

Pressfit Rectifier Diodes, 50 A



B-47

FEATURES

- Convenient pressfit package
- Available with and without leads
- High surge capabilities
- Fully characterized bulletin
- RoHS compliant
- Designed and qualified for industrial level


RoHS
COMPLIANT

PRODUCT SUMMARY

$I_{F(AV)}$	50 A
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MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		50	A
	T_C	150	°C
$I_{F(RMS)}$		79	A
I_{FSM}	50 Hz	714	A
	60 Hz	747	
I^2t	50 Hz	2546	A ² s
	60 Hz	2324	
$I^2\sqrt{t}$		25 455	A ² √s
V_{RRM}	Range	50 to 400	V
T_J		- 65 to 195	°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 $T_J = T_J$ MAXIMUM mA
8AF	05	50	75	7
	1	100	150	7
	2	200	300	5
	4	400	500	5

FORWARD CONDUCTION						
PARAMETER	SYMBOL	TEST CONDITIONS			VALUES	UNITS
Maximum average forward current at case temperature	I _{F(AV)}	180° conduction, half sine wave			50	A
					150	°C
Maximum RMS forward current	I _{F(RMS)}				79	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	714	A
		t = 8.3 ms			747	
		t = 10 ms	100 % V _{RRM} reapplied		600	
		t = 8.3 ms			628	
Maximum I ² t for fusing	I ² t	t = 10 ms	No voltage reapplied		2546	A ² s
		t = 8.3 ms			2324	
		t = 10 ms	100 % V _{RRM} reapplied		1800	
		t = 8.3 ms			1643	
Maximum I ² √t for fusing	I ² √t	t = 0.1 to 10 ms, no voltage reapplied			25 455	A ² √s
Low level value of threshold voltage	V _{F(TO)1}	(16.7 % x π x I _{F(AV)}) < I < π x I _{F(AV)} , T _J = T _J maximum			0.60	V
High level value of threshold voltage	V _{F(TO)2}	(π x I _{F(AV)}) < I < 20 x π x I _{F(AV)} , T _J = T _J maximum			0.68	
Low level value of forward slope resistance	r _{f1}	(16.7 % x π x I _{F(AV)}) < I < π x I _{F(AV)} , T _J = T _J maximum			6.66	mΩ
High level value of forward slope resistance	r _{f2}	(π x I _{F(AV)}) < I < 20 x π x I _{F(AV)} , T _J = T _J maximum			6.25	
Maximum forward voltage drop	V _{FM}	T _J = 25 °C, I _{FM} = π x rated I _{F(AV)}			1.45	V

THERMAL AND MECHANICAL SPECIFICATIONS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction operating and storage temperature range	T_J, T_{Stg}		- 65 to 195	°C
Maximum thermal resistance, junction to case	R_{thJC}	DC operation	0.60	K/W
Typical thermal resistance, case to heatsink	R_{thCS}	As per mounting details, see note ⁽¹⁾	0.50	
Approximate weight			10	g
			0.36	oz.
Case style		See dimensions - link at the end of datasheet	B-47	

Note

⁽¹⁾ Mounting: A 12.6 ± 0.02 mm (0.496 to 0.497") diameter hole should be drilled in heatsink, the leading edge chamfered to 0.038 mm (0.015") x 45°. The autodiode should then be press fitted, ensuring that the sides of the autodiode are kept parallel to the sides of the hole.

ΔR_{thJC} CONDUCTION				
CONDUCTION ANGLE	SINUSOIDAL CONDUCTION	RECTANGULAR CONDUCTION	TEST CONDITIONS	UNITS
180°	0.042	0.026	$T_J = T_J \text{ maximum}$	K/W
120°	0.045	0.043		
90°	0.06	0.06		
60°	0.10	0.10		
30°	0.15	0.15		

Note

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

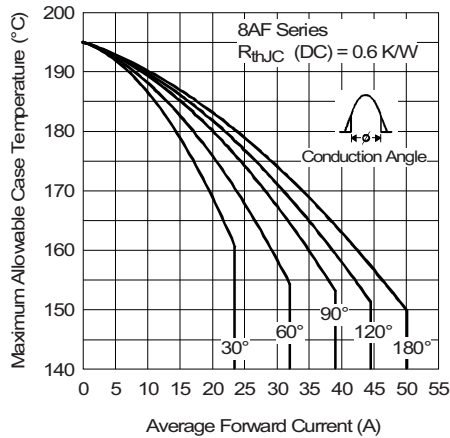


Fig. 1 - Current Ratings Characteristics

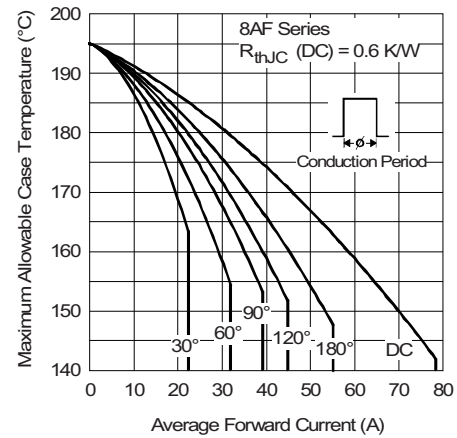


Fig. 2 - Current Ratings Characteristics

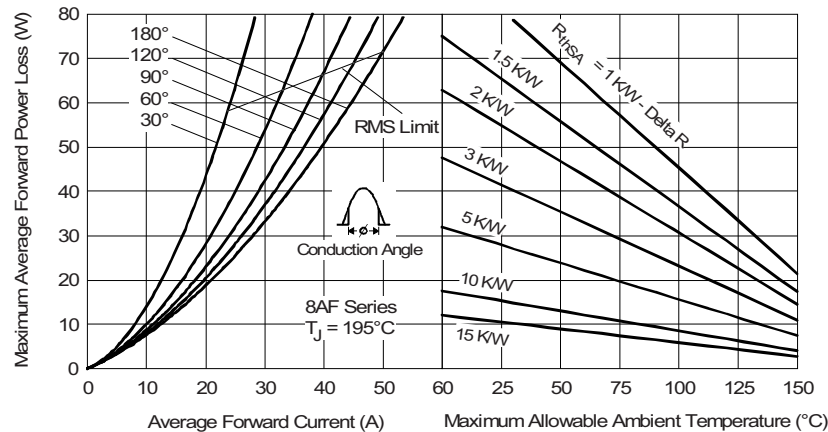


Fig. 3 - Forward Power Loss Characteristics

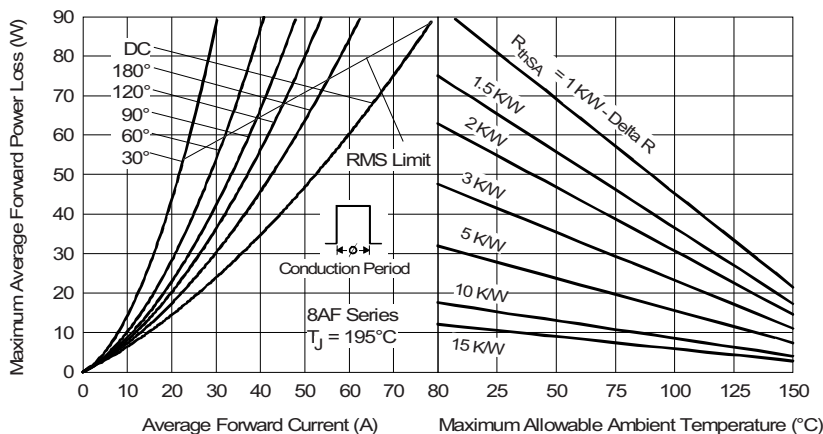


Fig. 4 - Forward Power Loss Characteristics

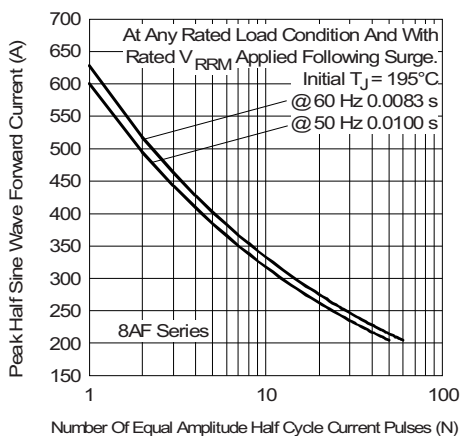


Fig. 5 - Maximum Non-Repetitive Surge Current

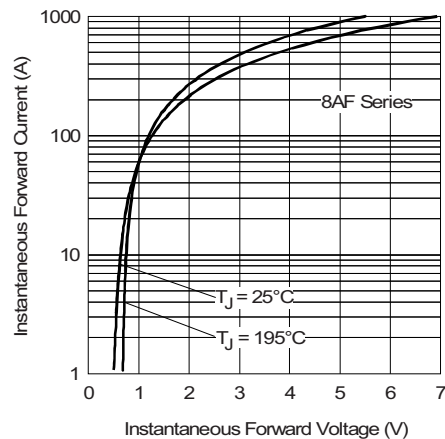


Fig. 7 - Forward Voltage Drop Characteristics

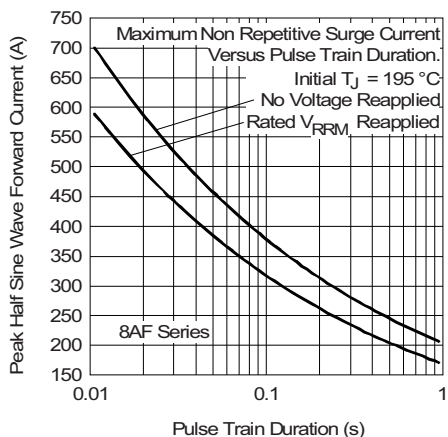


Fig. 6 - Maximum Non-Repetitive Surge Current

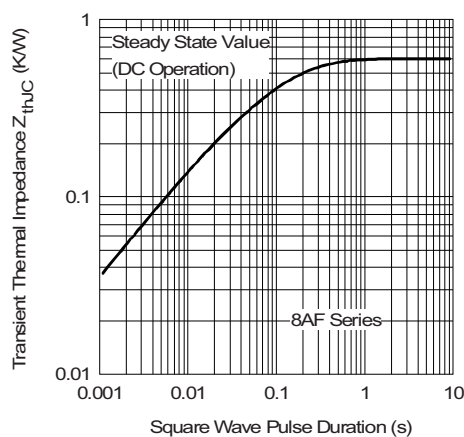


Fig. 8 - Thermal Impedance Z_{thJC} Characteristics

**ORDERING INFORMATION TABLE**

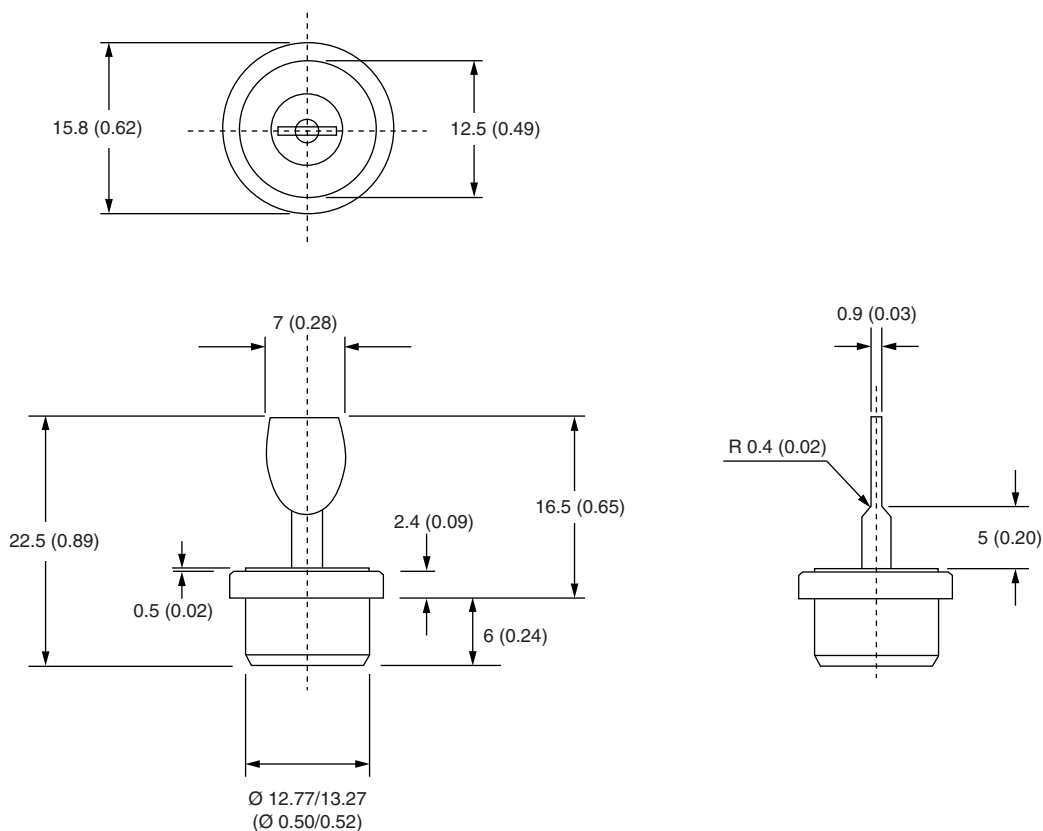
Device code	8AF	4	N	LV
	1	2	3	4

- | | | |
|---|---|--|
| 1 | - | Essential part number |
| 2 | - | Voltage code x 100 = V_{RRM} (see Voltage Ratings table) |
| 3 | - | <ul style="list-style-type: none">• N = Normal polarity (cathode to case)• R = Reverse polarity (anode to case) |
| 4 | - | <ul style="list-style-type: none">• PP = Without lead• LH = Horizontal lead• LV = Vertical lead |

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95330

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DIMENSIONS in millimeters (inches)





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