

preliminary

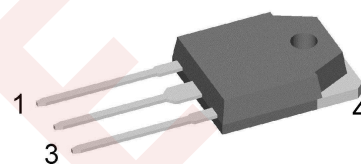
Sonic Fast Recovery Diode

V_{RRM}	=	600 V
I_{FAV}	= 2x	10 A
t_{rr}	=	35 ns

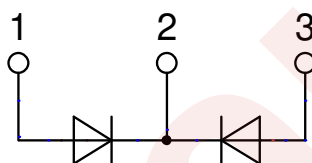
High Performance Fast Recovery Diode
 Low Loss and Soft Recovery
 Common Cathode

Part number

DHG20C600QB



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: TO-3P

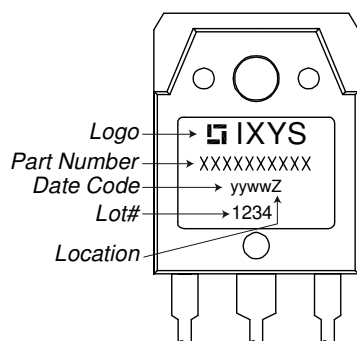
- Industry standard outline compatible with TO-247
- RoHS compliant
- Epoxy meets UL 94V-0

Disclaimer Notice

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.

Fast Diode				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V _{RSM}	max. non-repetitive reverse blocking voltage	T _{VJ} = 25°C				600	V
V _{RRM}	max. repetitive reverse blocking voltage	T _{VJ} = 25°C				600	V
I _R	reverse current, drain current	V _R = 600 V	T _{VJ} = 25°C			15	μA
		V _R = 600 V	T _{VJ} = 125°C			1.2	mA
V _F	forward voltage drop	I _F = 10 A	T _{VJ} = 25°C			2.22	V
		I _F = 20 A				3.12	V
		I _F = 10 A	T _{VJ} = 125°C			2.17	V
		I _F = 20 A				3.27	V
I _{FAV}	average forward current	T _C = 95°C rectangular d = 0.5	T _{VJ} = 150°C			10	A
V _{F0}	threshold voltage	} for power loss calculation only		T _{VJ} = 150°C		1.04	V
r _F	slope resistance					104	mΩ
R _{thJC}	thermal resistance junction to case					1.8	K/W
R _{thCH}	thermal resistance case to heatsink				0.3		K/W
P _{tot}	total power dissipation	T _C = 25°C				70	W
I _{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine; V _R = 0 V		T _{VJ} = 45°C		80	A
C _J	junction capacitance	V _R = 400 V f = 1 MHz		T _{VJ} = 25°C	6		pF
I _{RM}	max. reverse recovery current	} I _F = 10 A; V _R = 400 V -di _F /dt = 200 A/μs		T _{VJ} = 25 °C	4		A
t _{rr}	reverse recovery time			T _{VJ} = °C	tbd		A
				T _{VJ} = 25 °C	35		ns
				T _{VJ} = °C	tbd		ns

Package TO-3P			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal ¹⁾			50	A
T_{VJ}	virtual junction temperature		-55		150	°C
T_{op}	operation temperature		-55		125	°C
T_{stg}	storage temperature		-55		150	°C
Weight				5		g
M_D	mounting torque		0.8		1.2	Nm
F_C	mounting force with clip		20		120	N

Product Marking

Part description

D = Diode
 H = Sonic Fast Recovery Diode
 G = extreme fast
 20 = Current Rating [A]
 C = Common Cathode
 600 = Reverse Voltage [V]
 QB = TO-3P (3)

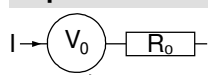
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DHG20C600QB	DHG20C600QB	Tube	30	503856

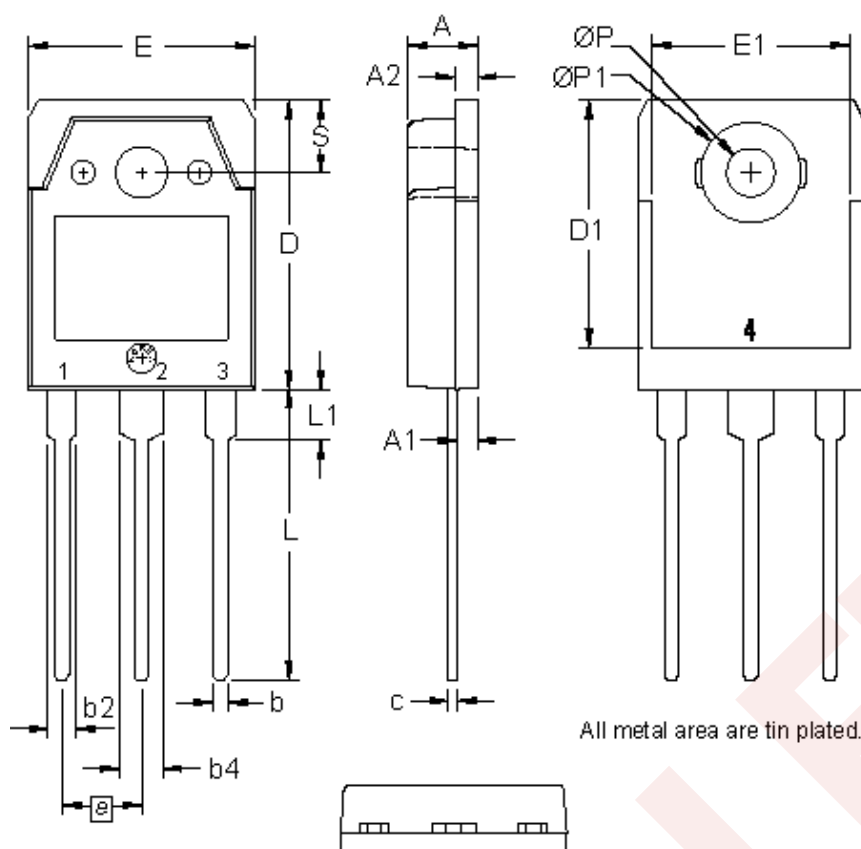
Similar Part	Package	Voltage class
DHG20C600PB	TO-220AB (3)	600

Equivalent Circuits for Simulation

* on die level

 $T_{VJ} = 150^{\circ}\text{C}$

		Fast Diode	
$V_{0\max}$	threshold voltage	1.04	V
$R_{0\max}$	slope resistance *	101	mΩ

Outlines TO-3P


Dim.	Millimeter		Inches	
	min	max	min	max
A	4.70	4.90	0.185	0.193
A1	1.30	1.50	0.051	0.059
A2	1.45	1.65	0.057	0.065
b	0.90	1.15	0.035	0.045
b2	1.90	2.20	0.075	0.087
b4	2.90	3.20	0.114	0.126
c	0.55	0.80	0.022	0.031
D	19.80	20.10	0.780	0.791
D1	16.90	17.20	0.665	0.677
E	15.50	15.80	0.610	0.622
E1	13.50	13.70	0.531	0.539
e	5.45 BSC		0.215 BSC	
L	19.80	20.20	0.780	0.795
L1	3.40	3.60	0.134	0.142
Ø P	3.20	3.40	0.126	0.134
ØP1	6.90	7.10	0.272	0.280
S	4.90	5.10	0.193	0.201

