

Standard Recovery Diodes, Generation 2 DO-5 (Stud Version), 80 A

80PF(R)...



DO-203AB (DO-5)

80PF(R)...W



DO-203AB (DO-5)

FEATURES

- High surge current capability
- Designed for a wide range of applications
- Stud cathode and stud anode version
- Wire version available
- Low thermal resistance
- UL approval pending
- Compliant to RoHS directive 2002/95/EC
- Designed and qualified for multiple level



RoHS
COMPLIANT

TYPICAL APPLICATIONS

- Battery chargers
- Converters
- Power supplies
- Machine tool controls
- Welding

PRODUCT SUMMARY

$I_{F(AV)}$	80 A
-------------	------

MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		80	A
	T_C	140	°C
$I_{F(RMS)}$		126	A
I_{FSM}	50 Hz	1500	A
	60 Hz	1570	
I^2t	50 Hz	11 250	A ² s
	60 Hz	10 230	
V_{RRM}	Range	400 to 1200	V
T_J		- 55 to 180	°C

ELECTRICAL SPECIFICATIONS

VOLTAGE RATINGS

TYPE NUMBER	VOLTAGE CODE	V_{RRM} , MAXIMUM REPETITIVE PEAK REVERSE VOLTAGE V	V_{RSM} , MAXIMUM NON-REPETITIVE PEAK REVERSE VOLTAGE V	I_{RRM} MAXIMUM AT $T_J = 150$ °C mA
80PF(R)...(W)	40	400	500	9
	80	800	960	
	120	1200	1440	

80PF(R)...(W) Series

Vishay High Power Products

Standard Recovery Diodes,
Generation 2 DO-5 (Stud Version), 80 A



FORWARD CONDUCTION						
PARAMETER	SYMBOL	TEST CONDITIONS			VALUES	UNITS
Maximum average forward current at case temperature	I _{F(AV)}	180° conduction, half sine wave			80	A
					140	°C
Maximum RMS forward current	I _{F(RMS)}				126	A
Maximum peak, one-cycle forward, non-repetitive surge current	I _{FSM}	t = 10 ms	No voltage reappplied	Sinusoidal half wave, initial T _J = 150 °C	1500	A
		t = 8.3 ms			1570	
		t = 10 ms	100 % V _{RRM} reappplied		1260	
		t = 8.3 ms			1320	
Maximum I ² t for fusing	I ² t	t = 10 ms	No voltage reappplied		11 250	A ² s
		t = 8.3 ms			10 230	
		t = 10 ms	100 % V _{RRM} reappplied		7950	
		t = 8.3 ms			7200	
Maximum I ² √t for fusing	I ² √t	t = 0.1 ms to 10 ms, no voltage reappplied			112 500	A ² √s
Low level value of threshold voltage	V _{F(TO)}	(16.7 % x π x I _{F(AV)}) < I < π x I _{F(AV)}), T _J = T _J maximum			0.73	V
Low level value of forward slope resistance	r _f	(16.7 % x π x I _{F(AV)}) < I < π x I _{F(AV)}), T _J = T _J maximum			3.0	mΩ
Maximum forward voltage drop	V _{FM}	I _{pk} = 220 A, T _J = 25 °C, t _p = 400 μs rectangular wave			1.40	V

THERMAL AND MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction operating and storage temperature range	T _J , T _{Stg}		- 55 to 180	°C
Maximum thermal resistance, junction to case	R _{thJC}	DC operation	0.30	K/W
Maximum thermal resistance, case to heatsink	R _{thCS}	Mounting surface, smooth, flat and greased	0.25	
Maximum allowable mounting torque (+ 0 %, - 10 %)		Not lubricated thread, tightening on nut ⁽¹⁾	3.4 (30)	N · m (lbf · in)
		Lubricated thread, tightening on nut ⁽¹⁾	2.3 (20)	
		Not lubricated thread, tightening on hexagon ⁽²⁾	4.2 (37)	
		Lubricated thread, tightening on hexagon ⁽²⁾	3.2 (28)	
Approximate weight			15.8	g
			0.56	oz.
Case style		See dimensions - link at the end of datasheet	DO-203AB (DO-5)	

Notes

(1) Recommended for pass-through holes

(2) Torque must be applicable only to hexagon and not to plastic structure, recommended for holed heatsink



80PF(R)...(W) Series

Standard Recovery Diodes,
Generation 2 DO-5 (Stud Version), 80 A

Vishay High Power Products

ΔR_{thJC} CONDUCTION				
CONDUCTION ANGLE	SINUSOIDAL CONDUCTION	RECTANGULAR CONDUCTION	TEST CONDITIONS	UNITS
180°	0.14	0.10	$T_J = T_{J \text{ maximum}}$	K/W
120°	0.16	0.17		
90°	0.21	0.22		
60°	0.30	0.31		
30°	0.50	0.50		

Note

- The table above shows the increment of thermal resistance R_{thJC} when devices operate at different conduction angles than DC

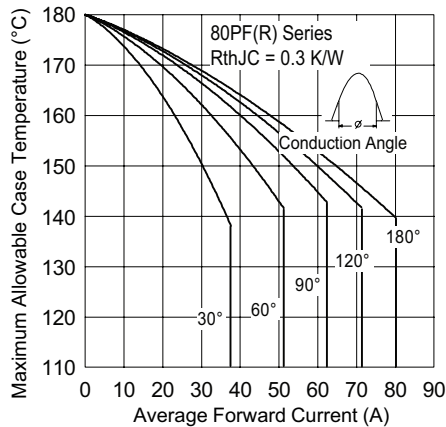


Fig. 1 - Current Ratings Characteristics

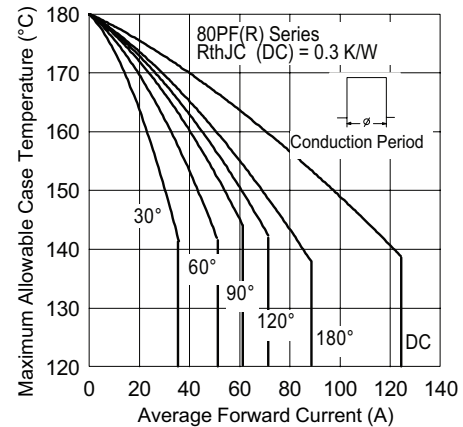


Fig. 2 - Current Ratings Characteristics

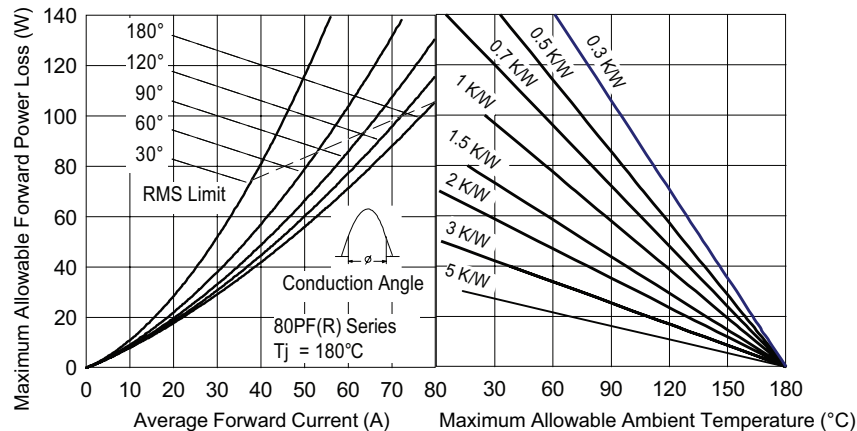


Fig. 3 - Forward Power Loss Characteristics

80PF(R)...(W) Series

Vishay High Power Products

Standard Recovery Diodes,
Generation 2 DO-5 (Stud Version), 80 A

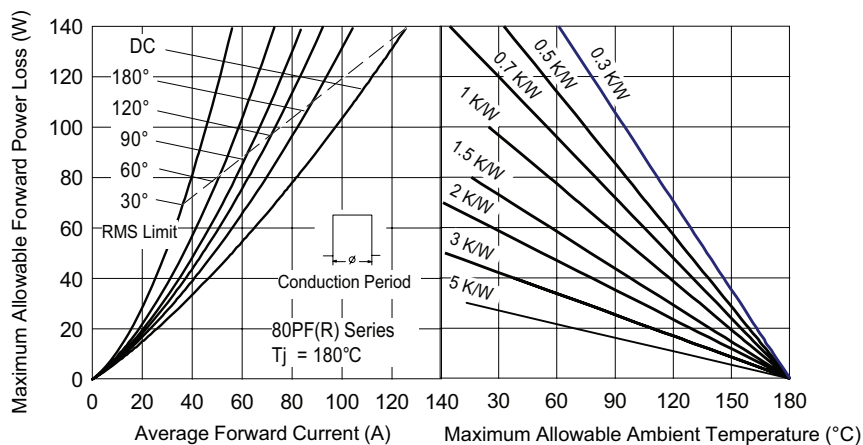


Fig. 4 - Forward Power Loss Characteristics

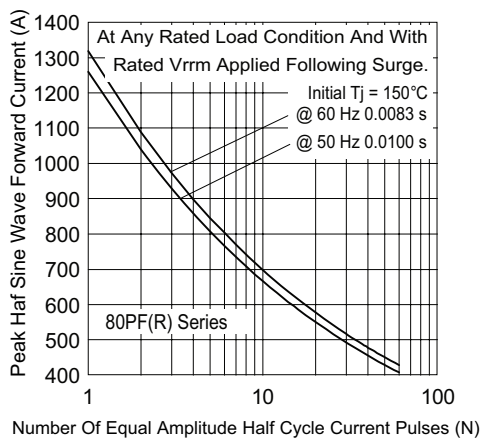


Fig. 5 - Maximum Non-Repetitive Surge Current

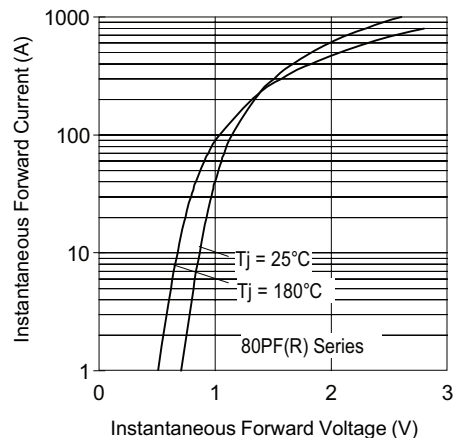


Fig. 7 - Forward Voltage Drop Characteristics

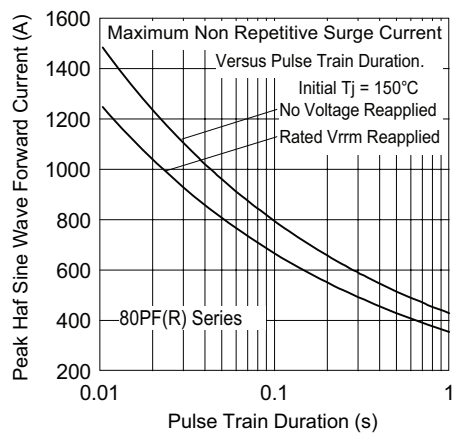


Fig. 6 - Maximum Non-Repetitive Surge Current

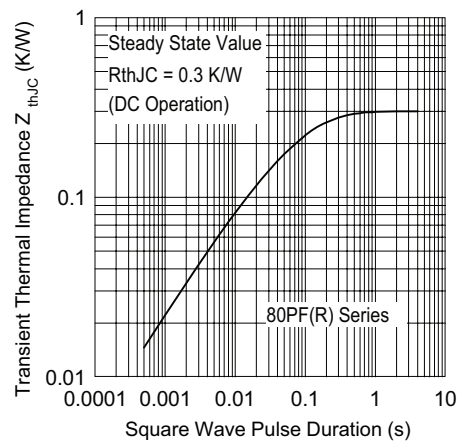


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics



ORDERING INFORMATION TABLE

Device code	80	PF	R	120	W
	1	2	3	4	5

- | | | |
|--------------|---|---|
| <div>1</div> | - | <ul style="list-style-type: none">• 80 = Standard device• 82 = Isolated lead on standard terminal
with silicone sleeve available for 1200 V only
(red = Reverse polarity)
(blue = Normal polarity) |
| <div>2</div> | - | PF = Plastic package |
| <div>3</div> | - | <ul style="list-style-type: none">• None = Stud normal polarity (cathode to stud)• R = Stud reverse polarity (anode to stud) |
| <div>4</div> | - | Voltage code x 10 = V_{RRM} (see Voltage Ratings table) |
| <div>5</div> | - | <ul style="list-style-type: none">• None = Standard terminal
(see dimensions for 80PF(R)... - link at the end of datasheet)• W = Wire terminal
(see dimensions for 80PF(R)...W - link at the end of datasheet) |

LINKS TO RELATED DOCUMENTS	
Dimensions	www.vishay.com/doc?95345



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru

www.lifeelectronics.ru