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
- UL E300359 approved
- Nickel plated terminals solderable using lead (Pb)-free solder; solder alloy Sn/Ag/Cu (SAC305); solder temperature 260 °C to 275 °C
- Designed and qualified for industrial 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}	200 V to 1200 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	65	60	°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	200 to 1200		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
26MB..A, 36MB..A	05	50	75	2
	06	60	100	
	10	100	150	
	20	200	275	
	40	400	500	
	60	600	725	
	80	800	900	
	100	1000	1100	
	120	1200	1300	

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 $t_x = I_2\sqrt{\tau} \times \sqrt{\tau_x}$; $0.1 \le t_x \le 10$ ms, V_{RRM} = 0 V			5.6	11.3	$kA^2\sqrt{s}$
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 maximum			0.76	0.79	V
High level value of threshold voltage	$V_{F(TO)2}$	(I > π x $I_{F(AV)}$), T_J maximum			0.92	0.96	
Low level forward slope resistance	r_{t1}	(16.7 % x π x $I_{F(AV)}$ < I < π x $I_{F(AV)}$), T_J maximum			6.8	5.8	mΩ
High level forward slope resistance	r_{t2}	(I > π x $I_{F(AV)}$), T_J maximum			5.0	4.5	
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)			1.11	1.14	V
Maximum DC reverse current	I_{RRM}	T_J = 25 °C, per diode at V_{RRM}			10		µA
RMS isolation voltage base plate	V_{INS}	f = 50 Hz, t = 1 s			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	1.2	K/W
Maximum thermal resistance, case to heatsink	R_{thCS}	Mounting surface, smooth, flat, and greased	0.2		
Approximate weight			20		g
Mounting torque ± 10 %		Bridge to heatsink	2.0		Nm

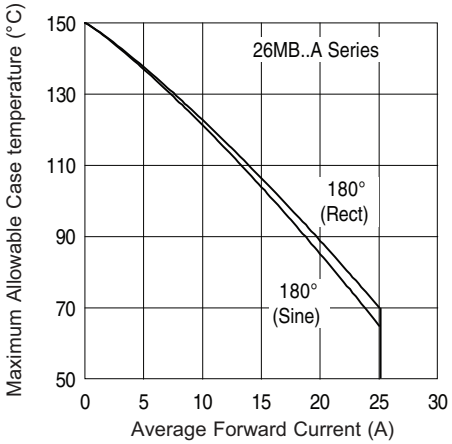


Fig. 1 - Current Ratings Characteristics

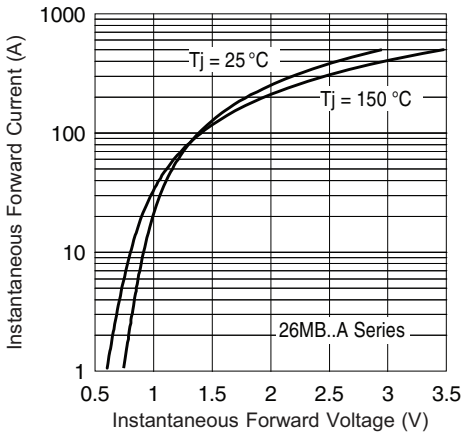


Fig. 2 - Forward Voltage Drop Characteristics
Maximum Allowable Ambient Temperature

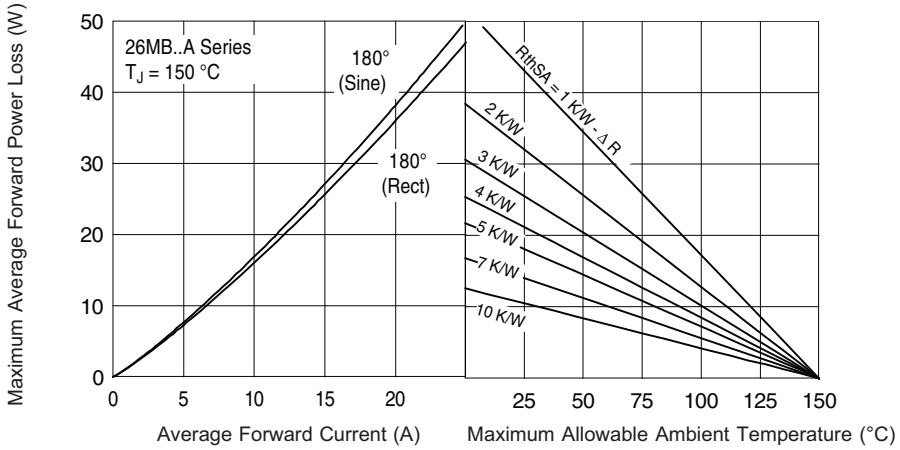


Fig. 3 - Total Power Loss Characteristics

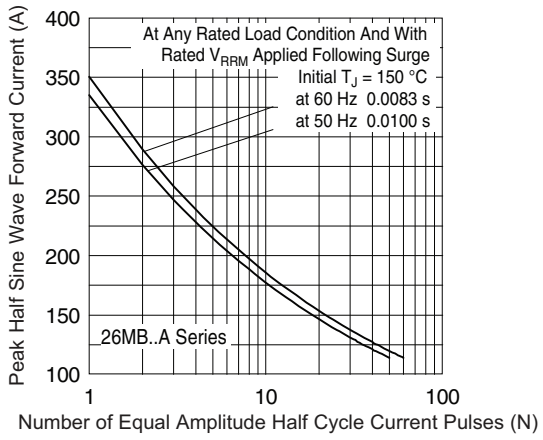


Fig. 4 - Maximum Non-Repetitive Surge Current

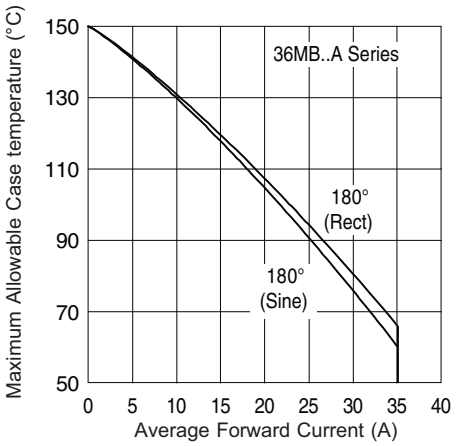


Fig. 6 - Current Ratings Characteristics

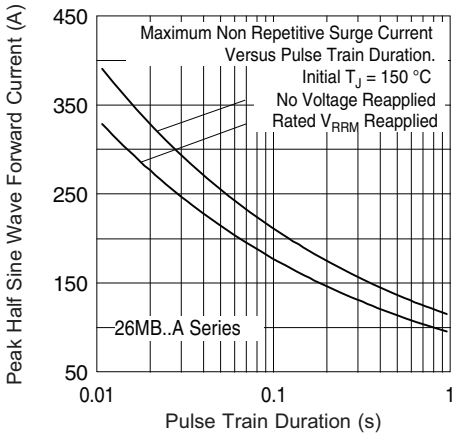


Fig. 5 - Maximum Non-Repetitive Surge Current

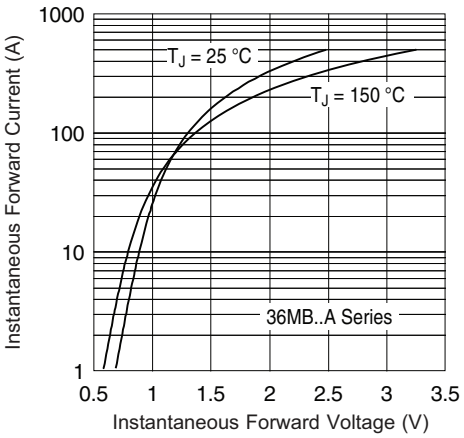


Fig. 7 - Forward Voltage Drop Characteristics

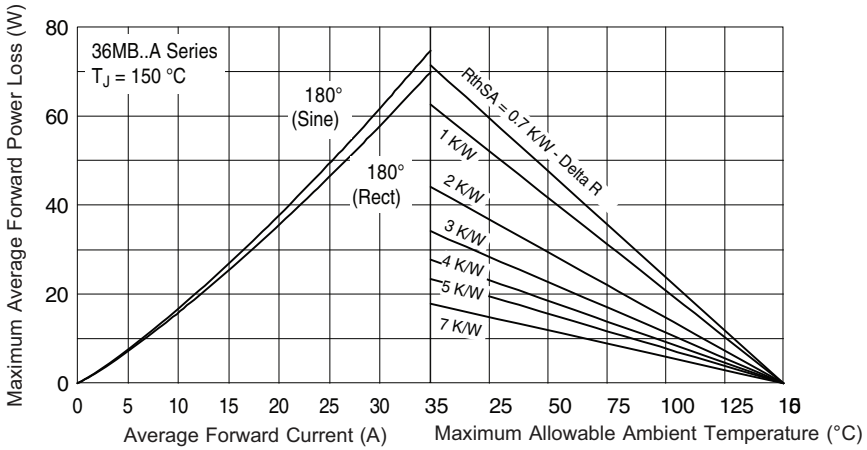


Fig. 8 - Total Power Loss Characteristics

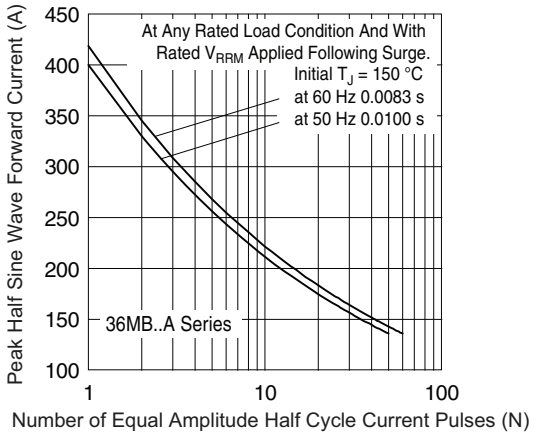


Fig. 9 - Maximum Non-Repetitive Surge Current

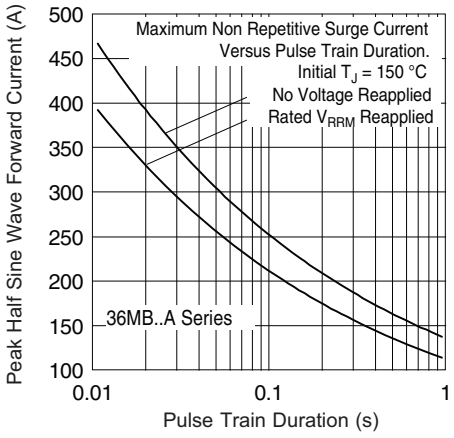


Fig. 10 - Maximum Non-Repetitive Surge Current

ORDERING INFORMATION TABLE

Device code

VS-	36	MB	120	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:

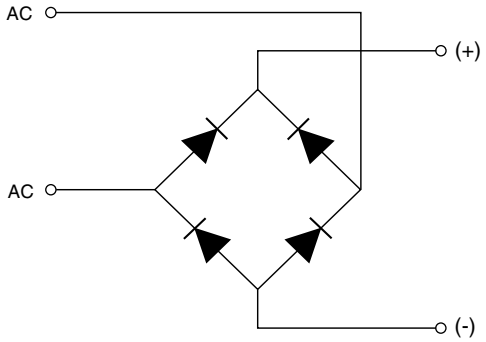
MB = Single phase european coding

4 - Voltage code x 10 = V_{RRM}

5 - Diode bridge rectifier:

A = 26 MB, 36 MB series

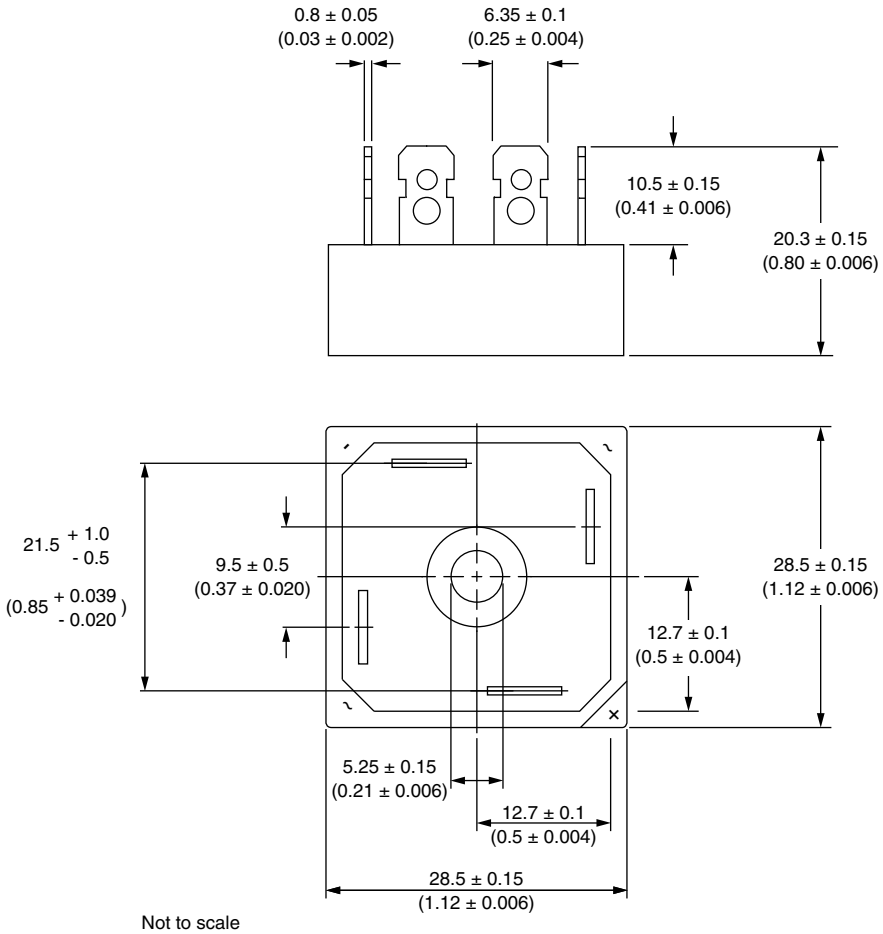
CIRCUIT CONFIGURATION



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

D-34

DIMENSIONS in millimeters (inches)



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

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