

Standard Recovery Diodes (Stud Version), 70 A



DO-203AB (DO-5)

FEATURES

- High surge current capability
- Designed for a wide range of applications
- Stud cathode and stud anode version
- Leaded version available
- Types up to 1600 V V_{RRM}
- RoHS compliant
- Designed and qualified for industrial level


RoHS
COMPLIANT

TYPICAL APPLICATIONS

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

PRODUCT SUMMARY

$I_{F(AV)}$	70 A
-------------	------

MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	70HF(R)		UNITS
		10 TO 120	140/160	
I _{F(AV)}		70	70	A
	T _C	140	110	°C
I _{F(RMS)}		110		A
I _{FSM}	50 Hz	1200		A
	60 Hz	1250		
I ² _t	50 Hz	7100		A ² s
	60 Hz	6450		
V _{RRM}	Range	100 to 1200	1400/1600	V
T _J		- 65 to 180	- 65 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	$V_{R(BR)}$, MINIMUM AVALANCHE VOLTAGE V	I_{RRM} MAXIMUM AT $T_J = T_J$ MAXIMUM mA
70HF(R)	10	100	200	200	15
	20	200	300	300	
	40	400	500	500	
	60	600	720	725	9
	80	800	960	950	
	100	1000	1200	1150	
	120	1200	1440	1350	4.5
	140	1400	1650	1550	
	160	1600	1900	1750	

FORWARD CONDUCTION							
PARAMETER	SYMBOL	TEST CONDITIONS			70HF(R)		UNITS
					10 TO 120	140/160	
Maximum average forward current at case temperature	I _{F(AV)}	180° conduction, half sine wave			70		A
					140	110	°C
Maximum RMS forward current	I _{F(RMS)}				110		A
Maximum peak, one cycle forward, non-repetitive surge current	I _{FSM}	t = 10 ms	No voltage reapplied	Sinusoidal half wave, initial T _J = T _J maximum	1200		A
		t = 8.3 ms			1250		
		t = 10 ms	100 % V _{RRM} reapplied		1000		
		t = 8.3 ms			1050		
Maximum I ² t for fusing	I ² t	t = 10 ms	No voltage reapplied		7100		A ² s
		t = 8.3 ms			6450		
		t = 10 ms	100 % V _{RRM} reapplied		5000		
		t = 8.3 ms			4550		
Maximum I ² √t for fusing	I ² √t	t = 0.1 to 10 ms, no voltage reapplied			71 000		A ² √s
Low level value of threshold voltage	V _{F(TO)1}	(16.7 % × π × I _{F(AV)} < I < π × I _{F(AV)}), T _J = T _J maximum			0.79		V
High level value of threshold voltage	V _{F(TO)2}	(I > π × I _{F(AV)}), T _J = T _J maximum			1.00		
Low level value of forward slope resistance	r _{f1}	(16.7 % × π × I _{F(AV)} < I < π × I _{F(AV)}), T _J = T _J maximum			2.33		mΩ
High level value of forward slope resistance	r _{f2}	(I > π × I _{F(AV)}), T _J = T _J maximum			1.53		
Maximum forward voltage drop	V _{FM}	I _{pk} = 220 A, T _J = 25 °C, t _p = 400 μs rectangular wave			1.35	1.46	V

THERMAL AND MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS	70HF(R)		UNITS
			10 TO 120	140/160	
Maximum junction and storage temperature range	T _J , T _{Stg}		- 65 to 180	- 65 to 150	°C
Maximum thermal resistance, junction to case	R _{thJC}	DC operation	0.45		K/W
Thermal resistance, case to heatsink	R _{thCS}	Mounting surface, smooth, flat and greased	0.25		
Allowable mounting torque		Not lubricated threads	3.4 + 0 - 10 % (30)		N · m (lbf · in)
		Lubricated threads	2.3 + 0 - 10 % (20)		
Approximate weight			17		g
			0.6		oz.
Case style		See dimensions - link at the end of datasheet	DO-203AB (DO-5)		



ΔR_{thJC} CONDUCTION				
CONDUCTION ANGLE	SINUSOIDAL CONDUCTION	RECTANGULAR CONDUCTION	TEST CONDITIONS	UNITS
180°	0.08	0.06	$T_J = T_J \text{ maximum}$	K/W
120°	0.10	0.11		
90°	0.13	0.14		
60°	0.19	0.20		
30°	0.30	0.30		

Note

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

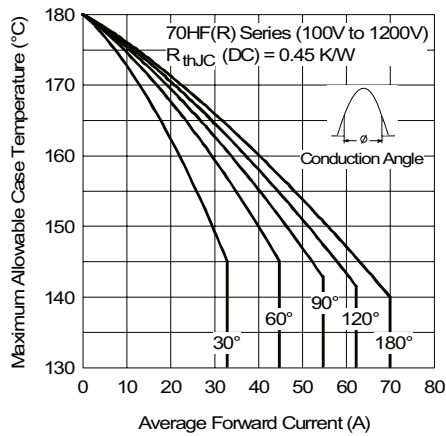


Fig. 1 - Current Ratings Characteristics

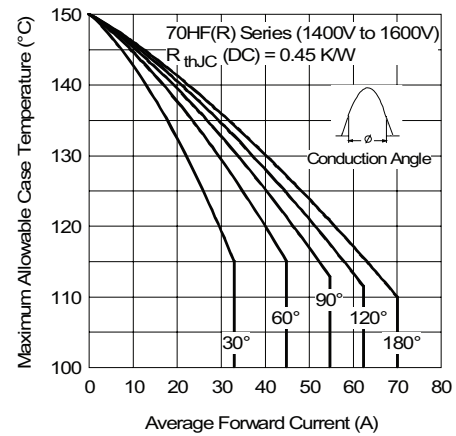


Fig. 3 - Current Ratings Characteristics

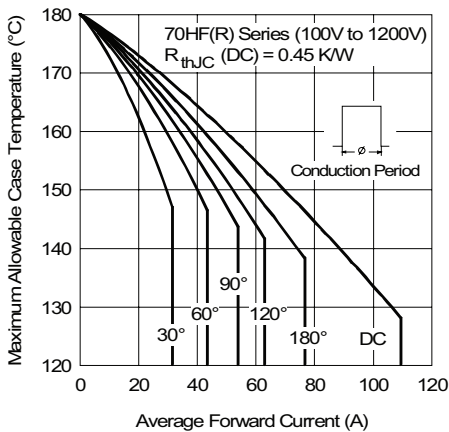


Fig. 2 - Current Ratings Characteristics

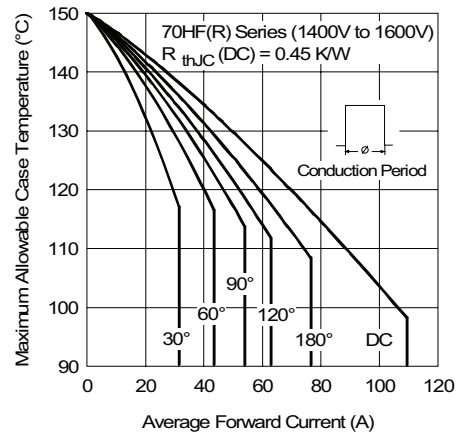


Fig. 4 - Current Ratings Characteristics

70HF(R) Series

Vishay High Power Products Standard Recovery Diodes
(Stud Version), 70 A

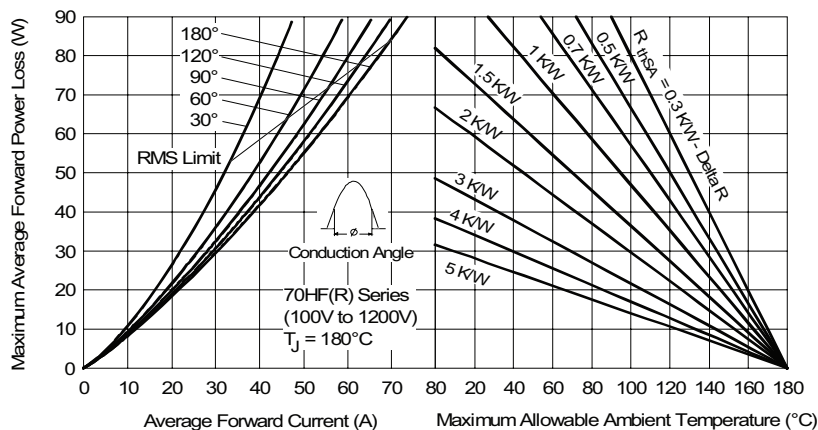


Fig. 5 - Forward Power Loss Characteristics

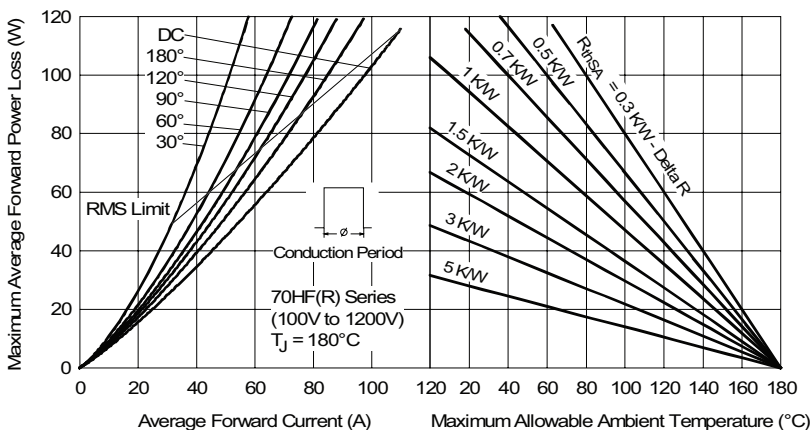


Fig. 6 - Forward Power Loss Characteristics

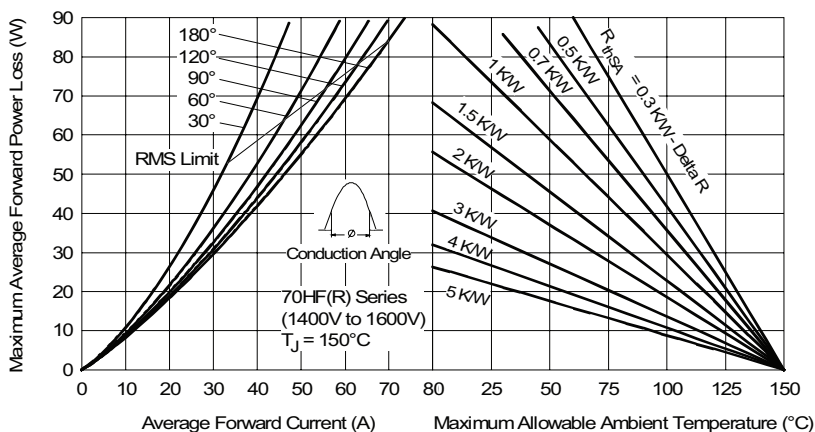


Fig. 7 - Forward Power Loss Characteristics

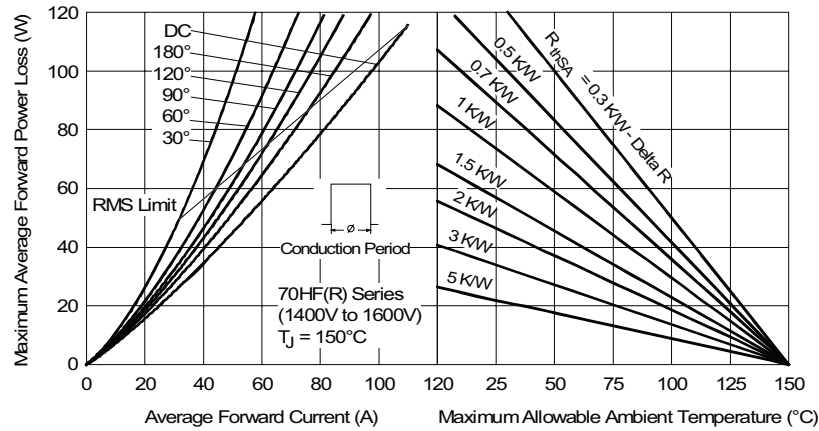


Fig. 8 - Forward Power Loss Characteristics

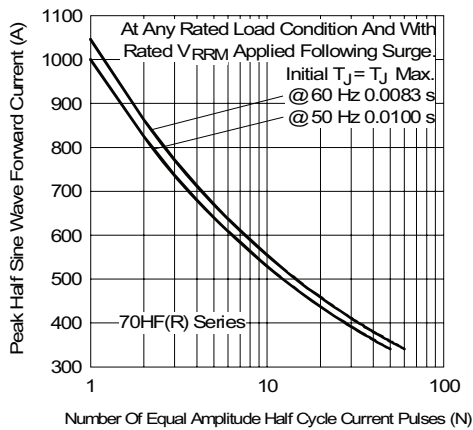


Fig. 9 - Maximum Non-Repetitive Surge Current

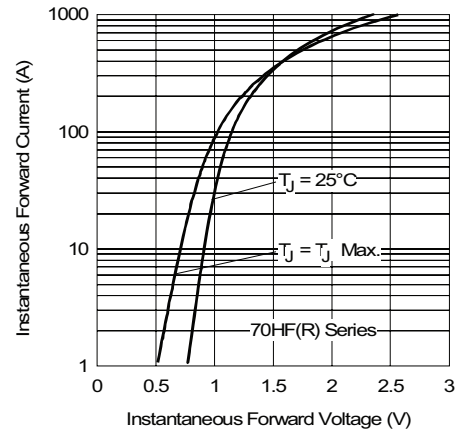


Fig. 11 - Forward Voltage Drop Characteristics

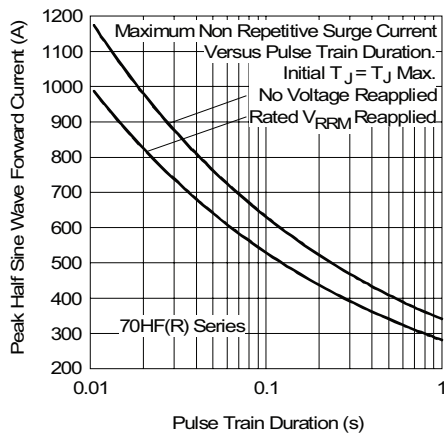


Fig. 10 - Maximum Non-Repetitive Surge Current

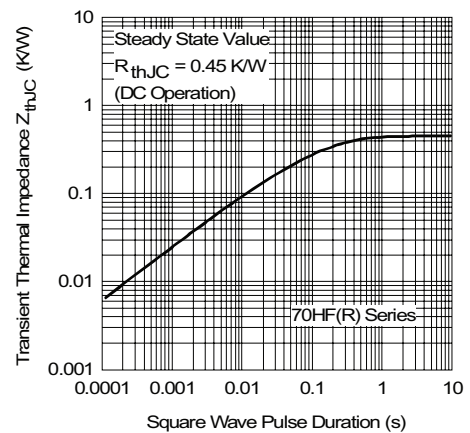


Fig. 12 - Thermal Impedance Z_{thJC} Characteristics

70HF(R) Series



Vishay High Power Products Standard Recovery Diodes
(Stud Version), 70 A

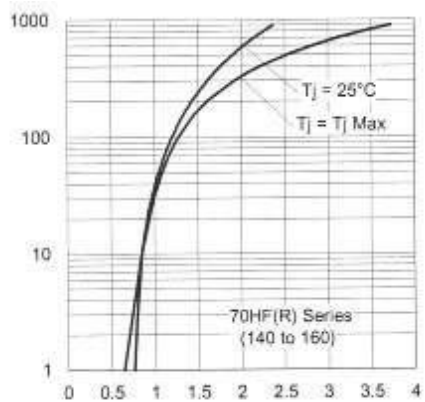


Fig. 13 - Forward Voltage Drop Characteristics

ORDERING INFORMATION TABLE

Device code	70	HF	R	160	M
	①	②	③	④	⑤
①	- 70 = Standard device 71 = Not isolated lead 72 = Isolated lead with silicone sleeve (red = Reverse polarity) (blue = Normal polarity)				
②	- HF = Standard diode				
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 = Stud base DO-203AB (DO-5) 1/4" 28UNF-2A • M = Stud base DO-203AB (DO-5) M6 x 1				

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95343



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.

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