

Three Phase Bridge Rectifier, 25 A, 35 A


D-63

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 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 three 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}	50 V to 1600 V
Package	D-63
Circuit configuration	Three phase bridge

MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES 26MT..	VALUES 36MT..	UNITS
I_O		25	35	A
	T_C	70	60	°C
I_{FSM}	50 Hz	360	475	A
	60 Hz	375	500	
I^2t	50 Hz	635	1130	A ² s
	60 Hz	580	1030	
V_{RRM}		50 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
VS-26MT.. VS-36MT..	05	50	75	2
	10	100	150	
	20	200	275	
	40	400	500	
	60	600	725	
	80	800	900	
	100	1000	1100	
	120	1200	1300	
	140	1400	1500	
	160	1600	1700	

**FORWARD CONDUCTION**

PARAMETER	SYMBOL	TEST CONDITIONS			VALUES 26MT..	VALUES 36MT..	UNITS
Maximum DC output current at T _C	I _O	120° rect. conduction angle			25	35	A
					70	60	°C
Maximum peak, one-cycle non-repetitive forward current	I _{FSM}	t = 10 ms	No voltage reapplied	Initial T _J = T _J maximum	360	475	A
		t = 8.3 ms			375	500	
		t = 10 ms	100 % V _{RRM} reapplied		300	400	
		t = 8.3 ms			314	420	
Maximum I ² t for fusing	I ² t	t = 10 ms	No voltage reapplied		635	1130	A ² s
		t = 8.3 ms			580	1030	
		t = 10 ms	100 % V _{RRM} reapplied		450	800	
		t = 8.3 ms			410	730	
Maximum I ² √t for fusing	I ² √t	I ² t for time t _x = I ² √t x √t _x ; 0.1 ≤ t _x ≤ 10 ms, V _{RRM} = 0 V			6360	11 300	A ² √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			0.88	0.86	V
High level of threshold voltage	V _{F(TO)2}	(I > π x I _{F(AV)}), T _J maximum			1.13	1.03	
Low level forward slope resistance	r _{t1}	(16.7 % x π x I _{F(AV)}) < I < π x I _{F(AV)} , T _J maximum			7.9	6.3	mΩ
High level forward slope resistance	r _{t2}	(I > π x I _{F(AV)}), T _J maximum			5.2	5.0	
Maximum forward voltage drop	V _{FM}	T _J = 25 °C, I _{FM} = 40 A _{pk} - per single junction			1.26	1.19	V
Maximum DC reverse current	I _{RRM}	T _J = 25 °C, per junction at rated V _{RRM}			100		μA
RMS isolation voltage	V _{INS}	T _J = 25 °C, all terminal shorted; f = 50 Hz, t = 1 s			2700		V

THERMAL - MECHANICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES 26MT	VALUES 36MT	UNITS
Maximum junction and storage temperature range	T_J , T_{Stg}		-55 to +150		°C
Maximum thermal resistance, junction to case	R_{thJC}	DC operation per bridge (based on total power loss of bridge)	1.42	1.35	K/W
Maximum thermal resistance, case to heatsink	R_{thCS}	Mounting surface, smooth, flat and greased	0.2	0.2	
Approximate weight			20		g
Mounting torque $\pm 10\%$		Bridge to heatsink with screw M4	2.0		Nm

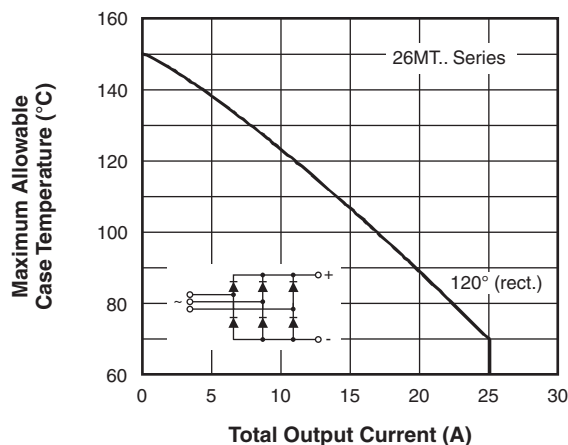


Fig. 1 - Current Ratings Characteristics

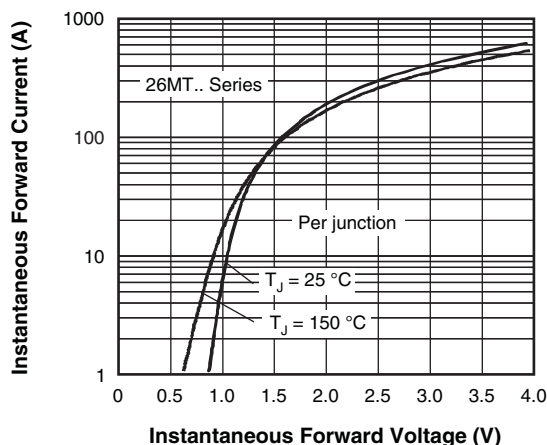


Fig. 2 - Forward Voltage Drop Characteristics

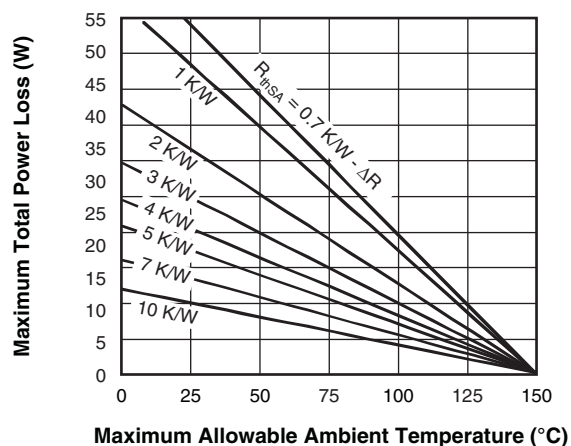
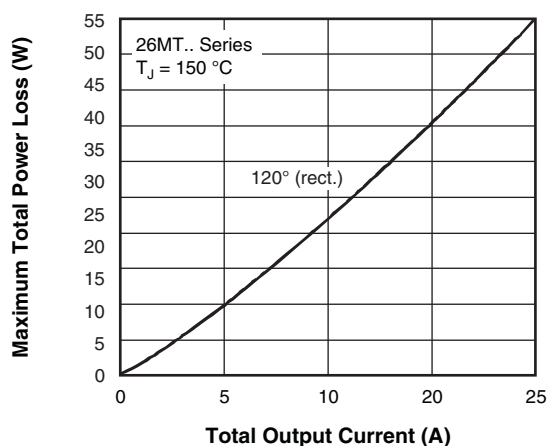


Fig. 3 - Total Power Loss Characteristics

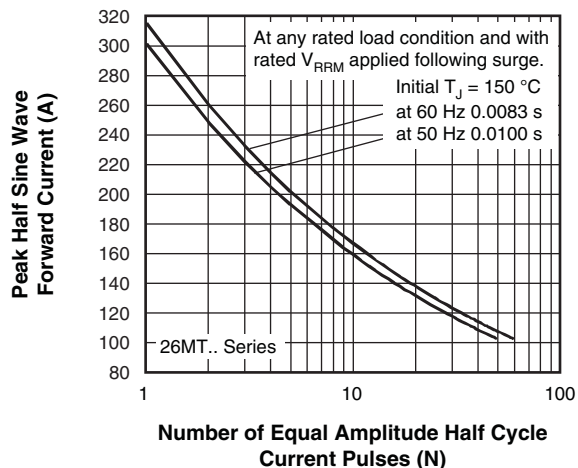


Fig. 4 - Maximum Non-Repetitive Surge Current

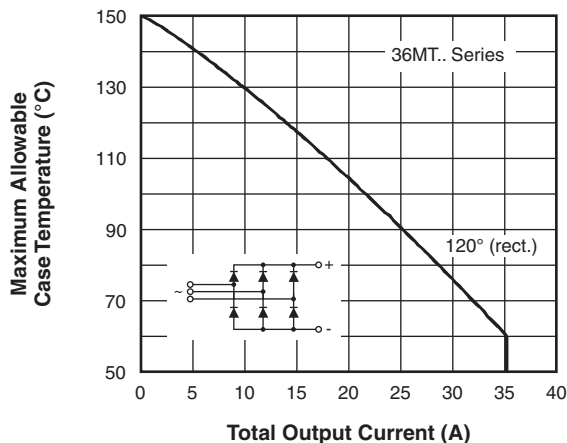


Fig. 6 - Current Ratings Characteristics

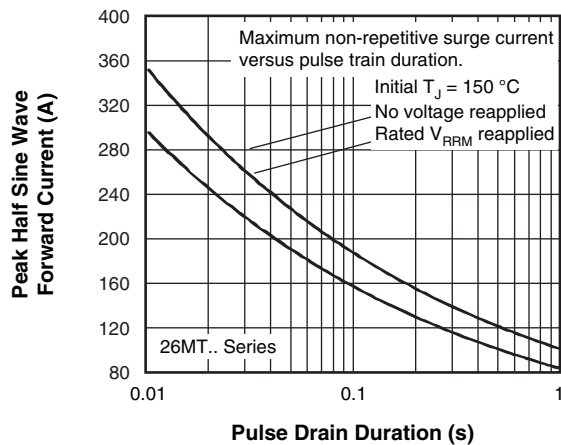


Fig. 5 - Maximum Non-Repetitive Surge Current

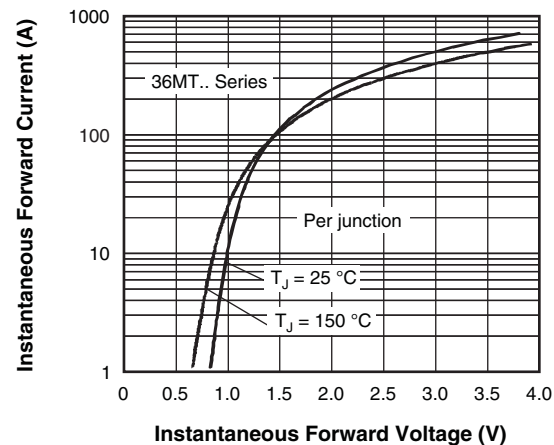


Fig. 7 - Forward Voltage Drop Characteristics

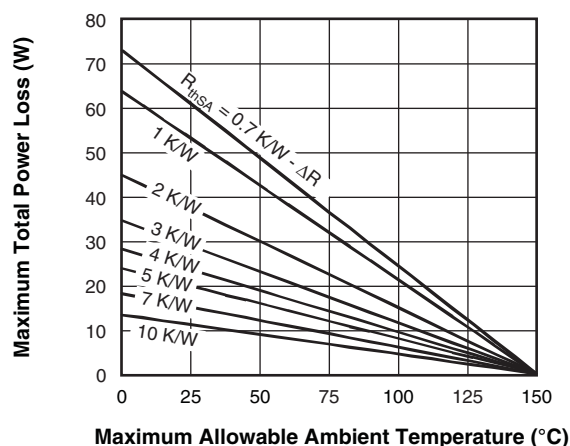
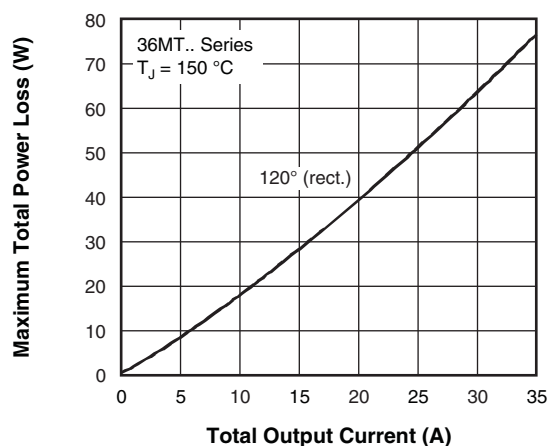


Fig. 8 - Total Power Loss Characteristics

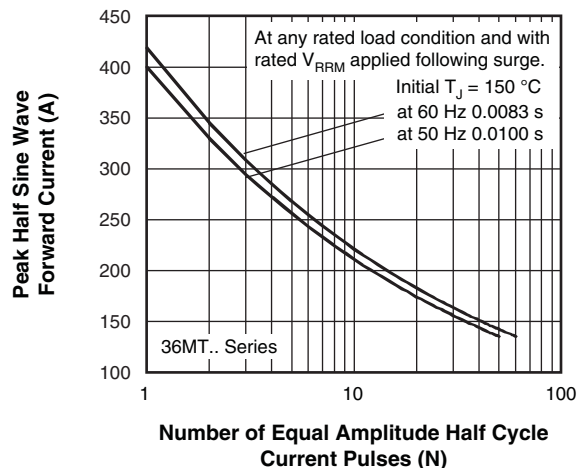


Fig. 9 - Maximum Non-Repetitive Surge Current

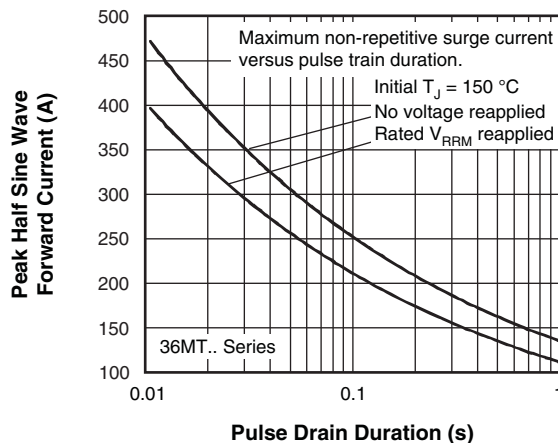
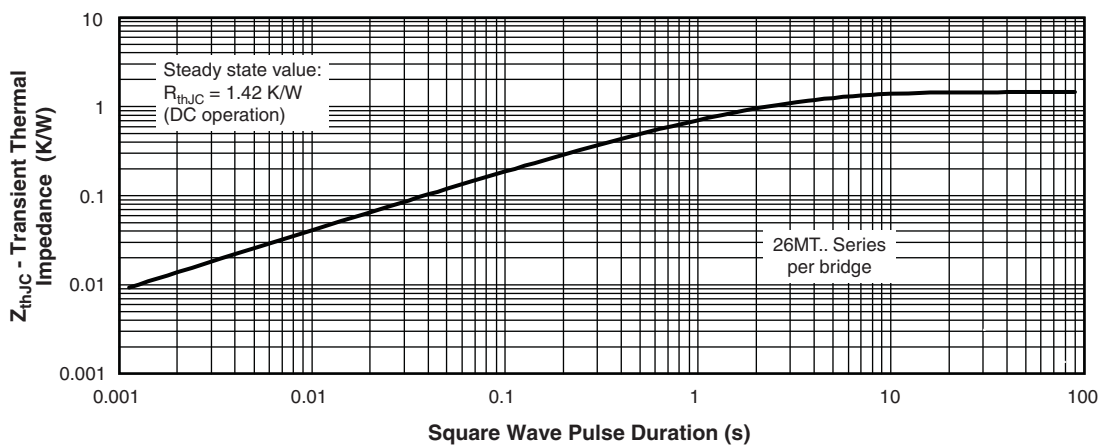
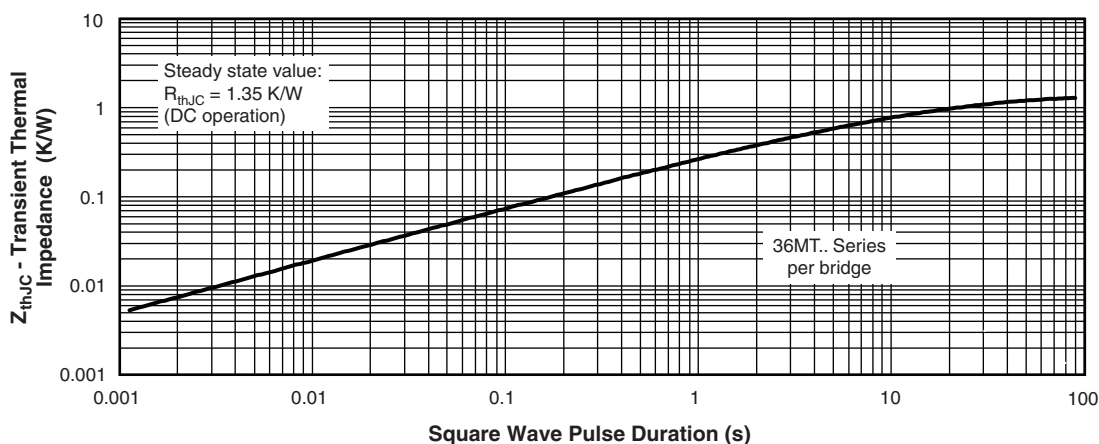


Fig. 10 - Maximum Non-Repetitive Surge Current


Fig. 11 - Thermal Impedance Z_{thJC} Characteristics

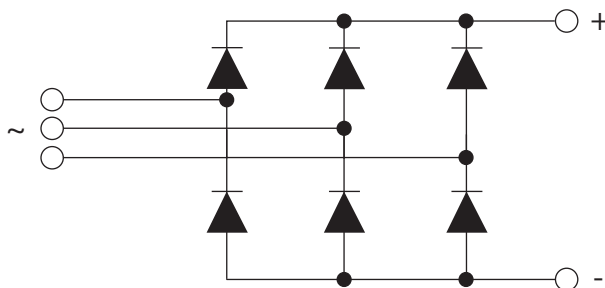

Fig. 12 - Thermal Impedance Z_{thJC} Characteristics

ORDERING INFORMATION TABLE

Device code	VS-	36	MT	160
	①	②	③	④
①	- Vishay Semiconductors product			
②	- Current rating code			
③	- Basic part number			
④	- Voltage code x 10 = V_{RRM}			

26 = 25 A (average)
36 = 35 A (average)

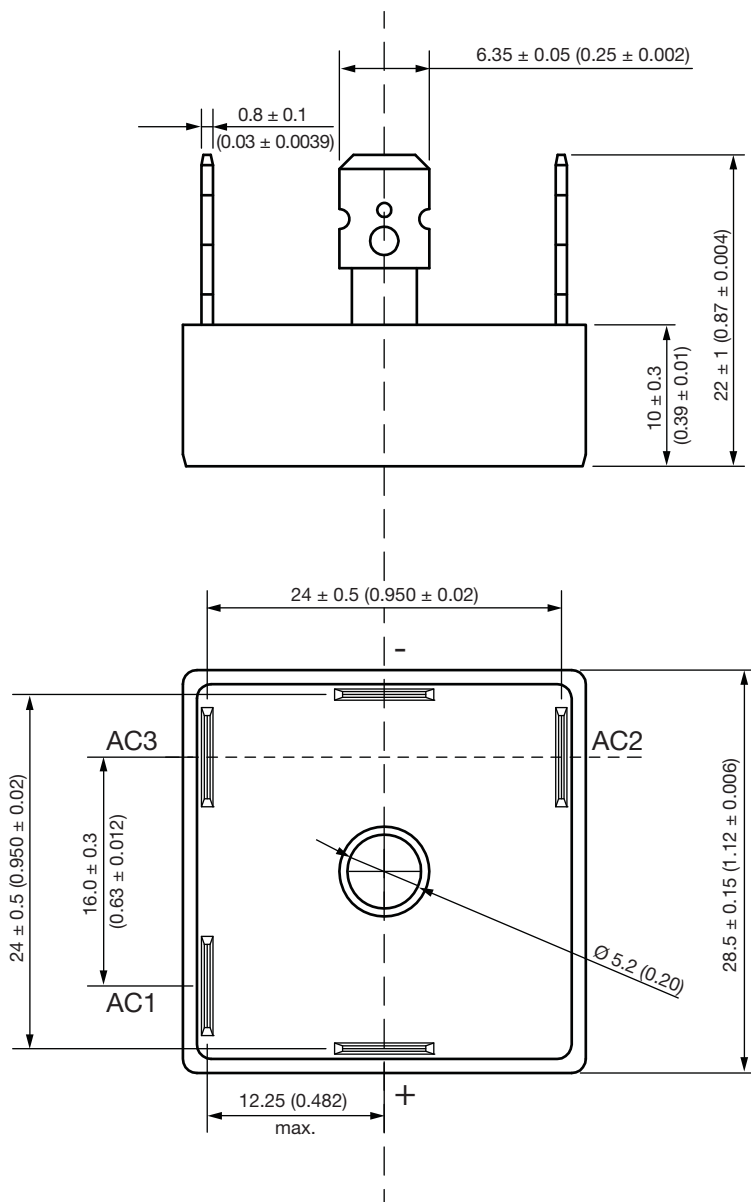
CIRCUIT CONFIGURATION



LINKS TO RELATED DOCUMENTS	
Dimensions	www.vishay.com/doc?95251

D-63

DIMENSIONS in millimeters (inches)



Not to scale



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