Single Phase Bridge (Power Modules), 25 A/35 A

D-34

FEATURES

- Universal, 3 way terminals: push-on, wrap around or solder
- High thermal conductivity package, electrically insulated case
- Center hole fixing
- Excellent power/volume ratio
- Nickel plated terminals solderable using lead (Pb)-free solder; solder alloy Sn/Ag/Cu (SAC305); solder temperature 260 °C to 275 °C
- UL E300359 approved
- Designed and qualified for industrial and consumer level
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

DESCRIPTION

A range of extremely compact, encapsulated single phase bridge rectifiers offering efficient and reliable operation. They are intended for use in general purpose and instrumentation applications.

PRIMARY CHARACTERISTICS	
I_O	25 A to 35 A
V_{RRM}	1400 V to 1600 V
Package	D-34
Circuit configuration	Single phase bridge

MAJOR RATINGS AND CHARACTERISTICS				
SYMBOL	CHARACTERISTICS	VALUES 26MB..A	VALUES 36MB..A	UNITS
I_O		25	35	A
	T_C	70	55	°C
I_{FSM}	50 Hz	400	475	A
	60 Hz	420	500	
I^2t	50 Hz	790	1130	A^2s
	60 Hz	725	1030	
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 MAXIMUM mA
26MB..A 36MB..A	140	1400	1500	2
	160	1600	1700	

FORWARD CONDUCTION

PARAMETER	SYMBOL	TEST CONDITIONS			VALUES 26MB..A	VALUES 36MB..A	UNITS
Maximum DC output current at case temperature	I_O	Resistive or inductive load			25	35	A
		Capacitive load			20	28	
					65	60	°C
Maximum peak, one cycle non-repetitive forward current	I_{FSM}	t = 10 ms	No voltage reapplied	Initial $T_J = T_J$ maximum	400	475	A
		t = 8.3 ms			420	500	
		t = 10 ms	100 % V_{RRM} reapplied		335	400	
		t = 8.3 ms			350	420	
Maximum I^2t for fusing	I^2t	t = 10 ms	No voltage reapplied		790	1130	A^2s
		t = 8.3 ms			725	1030	
		t = 10 ms	100 % V_{RRM} reapplied		560	800	
		t = 8.3 ms			512	730	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	I^2t for time $t_x = I^2\sqrt{t} \times \sqrt{t_x}$; $0.1 \le t_x \le 10$ ms, V_{RRM} = 0 V			5.6	11.3	$kA^2\sqrt{s}$
Low level of threshold voltage	$V_{F(TO)1}$	(16.7 % x π x $I_{F(AV)}$ < I < π x $I_{F(AV)}$), T_J maximum			0.70	0.74	V
High level of threshold voltage	$V_{F(TO)2}$	(I > π x $I_{F(AV)}$), T_J maximum			0.75	0.79	
Low level forward slope resistance	r_{t1}	(16.7 % x π x $I_{F(AV)}$ < I < π x $I_{F(AV)}$), T_J maximum			7.0	5.5	mΩ
High level forward slope resistance	r_{t2}	(I > π x $I_{F(AV)}$), T_J maximum			6.4	5.2	
Maximum forward voltage drop	V_{FM}	T_J = 25 °C, t_p = 400 µs, I_{FM} = 40 A_{pk} (26MB), I_{FM} = 55 A_{pk} (36MB)			1.25	1.3	V
Maximum DC reverse current per diode	I_{RRM}	T_J = 25 °C, at V_{RRM}			10	10	µA
RMS isolation voltage base plate	V_{ISOL}	f = 50 Hz, t = 1 s			2700	2700	V

THERMAL AND MECHANICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES 26MB-A	VALUES 36MB-A	UNITS
Junction and storage temperature range	T_J, T_{Stg}		-55 to 150		°C
Maximum thermal resistance, junction to case per bridge	R_{thJC}		1.7	1.35	K/W
Maximum thermal resistance, case to heatsink	R_{thCS}	Mounting surface, smooth, flat and greased	0.2		
Mounting torque ± 10 %		Bridge to heatsink	2.0		Nm
Approximate weight			20		g

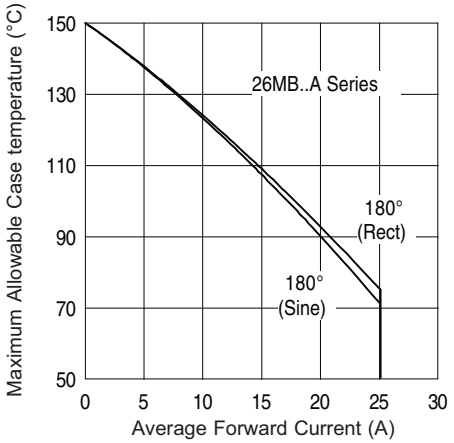


Fig. 1 - Current Ratings Characteristics

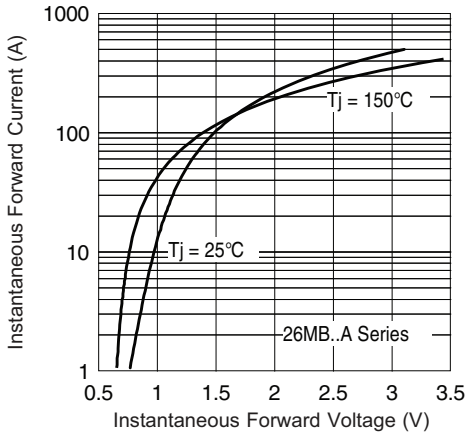


Fig. 2 - Forward Voltage Drop Characteristics

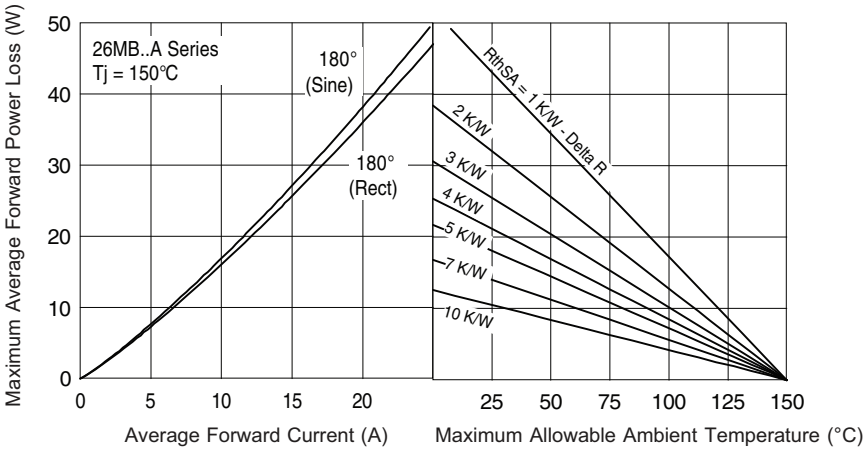


Fig. 3 - Total Power Loss Characteristics

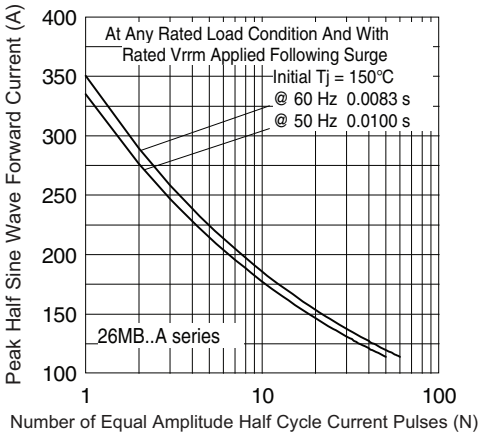


Fig. 4 - Maximum Non-Repetitive Surge Current

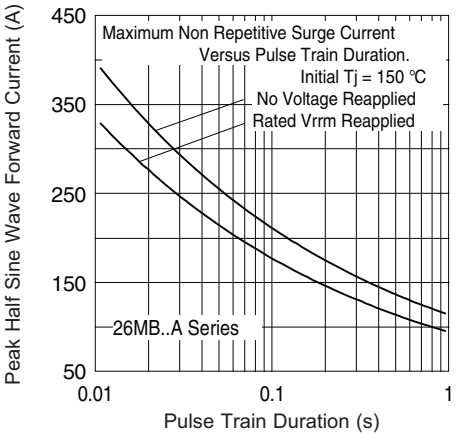


Fig. 5 - Maximum Non-Repetitive Surge Current

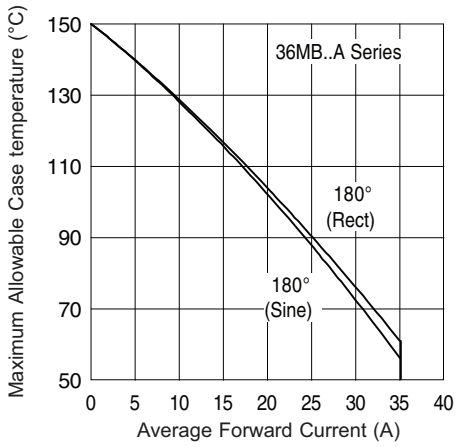


Fig. 6 - Current Ratings Characteristics

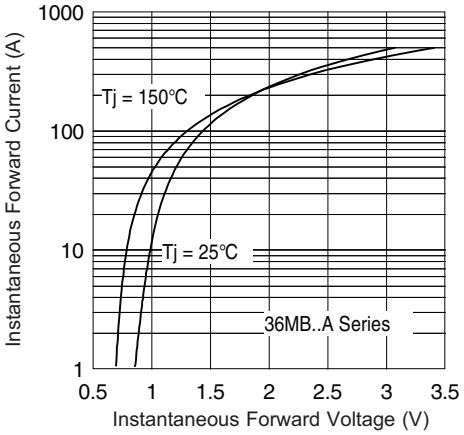


Fig. 7 - Forward Voltage Drop Characteristics

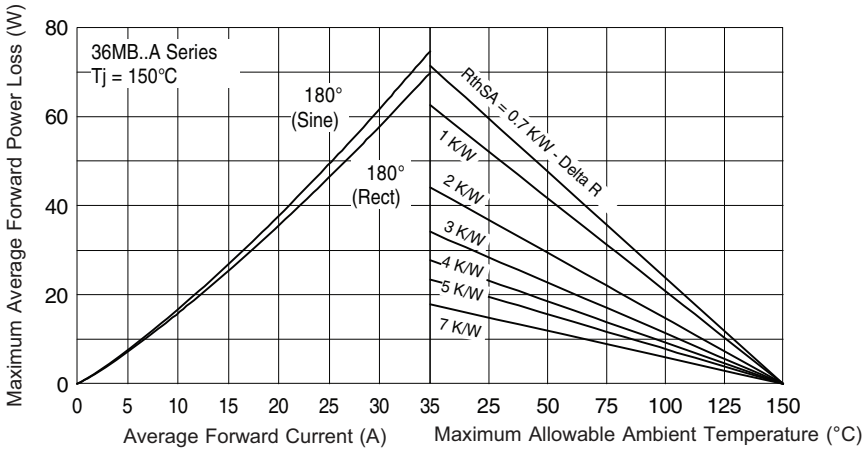


Fig. 8 - Total Power Loss Characteristics

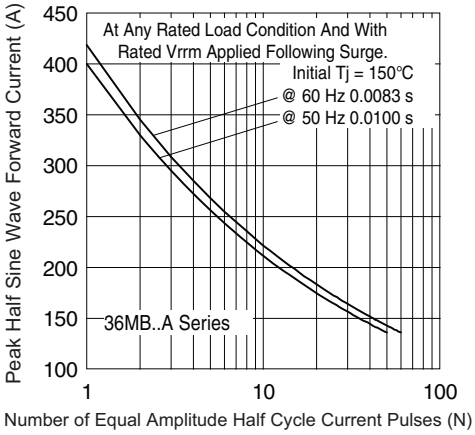


Fig. 9 - Maximum Non-Repetitive Surge Current

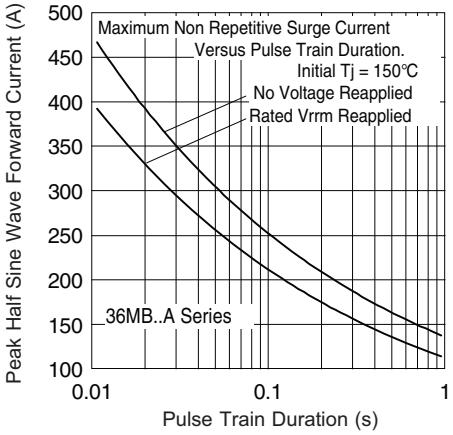


Fig. 10 - Maximum Non-Repetitive Surge Current

ORDERING INFORMATION TABLE

Device code

VS-	36	MB	160	A
1	2	3	4	5

1 - Vishay Semiconductors product

2 - Current rating code — 26 = 25 A (average), 36 = 35 A (average)

3 - Circuit configuration:

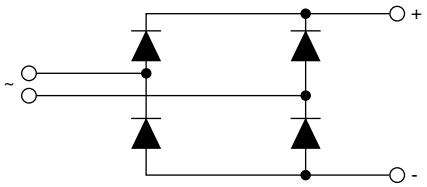
MB = Single phase european coding

4 - Voltage code x 10 = V_{RRM}

5 - Diode bridge rectifier:

A = 26 MB, 36 MB series

CIRCUIT CONFIGURATION



LINKS TO RELATED DOCUMENTS	
Dimensions	www.vishay.com/doc?95326

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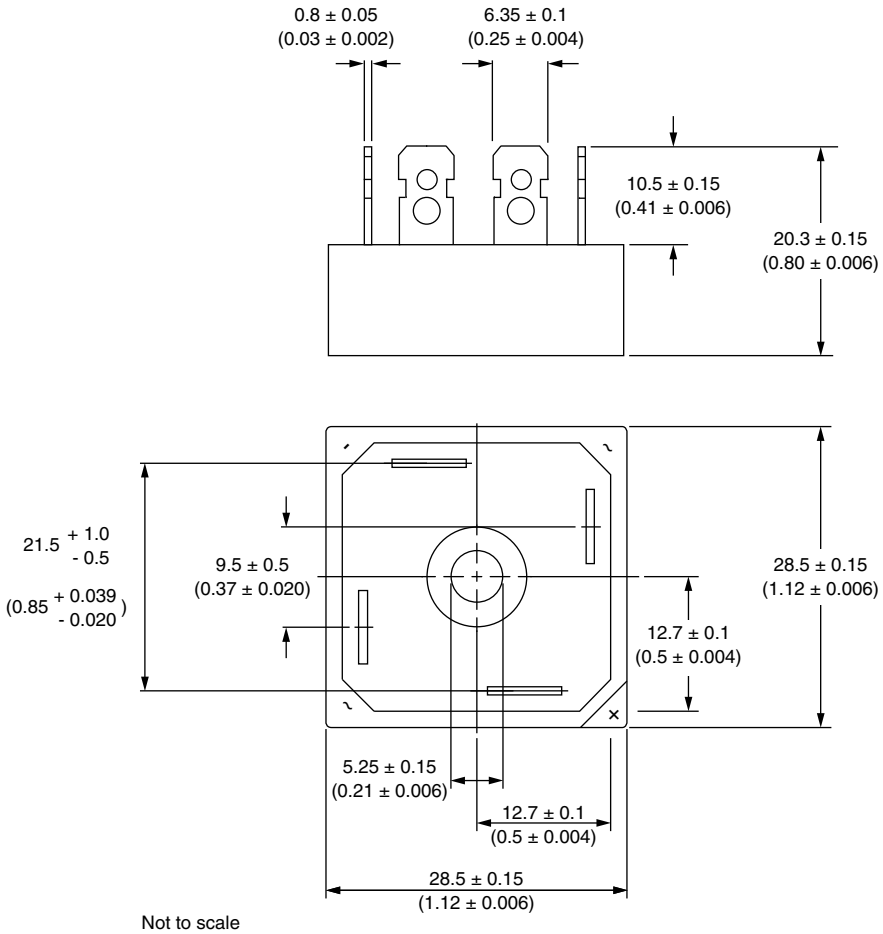
DIMENSIONS in millimeters (inches)



Suggested plugging force:
200 N max; axially applied to fast-on terminals

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