



95PF(R)...(W) Series

Vishay High Power Products

Standard Recovery Diodes Generation 2 DO-5 (Stud Version), 95 A

95PF(R)...



DO-203AB (DO-5)

95PF(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
- RoHS compliant
- Designed and qualified for multiple level



RoHS
COMPLIANT

TYPICAL APPLICATIONS

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

PRODUCT SUMMARY

$I_{F(AV)}$	95 A
-------------	------

MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		95	A
	T_C	140	°C
$I_{F(RMS)}$		149	A
I_{FSM}	50 Hz	2000	A
	60 Hz	2090	
I^2t	50 Hz	20 000	A ² s
	60 Hz	18 180	
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 $T_J = 150\text{ °C}$ mA
95PF(R)...(W)	40	400	500	9
	80	800	960	
	120	1200	1440	



95PF(R)...(W) Series



Vishay High Power Products

Standard Recovery Diodes
Generation 2 DO-5 (Stud Version), 95 A

FORWARD CONDUCTION					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum average forward current at case temperature	$I_{F(AV)}$	180° conduction, half sine wave		95	A
				140	°C
Maximum RMS forward current	$I_{F(RMS)}$			149	A
Maximum peak, one cycle forward, non-repetitive surge current	I_{FSM}	t = 10 ms	No voltage reapplied	2000	A
		t = 8.3 ms		2090	
		t = 10 ms	100 % V_{RRM} reapplied	1680	
		t = 8.3 ms		1760	
Maximum I^2t for fusing	I^2t	t = 10 ms	No voltage reapplied	20 000	A ² s
		t = 8.3 ms		18 180	
		t = 10 ms	100 % V_{RRM} reapplied	14 100	
		t = 8.3 ms		12 800	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 to 10 ms, no voltage reapplied		200 000	A ² √s
Low level value of threshold voltage	$V_{F(TO)}$	$(16.7 \% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, $T_J = T_J$ maximum		0.73	V
Low level value of forward slope resistance	r_f	$(16.7 \% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, $T_J = T_J$ maximum		2.4	mΩ
Maximum forward voltage drop	V_{FM}	$I_{pk} = 267$ 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 and storage temperature range	T_J, T_{Stg}		- 55 to 180	°C
Maximum thermal resistance, junction to case	R_{thJC}	DC operation	0.27	K/W
Thermal resistance, case to heatsink	R_{thCS}	Mounting surface, smooth, flat and greased	0.25	
Allowable mounting torque		Tightening on nut ⁽¹⁾ Not lubricated threads	3.4 + 0 - 10 % (30)	N · m (lbf · in)
		Tightening on hexagon ⁽²⁾ Lubricated threads	2.3 + 0 - 10 % (20)	
Approximate weight			15.8	g
			0.56	oz.
Case style		See dimensions - link at the end of datasheet	DO-203AB (DO-5)	

Notes

- (1) As general recommendation we suggest to tight on hexagon and not on nut
(2) Torque must be applicable only to hexagon and not to plastic structure



95PF(R)...(W) Series

Standard Recovery Diodes
Generation 2 DO-5 (Stud Version), 95 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

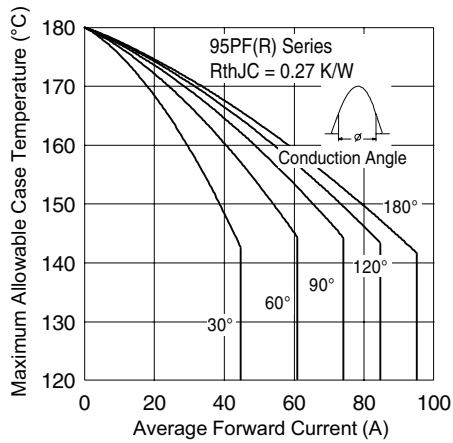


Fig. 1 - Current Ratings Characteristics

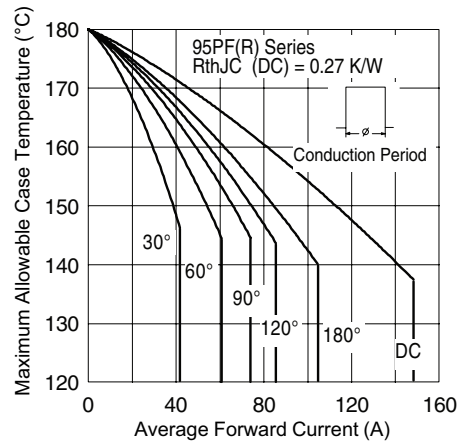


Fig. 2 - Current Ratings Characteristics

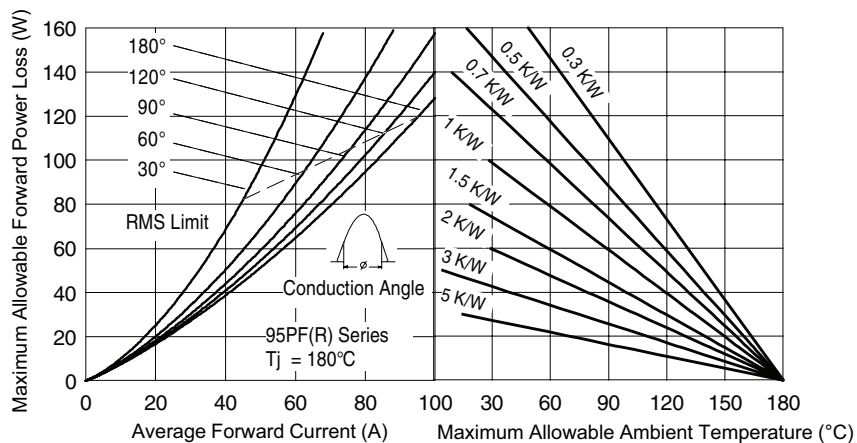


Fig. 3 - Forward Power Loss Characteristics

95PF(R)...(W) Series



Vishay High Power Products

Standard Recovery Diodes
Generation 2 DO-5 (Stud Version), 95 A

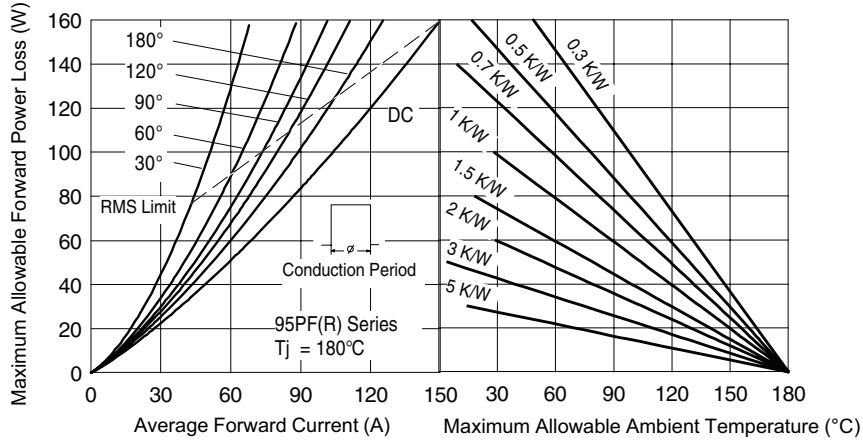


Fig. 4 - Forward Power Loss Characteristics

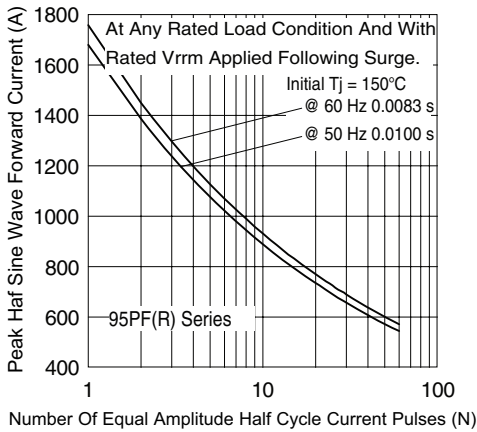


Fig. 5 - Maximum Non-Repetitive Surge Current

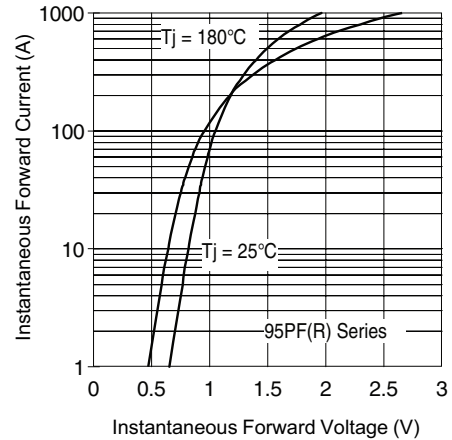


Fig. 7 - Forward Voltage Drop Characteristics

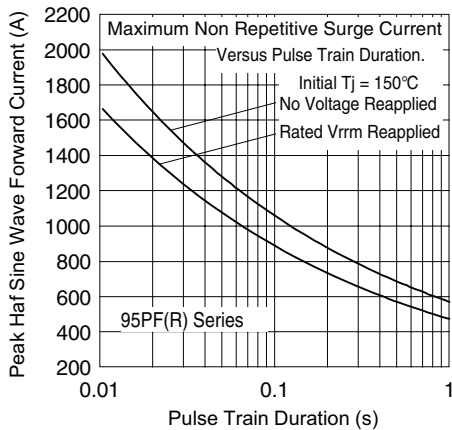


Fig. 6 - Maximum Non-Repetitive Surge Current

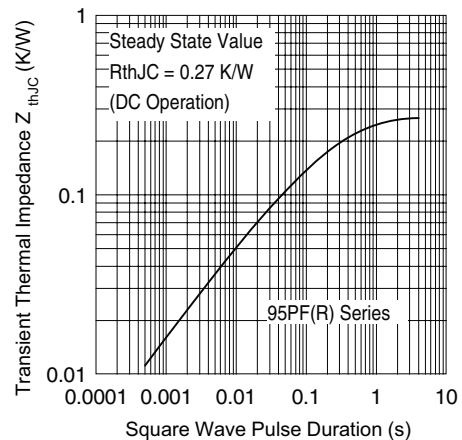


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

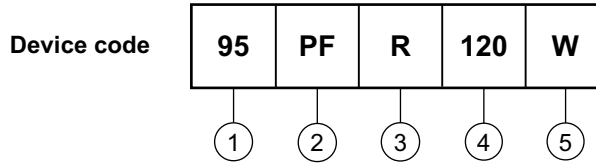


95PF(R)...(W) Series

Standard Recovery Diodes
Generation 2 DO-5 (Stud Version), 95 A

Vishay High Power Products

ORDERING INFORMATION TABLE



- 1** -
 - 95 = Standard device
 - 97 = Isolated lead on standard terminal
with silicone sleeve available for 1200 V only
(red = Reverse polarity)
(blue = Normal polarity)
- 2** - PF = Plastic package
- 3** -
 - None = Stud normal polarity (cathode to stud)
 - R = Stud reverse polarity (anode to stud)
- 4** - Voltage code x 10 = V_{RRM} (see Voltage Ratings table)
- 5** -
 - None = Standard terminal
(see dimensions for 95PF(R)... - link at the end of datasheet)
 - W = Wire terminal
(see dimensions for 95PF(R)...W - link at the end of datasheet)

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



Disclaimer

All product specifications and data are subject to change without notice.

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 herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

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.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.