HiPerFRED²

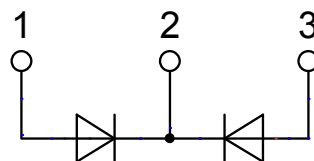|		
V_{RRM}	=	200V
I_{FAV}	= 2x	30A
t_{rr}	=	55ns

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

Part number

DPF60C200HB
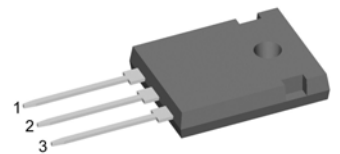
Backside: cathode

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-247

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

Data according to IEC 60747and per semiconductor unless otherwise specified

20131101a

Fast Diode

Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage		$T_{VJ} = 25°C$			200	V
V_{RRM}	max. repetitive reverse blocking voltage		$T_{VJ} = 25°C$			200	V
I_R	reverse current, drain current	$V_R = 200$ V	$T_{VJ} = 25°C$			5	µA
		$V_R = 200$ V	$T_{VJ} = 150°C$			0.25	mA
V_F	forward voltage drop	$I_F = 30$ A	$T_{VJ} = 25°C$			1.11	V
		$I_F = 60$ A				1.30	V
		$I_F = 30$ A	$T_{VJ} = 150°C$			0.91	V
		$I_F = 60$ A				1.11	V
I_{FAV}	average forward current	$T_C = 150°C$ rectangular $d = 0.5$	$T_{VJ} = 175°C$			30	A
V_{F0}	threshold voltage	for power loss calculation only	$T_{VJ} = 175°C$			0.67	V
r_F	slope resistance					6.6	mΩ
R_{thJC}	thermal resistance junction to case					0.95	K/W
R_{thCH}	thermal resistance case to heatsink				0.25		K/W
P_{tot}	total power dissipation		$T_C = 25°C$			160	W
I_{FSM}	max. forward surge current	$t = 10$ ms; (50 Hz), sine; $V_R = 0$ V	$T_{VJ} = 45°C$			400	A
C_J	junction capacitance	$V_R = 150$ V $f = 1$ MHz	$T_{VJ} = 25°C$		42		pF
I_{RM}	max. reverse recovery current	$I_F = 30$ A; $V_R = 100$ V -di$_F$/dt = 200 A/µs	$T_{VJ} = 25°C$		6		A
			$T_{VJ} = 125°C$		10		A
t_{rr}	reverse recovery time		$T_{VJ} = 25°C$		55		ns
			$T_{VJ} = 125°C$		85		ns

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Package	TO-247		Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal [1]			50	A
T_{VJ}	virtual junction temperature		-55		175	°C
T_{op}	operation temperature		-55		150	°C
T_{stg}	storage temperature		-55		150	°C
Weight				6		g
M_D	mounting torque		0.8		1.2	Nm
F_C	mounting force with clip		20		120	N

Product Marking

Logo → IXYS
Part No. → XXXXXXXXX
Assembly Line → Zyyww
Assembly Code → abcd
Date Code →
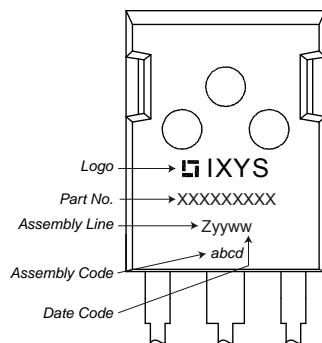
Part number

D = Diode
P = HiPerFRED
F = ultra fast
60 = Current Rating [A]
C = Common Cathode
200 = Reverse Voltage [V]
HB = TO-247AD (3)

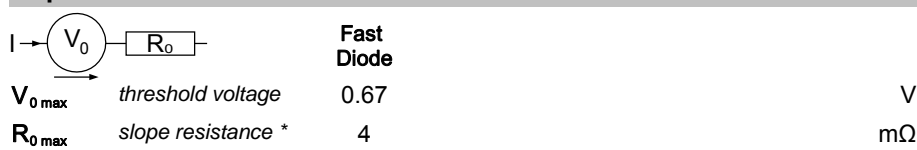| Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DPF60C200HB	DPF60C200HB	Tube	30	511115

Similar Part	Package	Voltage class
DPF60C200HJ	ISOPLUS247 (3)	200
DPG60C200HB	TO-247AD (3)	200
DPG60C200QB	TO-3P (3)	200
DPF80C200HB	TO-247AD (3)	200

Equivalent Circuits for Simulation   *on die level T_{VJ} = 175 °C

		Fast Diode		
$V_{0\ max}$	threshold voltage	0.67		V
$R_{0\ max}$	slope resistance *	4		mΩ

IXYS reserves the right to change limits, conditions and dimensions.   Data according to IEC 60747and per semiconductor unless otherwise specified   20131101a

Outlines   TO-247
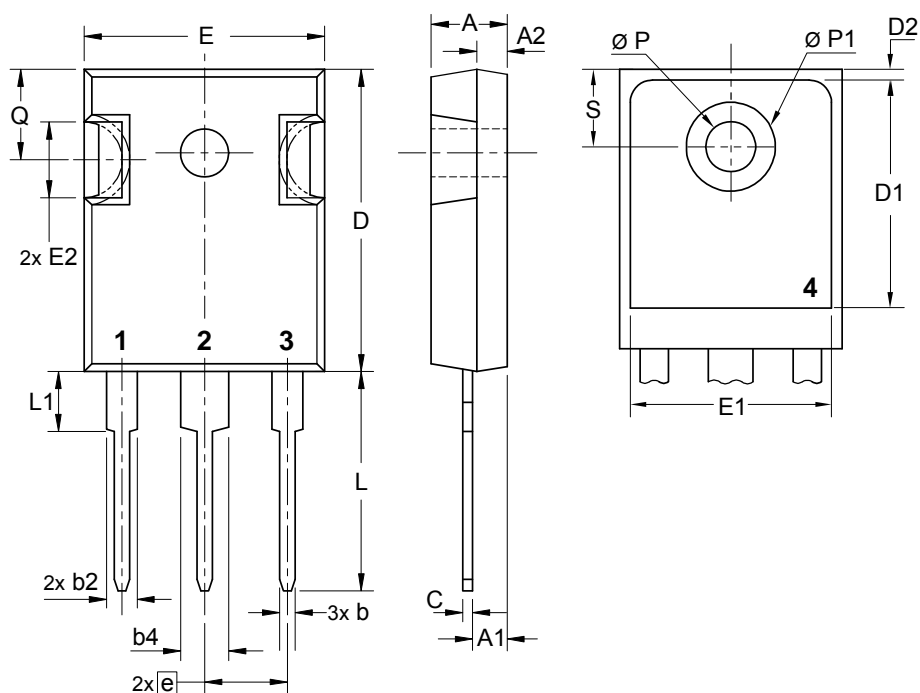
Sym.	Inches		Millimeter	
	min.	max.	min.	max.
A	0.185	0.209	4.70	5.30
A1	0.087	0.102	2.21	2.59
A2	0.059	0.098	1.50	2.49
D	0.819	0.845	20.79	21.45
E	0.610	0.640	15.48	16.24
E2	0.170	0.216	4.31	5.48
e	0.215 BSC		5.46 BSC	
L	0.780	0.800	19.80	20.30
L1	-	0.177	-	4.49
Ø P	0.140	0.144	3.55	3.65
Q	0.212	0.244	5.38	6.19
S	0.242 BSC		6.14 BSC	
b	0.039	0.055	0.99	1.40
b2	0.065	0.094	1.65	2.39
b4	0.102	0.135	2.59	3.43
c	0.015	0.035	0.38	0.89
D1	0.515	-	13.07	-
D2	0.020	0.053	0.51	1.35
E1	0.530	-	13.45	-
Ø P1	-	0.29	-	7.39
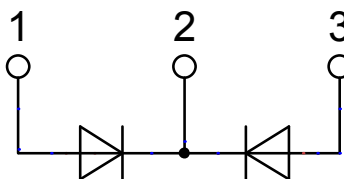
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