

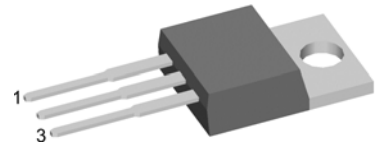
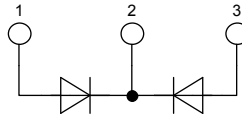
HiPerFRED

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

$V_{RRM} = 400\text{ V}$
 $I_{FAV} = 2 \times 15\text{ A}$
 $t_{rr} = 45\text{ ns}$

Part number

DPG 30 C 400 PB



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:

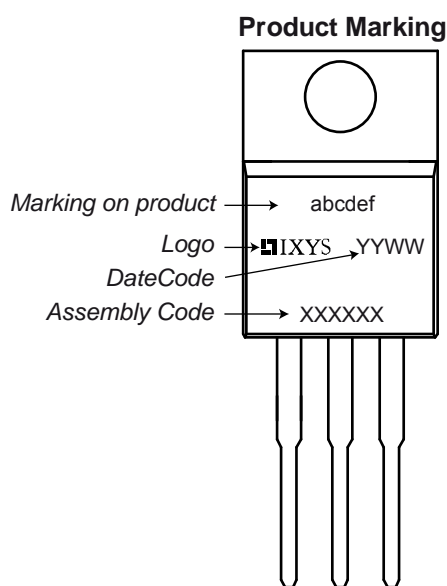
- Housing: TO-220
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

Ratings

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
V_{RRM}	max. repetitive reverse voltage				400	V
I_R	reverse current	$V_R = 400\text{ V}$			1	μA
		$V_R = 400\text{ V}$			0.1	mA
V_F	forward voltage	$I_F = 15\text{ A}$			1.40	V
		$I_F = 30\text{ A}$			1.60	V
		$I_F = 15\text{ A}$			1.08	V
		$I_F = 30\text{ A}$			1.29	V
I_{FAV}	average forward current	rectangular, $d = 0.5$			15	A
V_{FO}	threshold voltage				0.75	V
r_F	slope resistance				19.5	$\text{m}\Omega$
R_{thJC}	thermal resistance junction to case				1.70	K/W
T_{VJ}	virtual junction temperature		-55		175	$^{\circ}\text{C}$
P_{tot}	total power dissipation				90	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}$ (50 Hz), sine			150	A
I_{RM}	max. reverse recovery current				4	A
		$I_F = 10\text{ A}; V_R = 100\text{ V}$			tbd	A
t_{rr}	reverse recovery time	$-di_F/dt = 200\text{ A}/\mu\text{s}$			45	ns
					tbd	ns
C_J	junction capacitance	$V_R = \text{tbd V}; f = 1\text{ MHz}$			tbd	pF

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
I_{RMS}	RMS current	per pin ¹⁾			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		0.8	Nm
F_C	mounting force with clip		20		60	N

¹⁾ I_{RMS} 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.

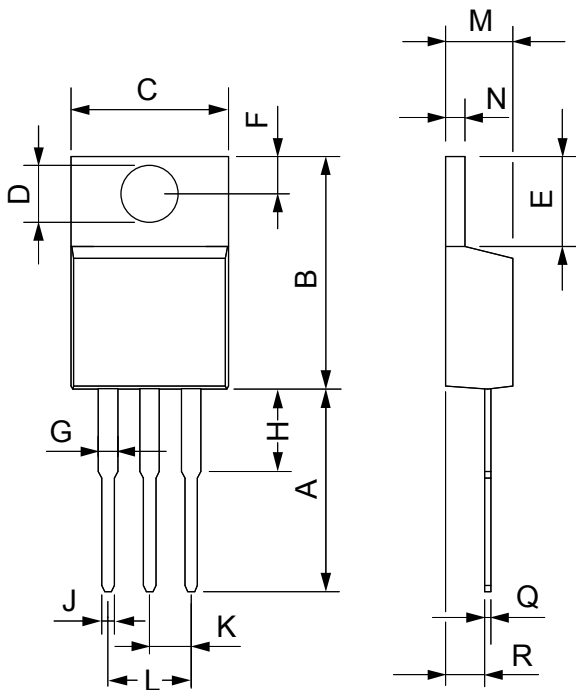

Part number

D = Diode
 P = HiPerFRED
 G = extreme fast
 30 = Current Rating [A]
 C = Common Cathode
 400 = Reverse Voltage [V]
 PB = TO-220AB (3)

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DPG 30 C 400 PB	DPG30C400PB	Tube	50	

Similar Part	Package	Voltage Class
DPG30C400HB	TO-247	400
DPG30C300PB	TO-220	300
DPG30C300HB	TO-247	300
DPG30C300PC	TO-263 (D2Pak)	300

Outlines TO-220



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	13.97	0.500	0.550
B	14.73	16.00	0.580	0.630
C	9.91	10.66	0.390	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.270
F	2.54	3.18	0.100	0.125
G	1.15	1.65	0.045	0.065
H	2.79	5.84	0.110	0.230
J	0.64	1.01	0.025	0.040
K	2.54	BSC	0.100	BSC
M	4.32	4.82	0.170	0.190
N	1.14	1.39	0.045	0.055
Q	0.35	0.56	0.014	0.022
R	2.29	2.79	0.090	0.110