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DHG 30 I 600 PA

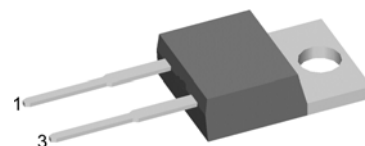
preliminary

Sonic Fast Recovery Diode

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

Part number

DHG 30 I 600 PA



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-220
- 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	T _{VJ} = 25 °C			600	V
I _R	reverse current	V _R = 600 V			50	μA
		V _R = 600 V			2	mA
V _F	forward voltage	I _F = 30 A	T _{VJ} = 25 °C		2.27	V
					3.14	V
		I _F = 60 A	T _{VJ} = 125 °C		2.24	V
					3.23	V
I _{FAV}	average forward current	rectangular d = 0.5	T _C = 85 °C		30	A
V _{F0}	threshold voltage	} for power loss calculation only	T _{VJ} = 150 °C		1.17	V
r _F	slope resistance				32	mΩ
R _{thJC}	thermal resistance junction to case				0.70	K/W
T _{VJ}	virtual junction temperature		-55		150	°C
P _{tot}	total power dissipation		T _C = 25 °C		180	W
I _{FSM}	max. forward surge current	t = 10 ms (50 Hz), sine	T _{VJ} = 45 °C		200	A
I _{RM}	max. reverse recovery current	I _F = 30 A; V _R = 300 V	T _{VJ} = 25 °C		13	A
			T _{VJ} = 125 °C		17	A
t _{rr}	reverse recovery time	-di _F /dt = 600 A/μs	T _{VJ} = 25 °C		40	ns
			T _{VJ} = 125 °C		60	ns
C _J	junction capacitance	V _R = 400 V; f = 1 MHz	T _{VJ} = 25 °C		16	pF

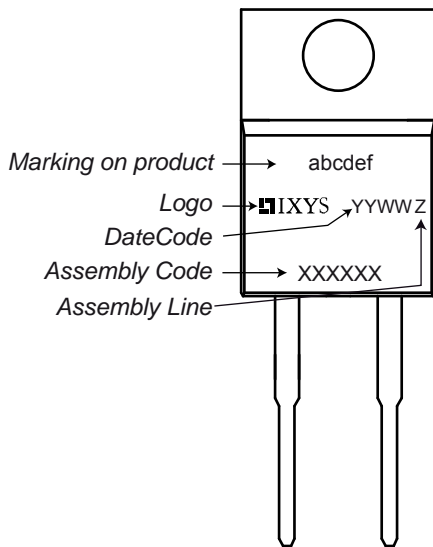


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Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
I_{RMS}	RMS current	per terminal			35	A
R_{thCH}	thermal resistance case to heatsink			0.50		K/W
T_{stg}	storage temperature		-55		150	°C
Weight				2		g
M_D	mounting torque		0.4		0.6	Nm
F_C	mounting force with clip		20		60	N

Product Marking



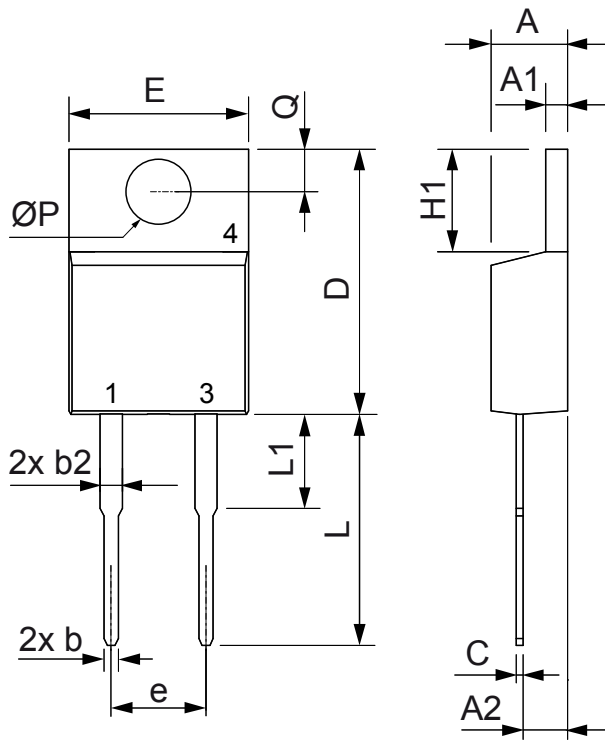
Part number

- D = Diode
- H = Sonic Fast Recovery Diode
- G = extreme fast
- 30 = Current Rating [A]
- I = Single Diode
- 600 = Reverse Voltage [V]
- PA = TO-220AC (2)

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DHG 30 I 600 PA	DHG30I600PA	Tube	50	504019

Similar Part	Package	Voltage Class
DHG30I600HA	TO-247AD (2)	600
DHG30IM600PC	TO-263AB (D2Pak)	600

Outlines TO-220



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.32	4.82	0.170	0.190
A1	1.14	1.39	0.045	0.055
A2	2.29	2.79	0.090	0.110
b	0.64	1.01	0.025	0.040
b2	1.15	1.65	0.045	0.065
C	0.35	0.56	0.014	0.022
D	14.73	16.00	0.580	0.630
E	9.91	10.66	0.390	0.420
e	5.08	BSC	0.200	BSC
H1	5.85	6.85	0.230	0.270
L	12.70	13.97	0.500	0.550
L1	2.79	5.84	0.110	0.230
ØP	3.54	4.08	0.139	0.161
Q	2.54	3.18	0.100	0.125

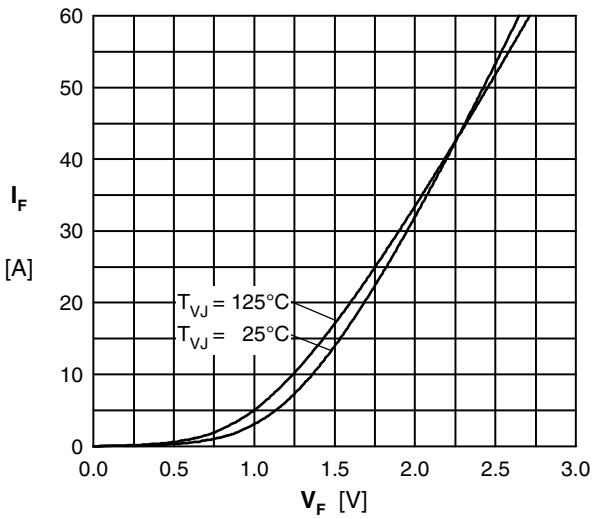


Fig. 1 Typ. Forward current versus V_F

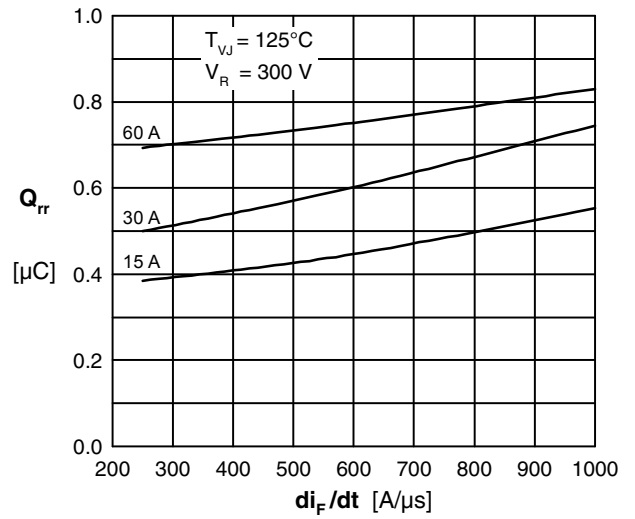


Fig. 2 Typ. reverse recov.charge Q_{rr} vs. di/dt

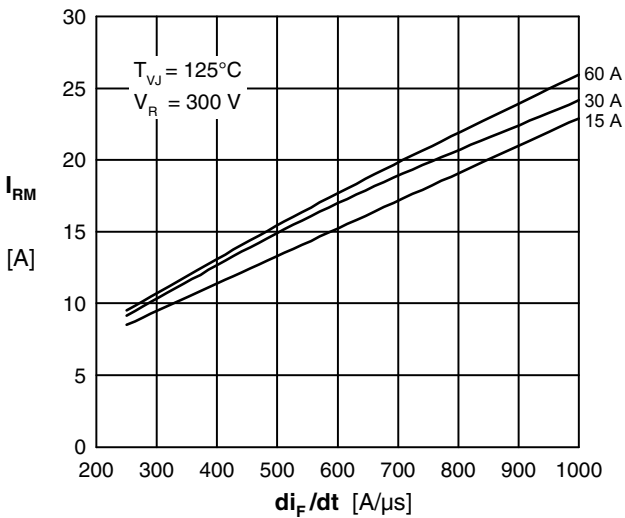


Fig. 3 Typ. peak reverse current I_{RM} vs. di/dt

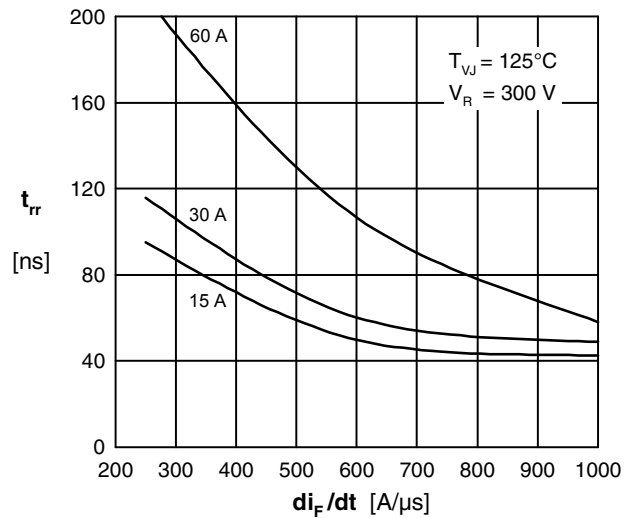


Fig. 4 Typ. recovery time t_{rr} versus di/dt

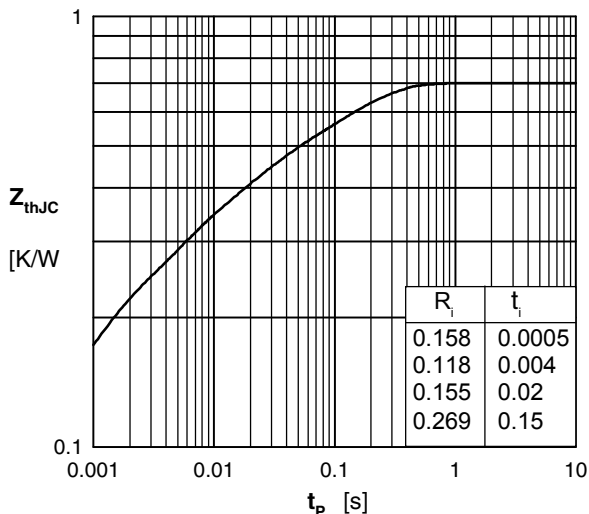


Fig. 5 Transient thermal impedance