



**THE DATASHEET OF
VS-36MB160A**



Single Phase Bridge Rectifier, 25 A, 35 A



D-34



RoHS
COMPLIANT

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

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, 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 ² s
	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	140	1400	1500	2
36MB..A	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 ² t for fusing	I ² t	t = 10 ms	No voltage reapplied	Initial T _J = T _J maximum	790	1130	A ² s
		t = 8.3 ms			725	1030	
		t = 10 ms	100 % V _{RRM} reapplied		560	800	
		t = 8.3 ms			512	730	
Maximum I ² √t for fusing	I ² √t	I ² t for time t _x = I ² √t × √t _x ; 0.1 ≤ t _x ≤ 10 ms, V _{RRM} = 0 V		5.6	11.3	kA ² √s	
Low level of threshold voltage	V _{F(TO)1}	(16.7 % × π × I _{F(AV)} < I < π × I _{F(AV)}), T _J maximum		0.70	0.74	V	
High level of threshold voltage	V _{F(TO)2}	(I > π × I _{F(AV)}), T _J maximum		0.75	0.79		
Low level forward slope resistance	r _{t1}	(16.7 % × π × I _{F(AV)} < I < π × I _{F(AV)}), T _J maximum		7.0	5.5	mΩ	
High level forward slope resistance	r _{t2}	(I > π × 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

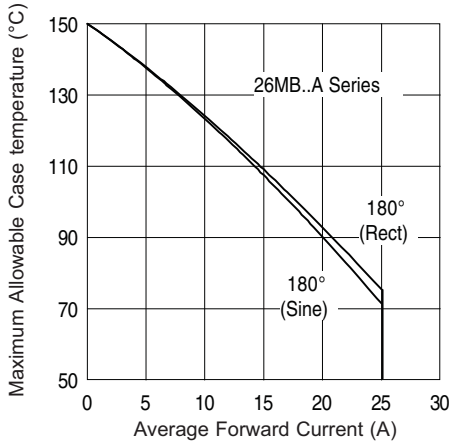


Fig. 1 - Current Ratings Characteristics

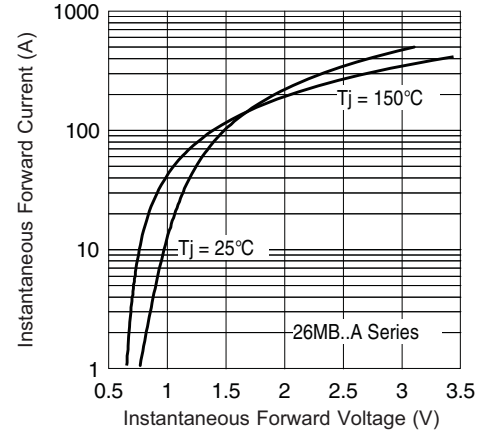


Fig. 2 - Forward Voltage Drop Characteristics

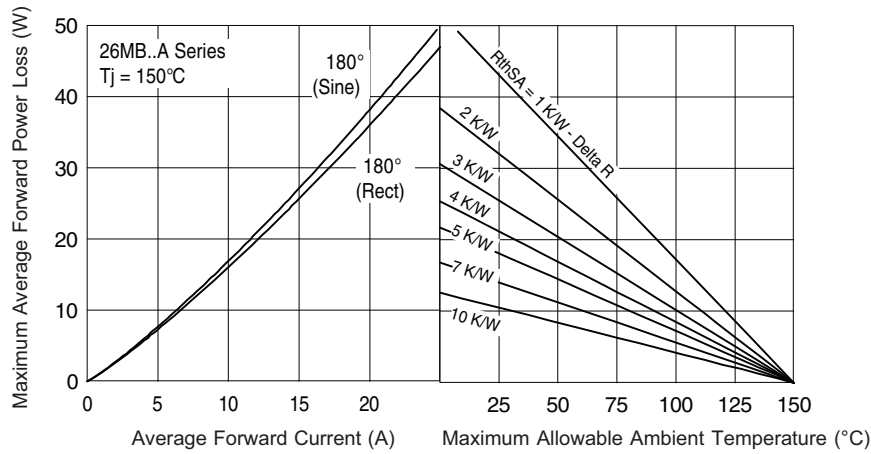


Fig. 3 - Total Power Loss Characteristics

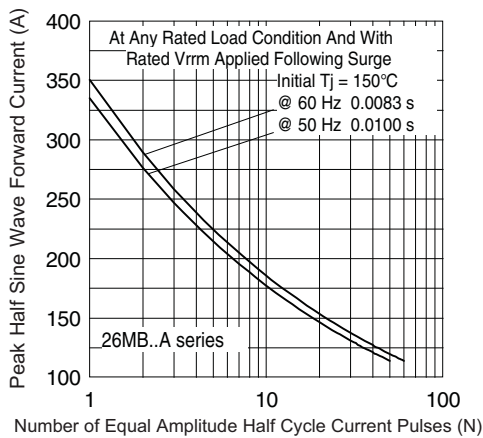


Fig. 4 - Maximum Non-Repetitive Surge Current

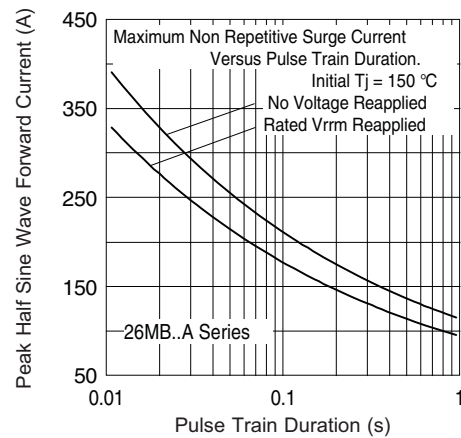


Fig. 5 - Maximum Non-Repetitive Surge Current

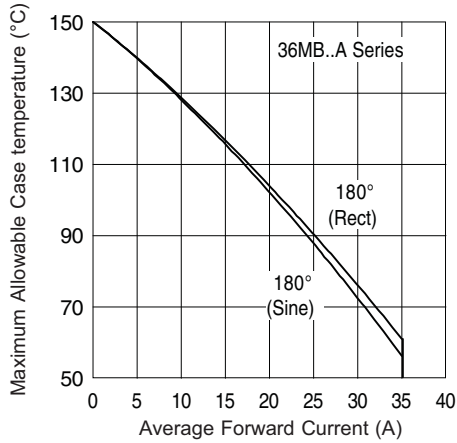


Fig. 6 - Current Ratings Characteristics

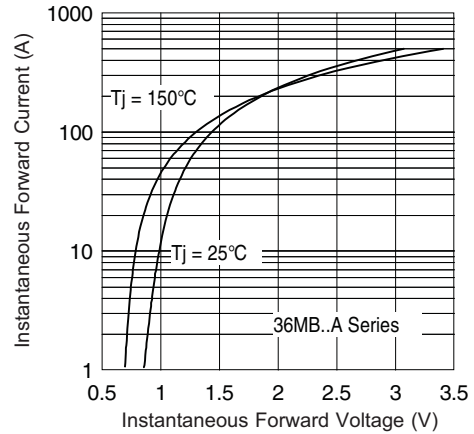


Fig. 7 - Forward Voltage Drop Characteristics

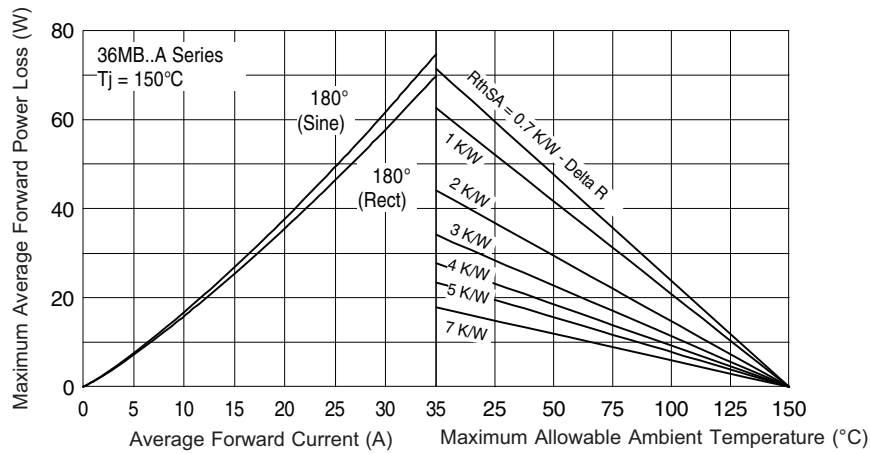


Fig. 8 - Total Power Loss Characteristics

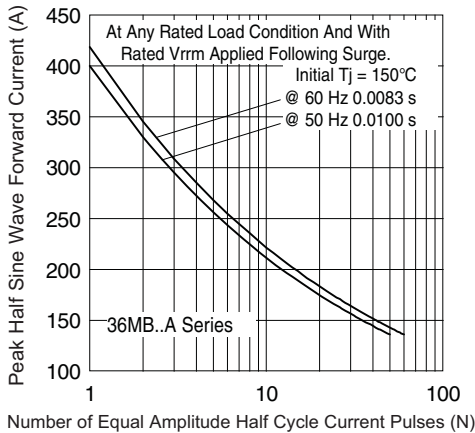


Fig. 9 - Maximum Non-Repetitive Surge Current

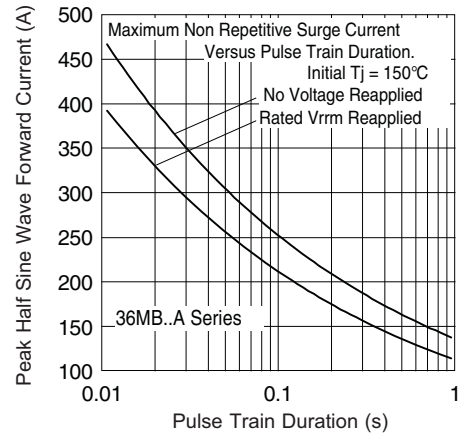
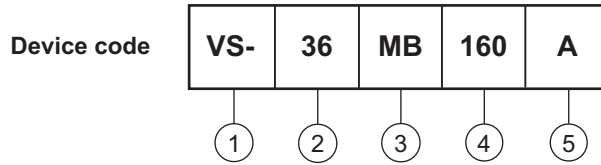


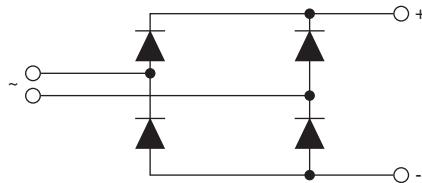
Fig. 10 - Maximum Non-Repetitive Surge Current

ORDERING INFORMATION TABLE



- 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

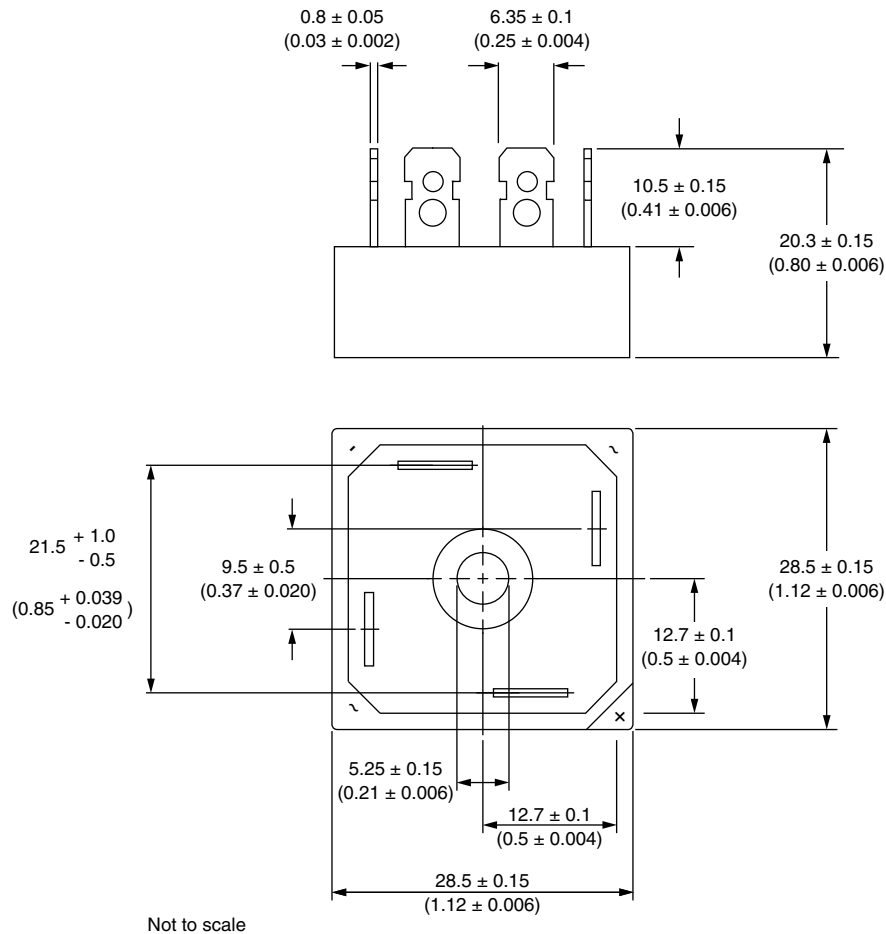
CIRCUIT CONFIGURATION



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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