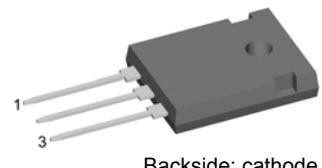
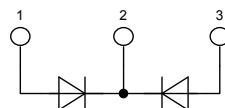


**HiPerFRED<sup>2</sup>**

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

**Part number****DPF 80 C 200 HB**

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

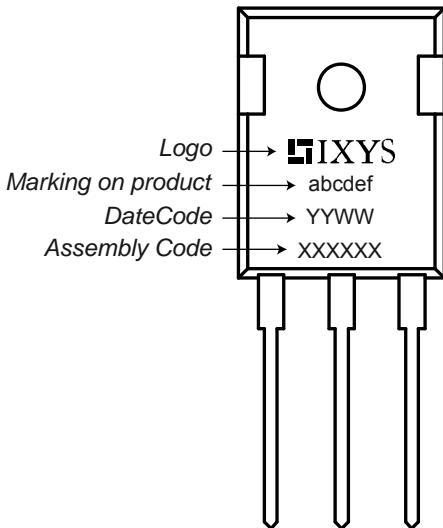
Symbol	Definition	Conditions		Ratings		
		min.	typ.	max.	Unit	
$V_{RRM}$	max. repetitive reverse voltage			200		V
$I_R$	reverse current	$V_R = 200\text{V}$	$T_{VJ} = 25^\circ\text{C}$		1	$\mu\text{A}$
		$V_R = 200\text{V}$	$T_{VJ} = 150^\circ\text{C}$		0.2	mA
$V_F$	forward voltage	$I_F = 40\text{A}$	$T_{VJ} = 25^\circ\text{C}$		1.22	V
		$I_F = 80\text{A}$			1.45	V
		$I_F = 40\text{A}$	$T_{VJ} = 150^\circ\text{C}$		0.95	V
		$I_F = 80\text{A}$			1.20	V
$I_{FAV}$	average forward current	rectangular	$d = 0.5$	$T_c = 140^\circ\text{C}$		A
$V_{FO}$	threshold voltage	$\left. \begin{array}{l} V_F \\ r_F \end{array} \right\}$ slope resistance } for power loss calculation only		$T_{VJ} = 175^\circ\text{C}$	0.67	V
$r_F$	slope resistance				5.8	$\text{m}\Omega$
$R_{thJC}$	thermal resistance junction to case				0.70	K/W
$T_{VJ}$	virtual junction temperature			-55	175	$^\circ\text{C}$
$P_{tot}$	total power dissipation				215	W
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}$ (50 Hz), sine		$T_{VJ} = 45^\circ\text{C}$		A
$I_{RM}$	max. reverse recovery current			$T_{VJ} = 25^\circ\text{C}$	4	A
		$I_F = 50\text{A}; V_R = 100\text{V}$		$T_{VJ} = 125^\circ\text{C}$	tbd	A
$t_{rr}$	reverse recovery time	$-di_F/dt = 100\text{ A}/\mu\text{s}$		$T_{VJ} = 25^\circ\text{C}$	35	ns
				$T_{VJ} = 125^\circ\text{C}$	tbd	ns
$C_J$	junction capacitance	$V_R = 100\text{V}; f = 1\text{ MHz}$		$T_{VJ} = 25^\circ\text{C}$	81	pF

Symbol	Definition	Conditions	Ratings			
			min.	typ.	max.	
$I_{RMS}$	RMS current	per pin <sup>1)</sup>			70	A
$R_{thCH}$	thermal resistance case to heatsink			0.25		K/W
$T_{stg}$	storage temperature		-55		150	°C
<b>Weight</b>				6		g
$M_D$	mounting torque		0.8		1.2	Nm
$F_c$	mounting force with clip		20		120	N

<sup>1)</sup>  $I_{RMS}$  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.

### Product Marking



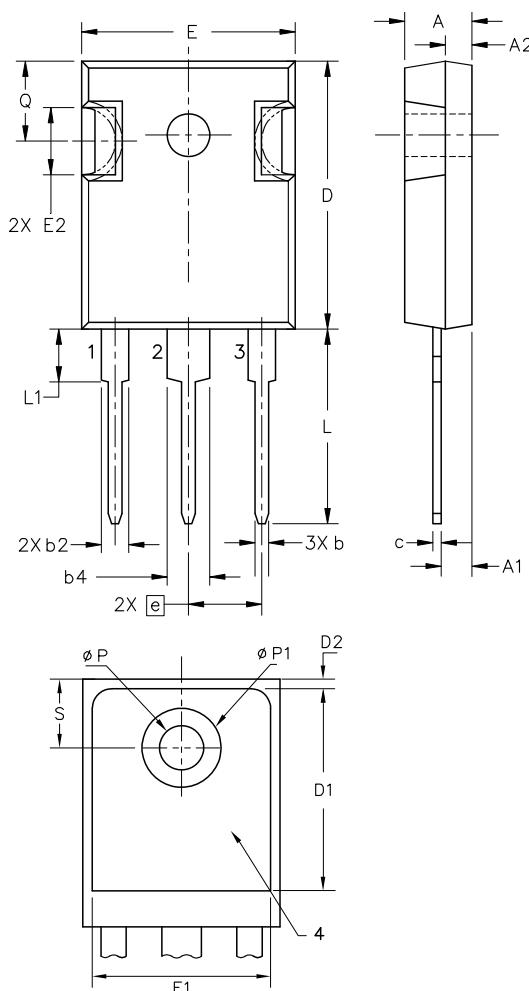
### Part number

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

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DPF 80 C 200 HB	DPF80C200HB	Tube	30	508214

Similar Part	Package	Voltage Class
DPF60C200HJ	ISOPLUS247 (3)	200

## Outlines TO-247



Sym.	Inches min. max.	Millimeter 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