IXYS

DHF 30 IM 600QB

advanced

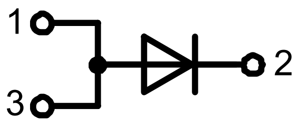
Sonic-FRD

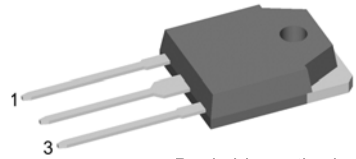
High Performance Fast Recovery Diode
Low Loss and Soft Recovery
Single Diode

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

Part number

DHF 30 IM 600QB





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:

TO-3P

- Industry standard outline
  - compatible with TO-247
- Epoxy meets UL 94V-0
- RoHS compliant

Symbol	Definition	Conditions		Ratings min.	typ.	max.	Unit
V_{RRM}	*max. repetitive reverse voltage*		T_{VJ} = 25 °C			600	V
I_R	*reverse current*	V_R = 600 V	T_{VJ} = 25 °C			50	µA
		V_R = 600 V	T_{VJ} = 125 °C			5	mA
V_F	*forward voltage*	I_F = 30 A	T_{VJ} = 25 °C			2.36	V
		I_F = 60 A			0.00	3.15	V
		I_F = 30 A	T_{VJ} = 125 °C			2.20	V
		I_F = 60 A			0.00	3.08	V
I_{FAV}	*average forward current*	rectangular, d = 0.5	T_C = 35 °C			30	A
V_{F0}	*threshold voltage*	*for power loss calculation only*	T_{VJ} = 150 °C			1.31	V
r_F	*slope resistance*					28.6	mΩ
R_{thJC}	*thermal resistance junction to case*					3.50	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_p = 10 ms (50 Hz), sine	T_{VJ} = 45 °C			200	A
I_{RM}	*max. reverse recovery current*	I_F = 30 A;	T_{VJ} = 25 °C		12		A
		$-di_F/dt$ = 600 A/µs	T_{VJ} = 125 °C				A
t_{rr}	*reverse recovery time*	V_R = 400 V	T_{VJ} = 25 °C		35		ns
			T_{VJ} = 125 °C				ns
C_J	*junction capacitance*	V_R = 300 V; f = 1 MHz	T_{VJ} = 25 °C		40		pF
E_{AS}	*non-repetitive avalanche energy*	I_{AS} = tbd A; L = 100 µH	T_{VJ} = 25 °C			tbd	mJ
I_{AR}	*repetitive avalanche current*	$V_A = 1.5 \cdot V_R$ typ.; f = 10 kHz				tbd	A

Recommended replacement:
DHG30I600HA, DHG30I600PA

IXYS reserves the right to change limits, conditions and dimensions.

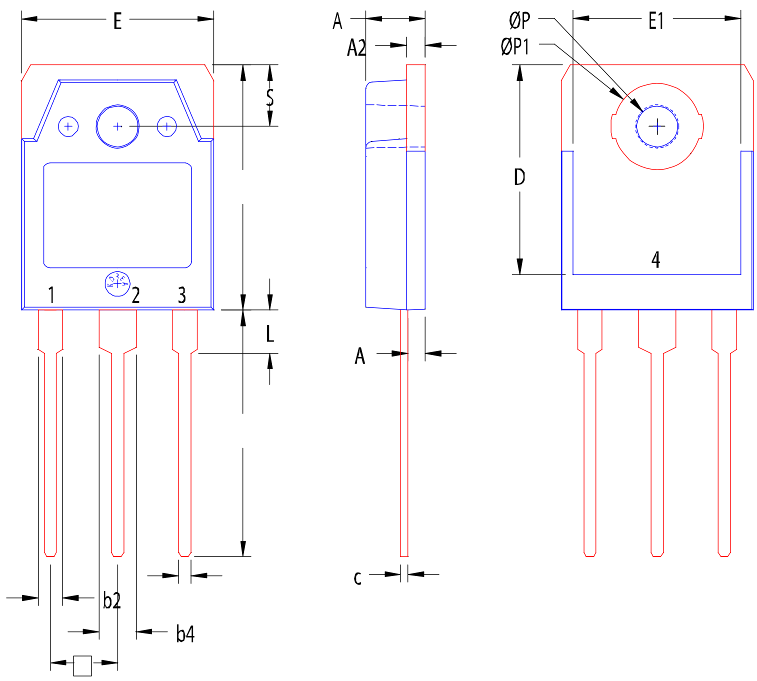
* Data according to IEC 60747and per diode unless otherwise specified

advanced

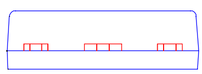
Symbol	Definition	Conditions	Ratings min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per pin*			70	A
R_{thCH}	*thermal resistance case to heatsink*			0.25		K/W
M_D	*mounting torque*		0.8		1.2	Nm
F_c	*mounting force with clip*		20		120	N
T_{stg}	*storage temperature*		-55		150	°C
Weight				5		g

* Irms 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.

Outlines TO-3P



SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.185	.193	4.70	4.90
A1	.051	.059	1.30	1.50
A2	.057	.065	1.45	1.65
b	.035	.045	0.90	1.15
b2	.075	.087	1.90	2.20
b4	.114	.126	2.90	3.20
c	.022	.031	0.55	0.80
D	.780	.791	19.80	20.10
D1	.665	.677	16.90	17.20
E	.610	.622	15.50	15.80
E1	.531	.539	13.50	13.70
e	.215 BSC		5.45 BSC	
L	.779	.795	19.80	20.20
L1	.134	.142	3.40	3.60
ØP	.126	.134	3.20	3.40
ØP1	.272	.280	6.90	7.10
S	.193	.201	4.90	5.10



1 - GATE
2 - DRAIN (COLLECTOR)
3 - SOURCE (EMITTER)
4 - DRAIN (COLLECTOR)

All metal area are tin plated.

IXYS reserves the right to change limits, conditions and dimensions.

* Data according to IEC 60747and per diode unless otherwise specified

0629