

DHG5I600PA

preliminary

 $V_{RRM} = 600 V$

 $I_{FAV} = 5A$

 $t_{rr} = 35 \, \text{ns}$

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

Sonic Fast Recovery Diode

Part number

DHG51600PA



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-220

- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

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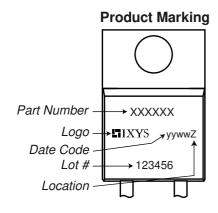
Fast Diode				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V _{RSM}	max. non-repetitive reverse blockir	ng voltage	$T_{VJ} = 25^{\circ}C$			600	V
V _{RRM}	max. repetitive reverse blocking vo	oltage	$T_{VJ} = 25^{\circ}C$			600	V
IR	reverse current, drain current	$V_R = 600 \text{ V}$	$T_{VJ} = 25^{\circ}C$			10	μΑ
		$V_R = 600 \text{ V}$	$T_{VJ} = 125^{\circ}C$			1	mΑ
V _F	forward voltage drop	I _F = 5 A	$T_{VJ} = 25^{\circ}C$			2.21	V
		$I_F = 10 A$				3.07	٧
		I _F = 5 A	T _{VJ} = 125°C			2.17	V
		$I_F = 10 A$				3.13	٧
I FAV	average forward current	T _C = 105°C	T _{vJ} = 150°C			5	Α
		rectangular d = 0.5					
V _{F0}	threshold voltage		T _{VJ} = 150°C			1.14	٧
\mathbf{r}_{F}	slope resistance	ss calculation only				185	mΩ
R _{thJC}	thermal resistance junction to case	;				3.15	K/W
R _{thCH}	thermal resistance case to heatsin	k			0.5		K/W
P _{tot}	total power dissipation		$T_C = 25^{\circ}C$			40	W
I _{FSM}	max. forward surge current	$t = 10 \text{ ms}$; (50 Hz), sine; $V_R = 0 \text{ V}$	$T_{VJ} = 45^{\circ}C$			40	Α
CJ	junction capacitance	$V_R = 400 \text{V}$ f = 1 MHz	$T_{VJ} = 25^{\circ}C$		3		pF
I _{RM}	max. reverse recovery current		T _{VJ} = 25 °C		2		Α
		$I_F = 5 \text{ A}; V_R = 400 \text{ V}$	$T_{VJ} = {}^{\circ}C$		tbd		Α
t _{rr}	reverse recovery time	$\begin{cases} I_F = 5 A; V_R = 400 V \\ -di_F / dt = 100 A / \mu s \end{cases}$	$T_{VJ} = 25 ^{\circ}C$		35		ns
	J	1	$T_{VJ} = {}^{\circ}C$		tbd		ns



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Package	TO-220			Ratings	S	
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I _{RMS}	RMS current	per terminal			35	Α
T _{VJ}	virtual junction temperature		-55		150	°C
T _{op}	operation temperature		-55		125	°C
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



Part description

D = Diode

H = Sonic Fast Recovery Diode

G = extreme fast

5 = Current Rating [A]

I = Single Diode

600 = Reverse Voltage [V]

PA = TO-220AC (2)

Or	rdering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Sta	andard	DHG5I600PA	DHG5I600PA	Tube	50	504373

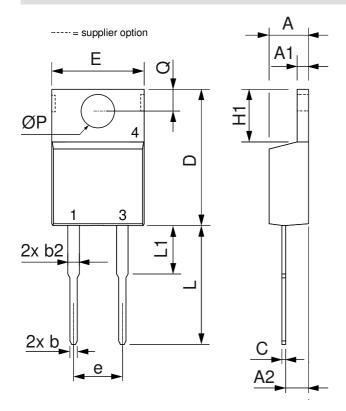
Similar Part	Package	Voltage class
DHG5I600PM	TO-220ACFP (2)	600

Equivalent Circuits for Simulation			* on die level	$T_{VJ} = 150$ °C
$I \rightarrow V_0$)— <u>R</u> o	Fast Diode		
V _{0 max}	threshold voltage	1.14		V
$R_{0 max}$	slope resistance *	182		$m\Omega$



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Outlines TO-220



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
Α	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
С	0.35	0.56	0.014	0.022
D	14.73	16.00	0.580	0.630
Е	9.91	10.66	0.390	0.420
е	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

