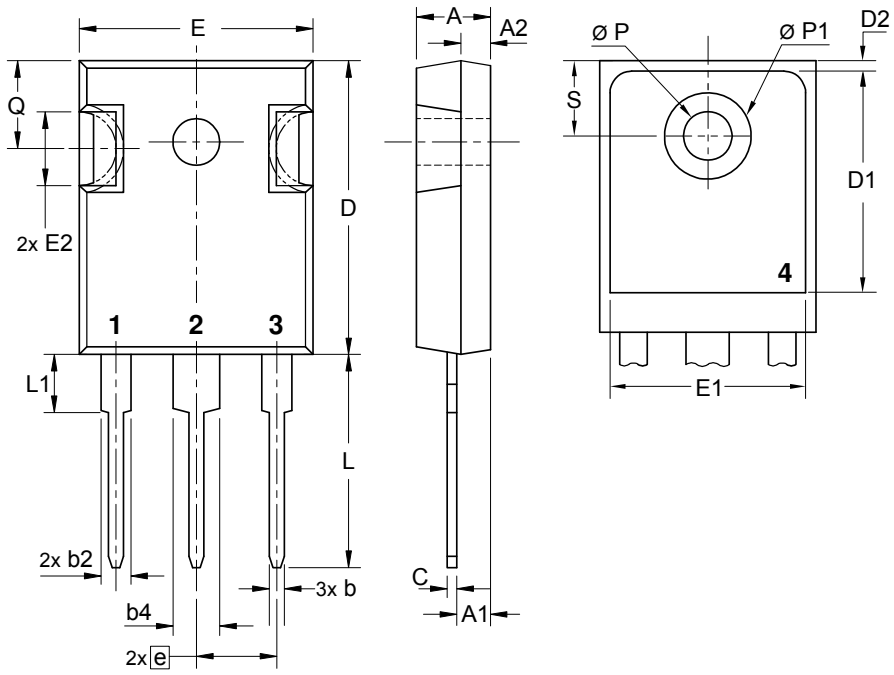


Part number

D = Diode
H = Sonic Fast Recovery Diode
G = extreme fast
40 = Current Rating [A]
C = Common Cathode
1200 = Reverse Voltage [V]
HB = TO-247AD (3)

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DHG 40 C 1200 HB	DHG40C1200HB	Tube	30	505138

Outlines TO-247



Sym.	Inches		Millimeter	
	min.	max.	min.	max.
A	0.185	0.209	4.70	5.30
A1	0.087	0.102	2.21	2.59
A2	0.059	0.098	1.50	2.49
D	0.819	0.845	20.79	21.45
E	0.610	0.640	15.48	16.24
E2	0.170	0.216	4.31	5.48
e	0.215 BSC		5.46 BSC	
L	0.780	0.800	19.80	20.30
L1	-	0.177	-	4.49
Ø P	0.140	0.144	3.55	3.65
Q	0.212	0.244	5.38	6.19
S	0.242 BSC		6.14 BSC	
b	0.039	0.055	0.99	1.40
b2	0.065	0.094	1.65	2.39
b4	0.102	0.135	2.59	3.43
c	0.015	0.035	0.38	0.89
D1	0.515	-	13.07	-
D2	0.020	0.053	0.51	1.35
E1	0.530	-	13.45	-
Ø P1	-	0.29	-	7.39

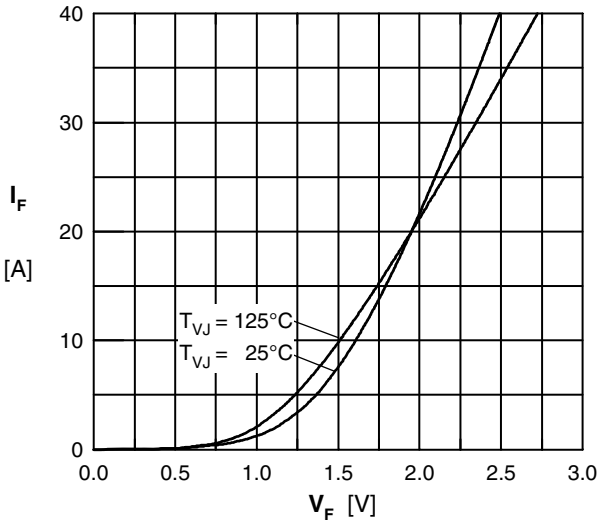


Fig. 1 Typ. Forward current versus V_F

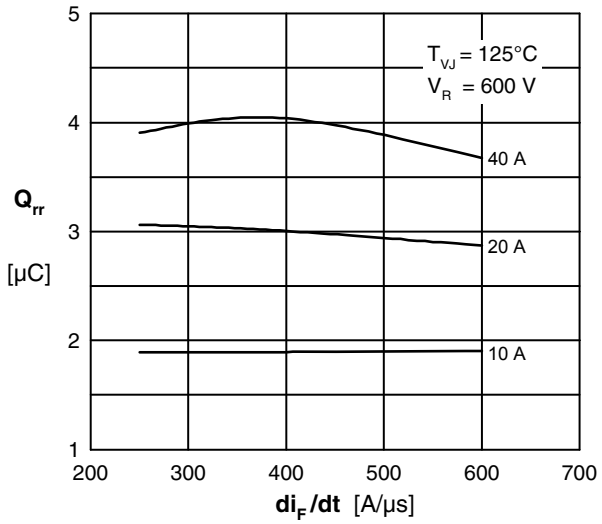


Fig. 2 Typ. reverse recov.charge Q_{rr} vs. di/dt

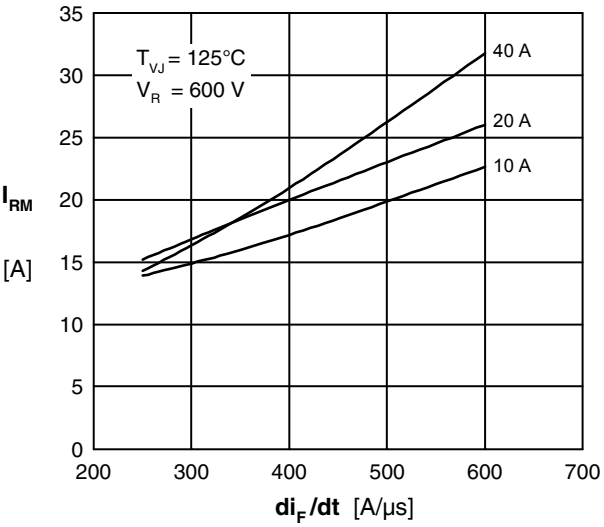


Fig. 3 Typ. peak reverse current I_{RM} vs. di/dt

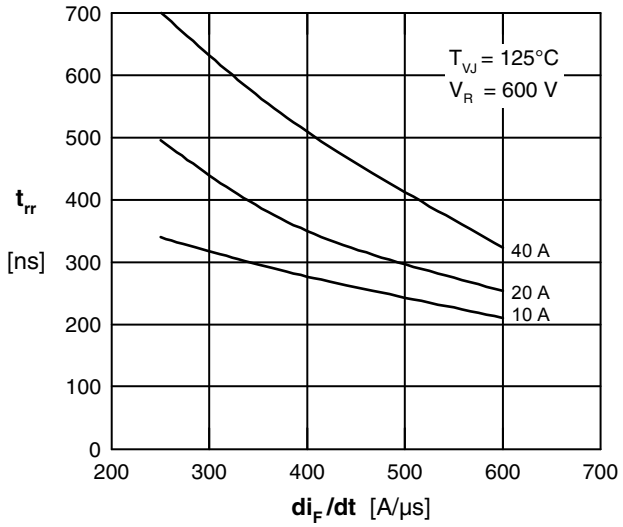


Fig. 4 Typ. recovery time t_{rr} versus di/dt

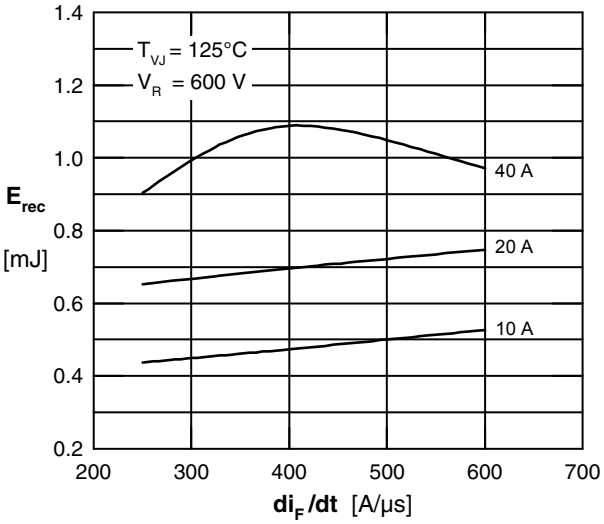


Fig. 5 Typ. recovery energy E_{rec} versus di/dt

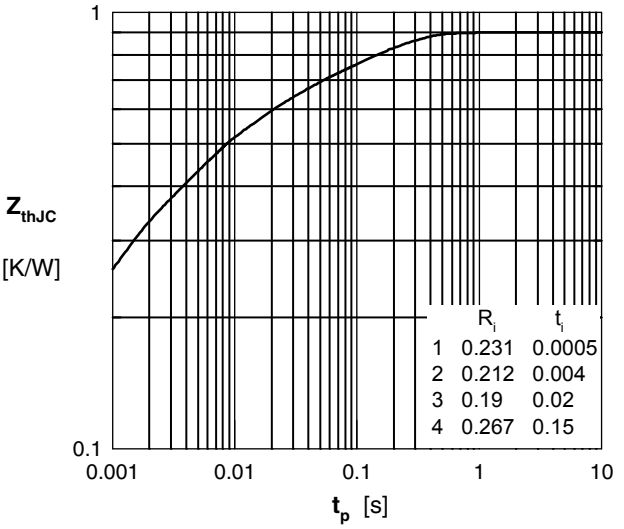


Fig. 6 Typ. transient thermal impedance