



95PF(R)...(W) High Voltage 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
- RoHS compliant
- Designed and qualified for multiple level



RoHS
COMPLIANT

TYPICAL APPLICATIONS

- Converters
- Power supplies
- Machine tool controls
- Welding
- Any high voltage input rectification bridge

PRODUCT SUMMARY

$I_{F(AV)}$	95 A
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MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		95	A
	T_C	128	°C
$I_{F(RMS)}$		149	A
I_{FSM}	50 Hz	1700	A
	60 Hz	1800	
I^2t	50 Hz	14 500	A^2s
	60 Hz	13 500	
V_{RRM}	Range	1400 to 1600	V
T_J		- 55 to 150	°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
95PF(R)...(W)	140	1400	1650	4.5
	160	1600	1900	

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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		
				128	°C			
Maximum RMS forward current	$I_{F(RMS)}$				149	A		
Maximum peak, one cycle forward, non-repetitive surge current	I_{FSM}	$t = 10 \text{ ms}$	No voltage reapplied	Sinusoidal half wave, initial $T_J = 150 \text{ °C}$	1700	A		
		$t = 8.3 \text{ ms}$			1800			
		$t = 10 \text{ ms}$			1450			
		$t = 8.3 \text{ ms}$			1500			
Maximum I^2t for fusing	I^2t	$t = 10 \text{ ms}$	No voltage reapplied	Sinusoidal half wave, initial $T_J = 150 \text{ °C}$	14 500	A^2s		
		$t = 8.3 \text{ ms}$			13 500			
		$t = 10 \text{ ms}$			10 500			
		$t = 8.3 \text{ ms}$			9400			
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	$t = 0.1 \text{ to } 10 \text{ ms}$, no voltage reapplied			145 000	$\text{A}^2\sqrt{\text{s}}$		
Low level value of threshold voltage	$V_{F(TO)}$	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, $T_J = T_J \text{ maximum}$			0.73	V		
Low level value of forward slope resistance	r_f	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, $T_J = T_J \text{ maximum}$			2.4	$\text{m}\Omega$		
Maximum forward voltage drop	V_{FM}	$I_{pk} = 267 \text{ A}$, $T_J = 25 \text{ °C}$, $t_p = 400 \mu\text{s}$ 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 150	°C
Maximum thermal resistance, junction to case	R_{thJC}	DC operation	0.27	K/W
Thermal resistance, case to heatsink	R_{thCS}		0.25	
Allowable mounting torque		Tightening on nut ⁽¹⁾ Not lubricated threads	$3.4 + 0 - 10\%$ (30)	$\text{N} \cdot \text{m}$ (lbf · in)
		Tightening on hexagon ⁽²⁾ Lubricated threads	$2.3 + 0 - 10\%$ (20)	
Approximate weight			15.8	g
			0.56	
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



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ΔR_{thJC} CONDUCTION

CONDUCTION ANGLE	SINUSOIDAL CONDUCTION	RECTANGULAR CONDUCTION	TEST CONDITIONS	UNITS
180°	0.14	0.10	$T_J = T_J$ 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

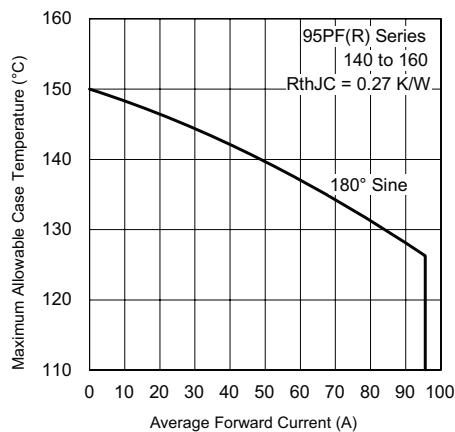


Fig. 1 - Current Ratings Characteristics

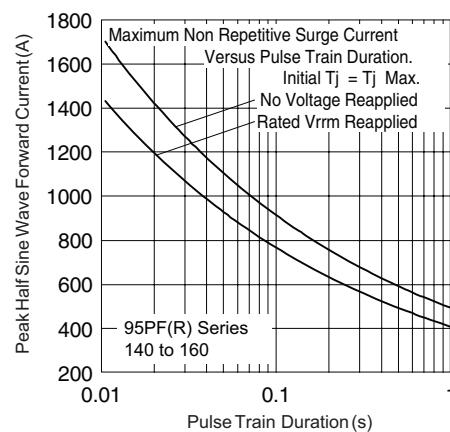


Fig. 3 - Maximum Non-Repetitive Surge Current

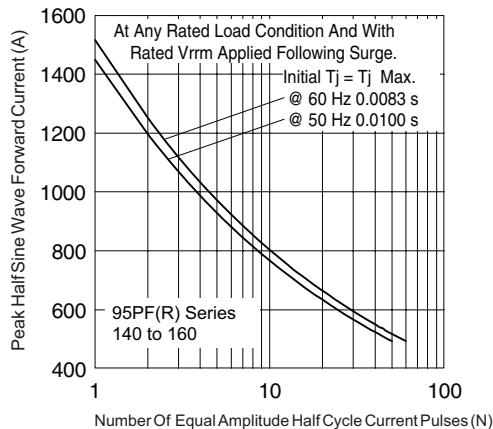


Fig. 2 - Maximum Non-Repetitive Surge Current

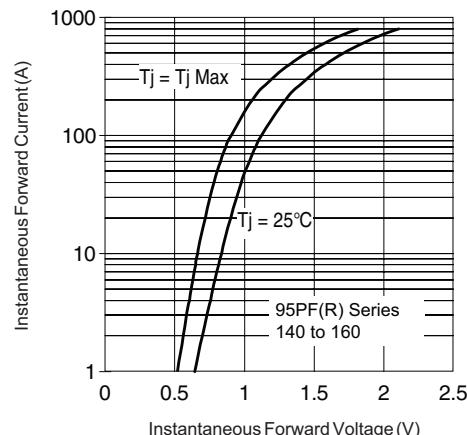


Fig. 4 - Forward Voltage Drop Characteristics

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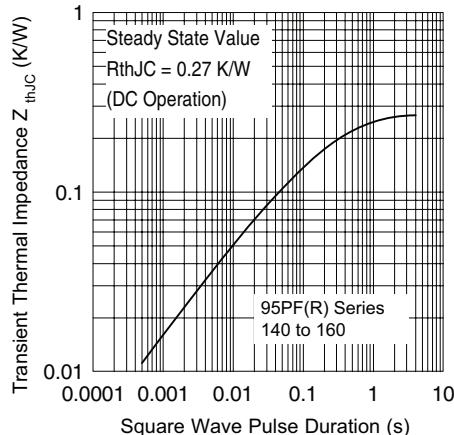


Fig. 5 - Thermal Impedance Z_{thJC} Characteristics

ORDERING INFORMATION TABLE

Device code	95	PF	R	160	W
1					
2					
3					
4					
5					

1 - 95 = Standard device
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



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