


# Single Phase Bridge Rectifier, 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/doc299912](http://www.vishay.com/doc299912)


**RoHS**  
COMPLIANT

## PRIMARY CHARACTERISTICS

$I_O$	25 A, 35 A
$V_{RRM}$	200 V to 1200 V
Package	D-34
Circuit configuration	Single phase bridge

## 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.

## 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 <sup>2</sup> s
	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 <sub>O</sub>	Resistive or inductive load			25	35	A
		Capacitive load			20	28	
					65	60	°C
Maximum peak, one-cycle non-repetitive forward current	I <sub>FSM</sub>	t = 10 ms	No voltage reapplied	Initial T <sub>J</sub> = T <sub>J</sub> maximum	400	475	A
		t = 8.3 ms			420	500	
		t = 10 ms	100 % V <sub>RRM</sub> reapplied		335	400	
		t = 8.3 ms			350	420	
Maximum I <sup>2</sup> t for fusing	I <sup>2</sup> t	t = 10 ms	No voltage reapplied		790	1130	A <sup>2</sup> s
		t = 8.3 ms			725	1030	
		t = 10 ms	100 % V <sub>RRM</sub> reapplied		560	800	
		t = 8.3 ms			512	730	
Maximum I <sup>2</sup> √t for fusing	I <sup>2</sup> √t	I <sup>2</sup> t for time t <sub>x</sub> = I <sub>2</sub> √τ × √t <sub>x</sub> ; 0.1 ≤ t <sub>x</sub> ≤ 10 ms, V <sub>RRM</sub> = 0 V			5.6	11.3	kA <sup>2</sup> √s
Low level value of threshold voltage	V <sub>F(TO)1</sub>	(16.7 % × π × I <sub>F(AV)</sub> ) < I < π × I <sub>F(AV)</sub> , T <sub>J</sub> maximum			0.76	0.79	V
High level value of threshold voltage	V <sub>F(TO)2</sub>	(I > π × I <sub>F(AV)</sub> ), T <sub>J</sub> maximum			0.92	0.96	
Low level forward slope resistance	r <sub>t1</sub>	(16.7 % × π × I <sub>F(AV)</sub> ) < I < π × I <sub>F(AV)</sub> , T <sub>J</sub> maximum			6.8	5.8	mΩ
High level forward slope resistance	r <sub>t2</sub>	(I > π × I <sub>F(AV)</sub> ), T <sub>J</sub> maximum			5.0	4.5	
Maximum forward voltage drop	V <sub>FM</sub>	T <sub>J</sub> = 25 °C, t <sub>p</sub> = 400 μs, I <sub>FM</sub> = 40 A <sub>pk</sub> (26MB), I <sub>FM</sub> = 55 A <sub>pk</sub> (36MB)			1.11	1.14	V
Maximum DC reverse current	I <sub>RRM</sub>	T <sub>J</sub> = 25 °C, per diode at V <sub>RRM</sub>			10		μA
RMS isolation voltage base plate	V <sub>INS</sub>	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 <sub>J</sub> , T <sub>Stg</sub>		-55 to 150		°C
Maximum thermal resistance junction to case per bridge	R <sub>thJC</sub>		1.7	1.2	K/W
Maximum thermal resistance, case to heatsink	R <sub>thCS</sub>	Mounting surface, smooth, flat, and greased	0.2		
Approximate weight			20		g
Mounting torque ± 10 %		Bridge to heatsink	2.0		Nm

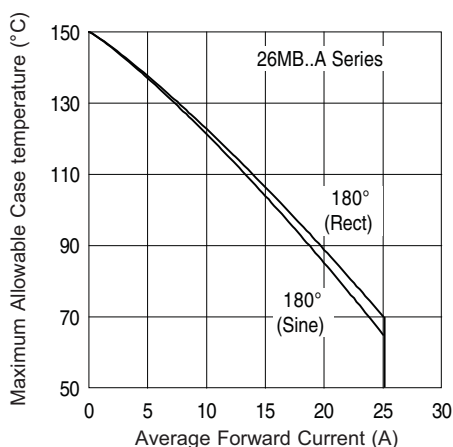
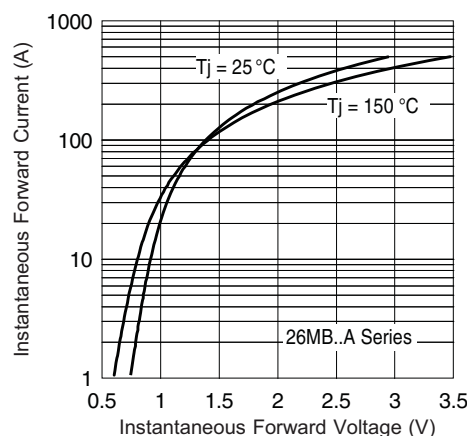


Fig. 1 - Current Ratings Characteristics


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

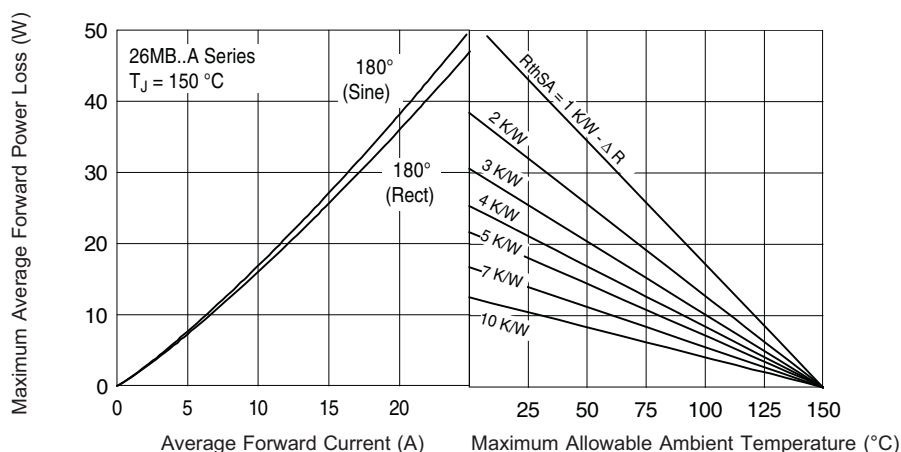


Fig. 3 - Total Power Loss Characteristics

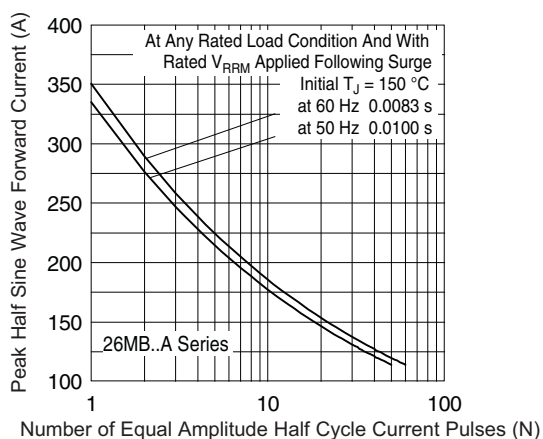


Fig. 4 - Maximum Non-Repetitive Surge Current

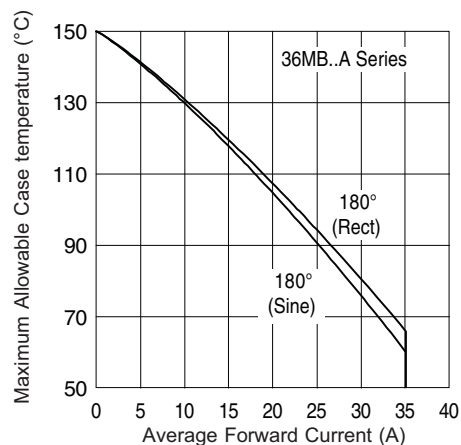


Fig. 6 - Current Ratings Characteristics

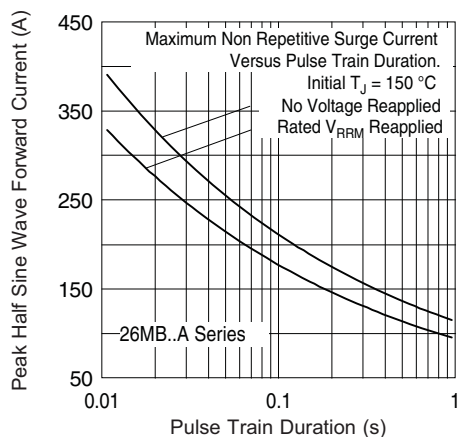


Fig. 5 - Maximum Non-Repetitive Surge Current

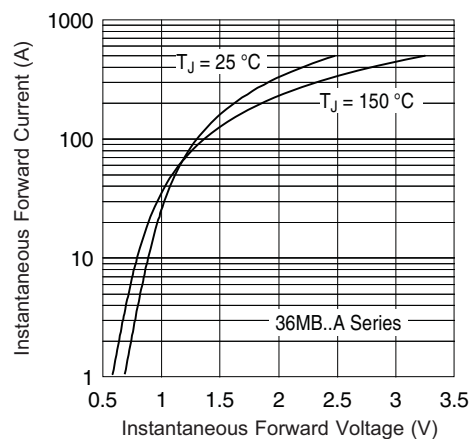


Fig. 7 - Forward Voltage Drop Characteristics

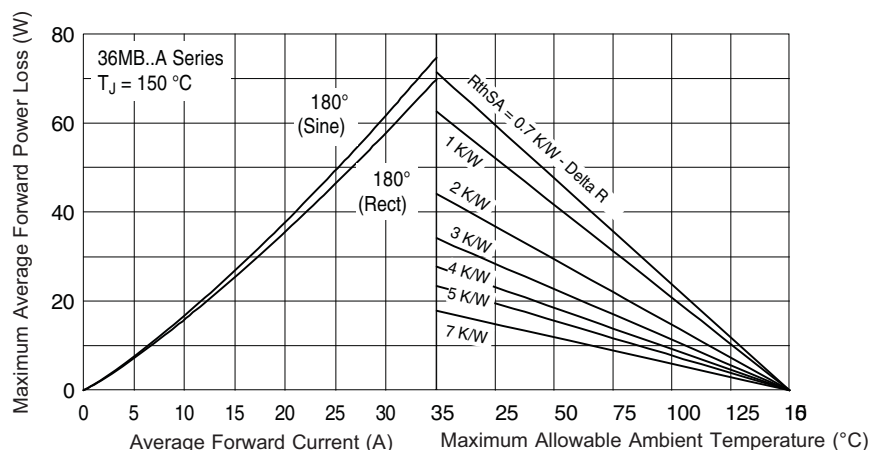


Fig. 8 - Total Power Loss Characteristics

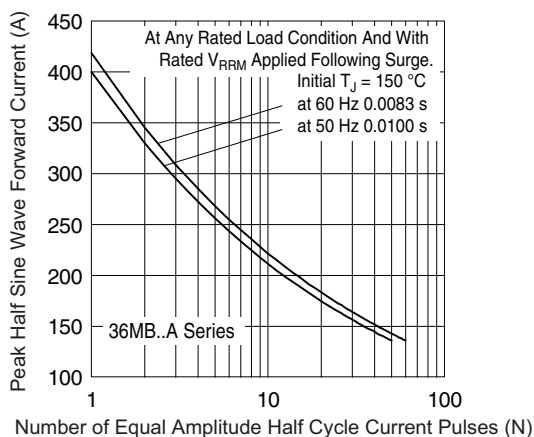


Fig. 9 - Maximum Non-Repetitive Surge Current

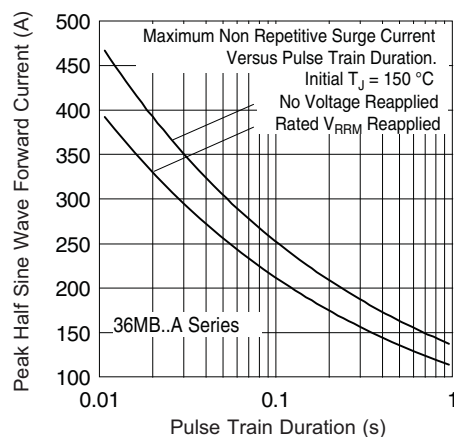


Fig. 10 - Maximum Non-Repetitive Surge Current

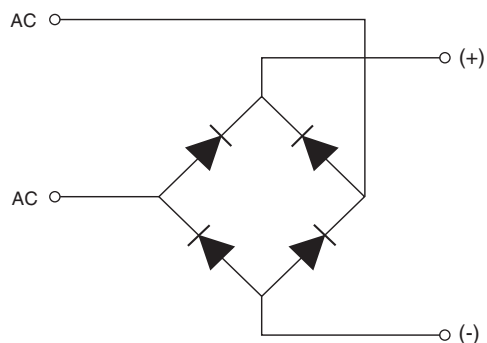
## ORDERING INFORMATION TABLE

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**

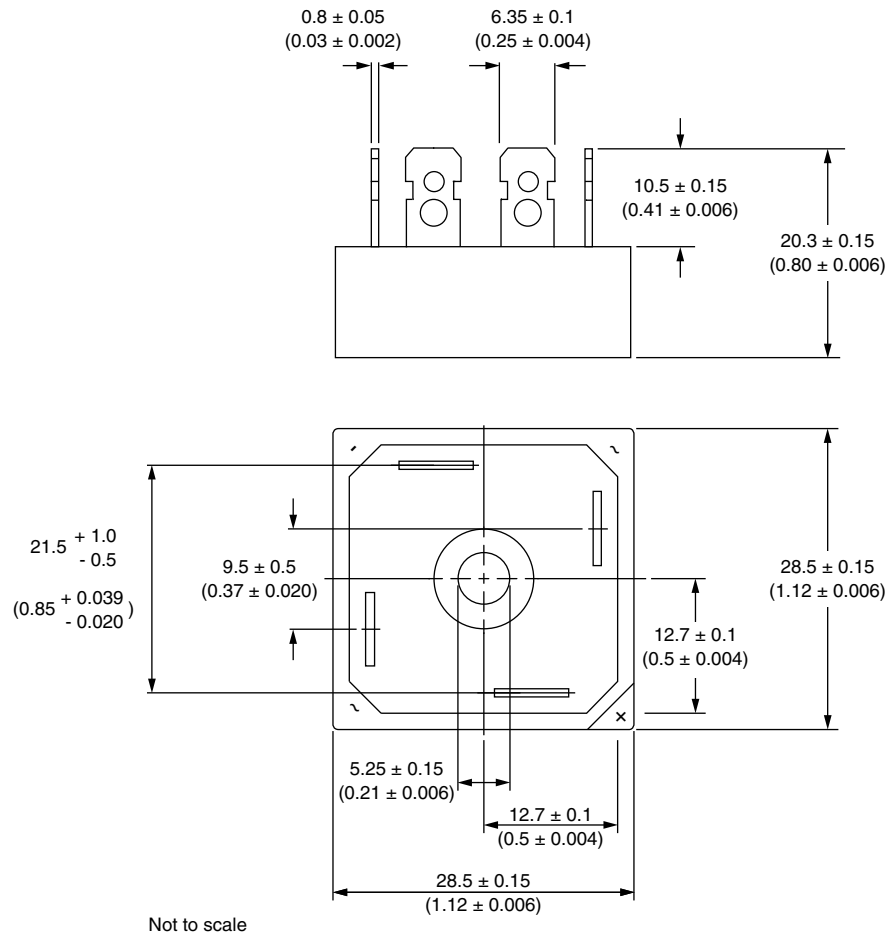


**LINKS TO RELATED DOCUMENTS**

Dimensions	
	<a href="http://www.vishay.com/doc?95326">www.vishay.com/doc?95326</a>

## D-34

**DIMENSIONS** in millimeters (inches)



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



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