

CURRENT 25~35 Ampere  
 VOLTAGE RANG 50 to 1600 Volts

## 26MT160 THRU 36MT160

### 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 to 275 °C
- RoHS compliant
- Designed and qualified for industrial and consumer level



D-63



### 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.

#### PRODUCT SUMMARY

$I_o$	25 A/35 A
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### MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	26MT	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 <sup>2</sup> s
	60 Hz	580	1030	
$V_{RRM}$		100 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
26MT../36MT..	10	100	150	2
	20	200	275	
	40	400	500	
	60	600	725	
	80	800	900	
	100	1000	1100	
	120	1200	1300	
	140	1400	1500	
	160	1600	1700	

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FORWARD CONDUCTION							
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES		UNITS	
				26MT	36MT		
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 $I^2t$ for fusing	$I^2t$	t = 10 ms	No voltage reapplied		635	1130	A <sup>2</sup> s
		t = 8.3 ms			580	1030	
		t = 10 ms	100 % $V_{RRM}$ reapplied		450	800	
		t = 8.3 ms			410	730	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	$I^2t$ for time $t_x = I^2\sqrt{t} \times \sqrt{t_x}$ ; $0.1 \leq t_x \leq 10$ ms, $V_{RRM} = 0$ V		6360	11 300	A <sup>2</sup> √s	
Low level of threshold voltage	$V_{F(TO)1}$	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$ , $T_J$ maximum		0.88	0.86	V	
High level of threshold voltage	$V_{F(TO)2}$	$(I > \pi \times I_{F(AV)})$ , $T_J$ maximum		1.13	1.03		
Low level forward slope resistance	$r_{t1}$	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$ , $T_J$ maximum		7.9	6.3	mΩ	
High level forward slope resistance	$r_{t2}$	$(I > \pi \times I_{F(AV)})$ , $T_J$ maximum		5.2	5.0		
Maximum forward voltage drop	$V_{FM}$	$T_J = 25$ °C, $I_{FM} = 40$ Apk - 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		UNITS
				26MT	36MT	
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 ± 10 %		Bridge to heatsink with screw M4		2.0		Nm

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### Rating and Characteristic Curves ( $T_A=25^{\circ}\text{C}$ Unless otherwise noted )

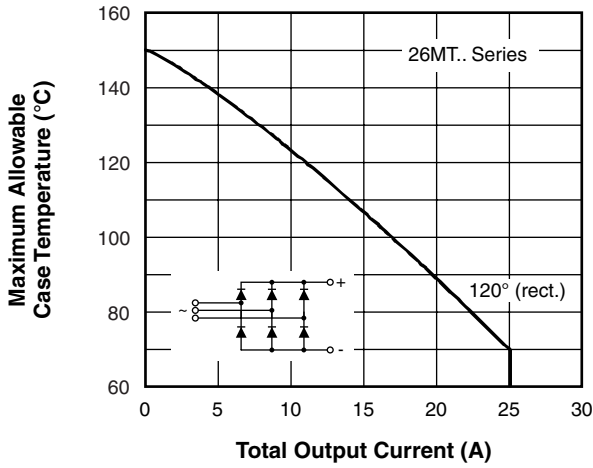


Fig. 1 - Current Ratings Characteristics

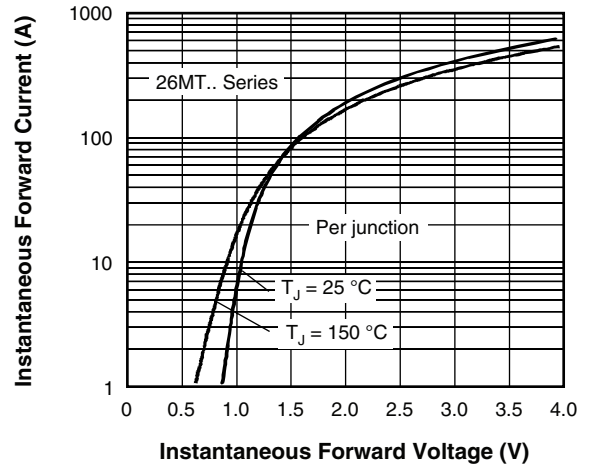


Fig. 2 - Forward Voltage Drop Characteristics

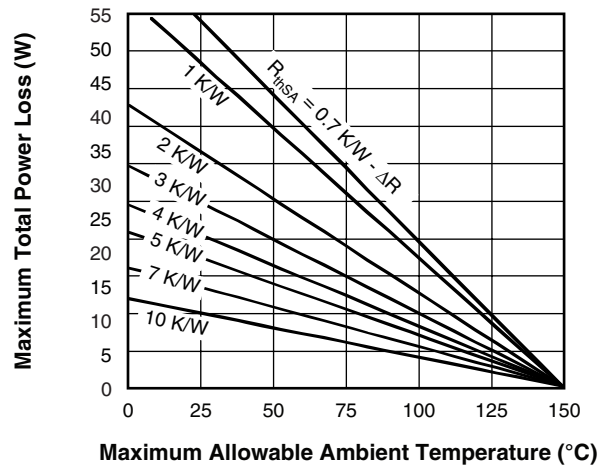
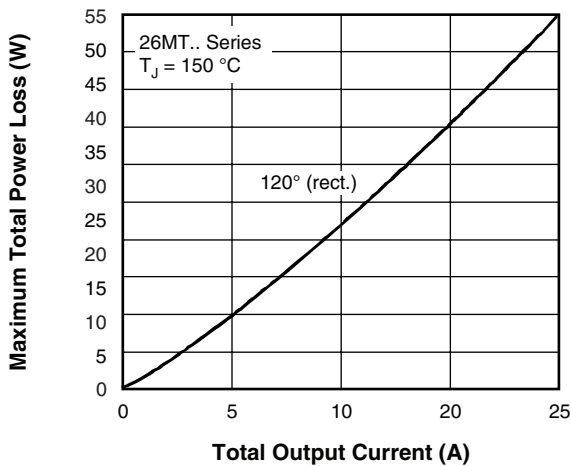


Fig. 3 - Total Power Loss Characteristics

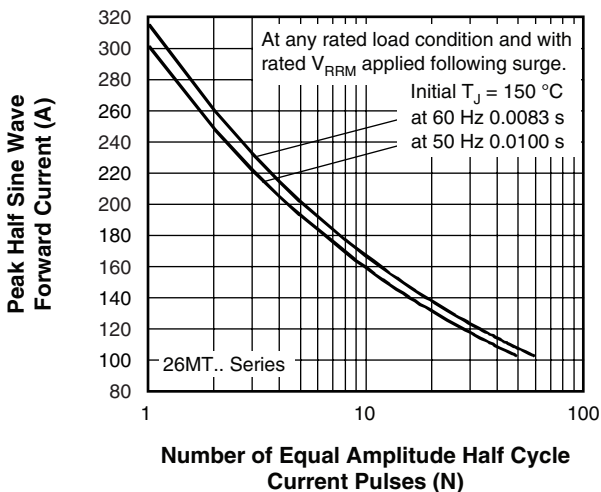


Fig. 4 - Maximum Non-Repetitive Surge Current

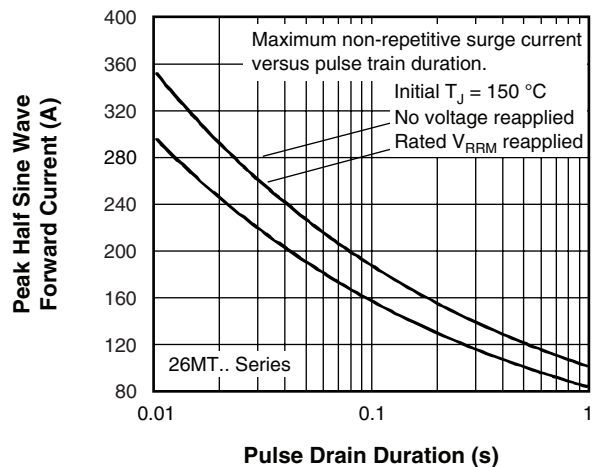


Fig. 5 - Maximum Non-Repetitive Surge Current

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**Rating and Characteristic Curves** (  $T_A=25^{\circ}\text{C}$  Unless otherwise noted )

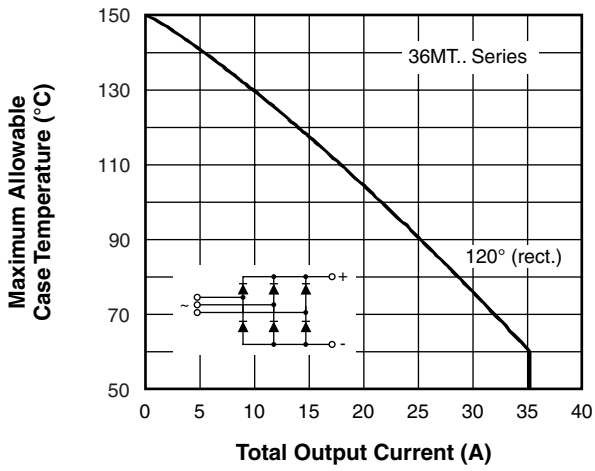


Fig. 6 - Current Ratings Characteristics

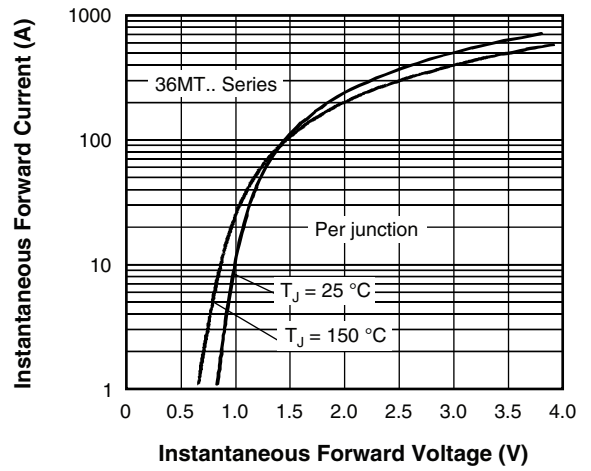


Fig. 7 - Forward Voltage Drop Characteristics

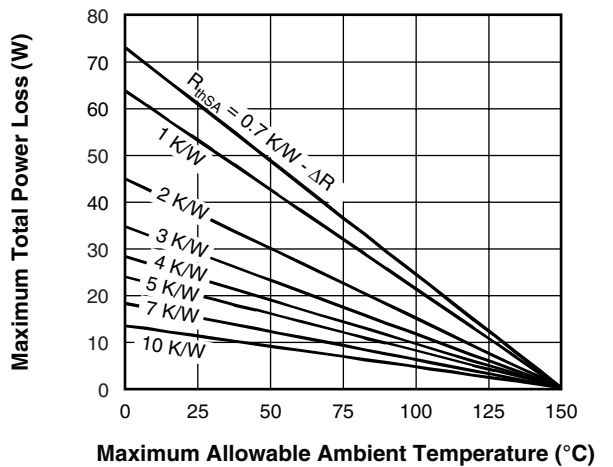
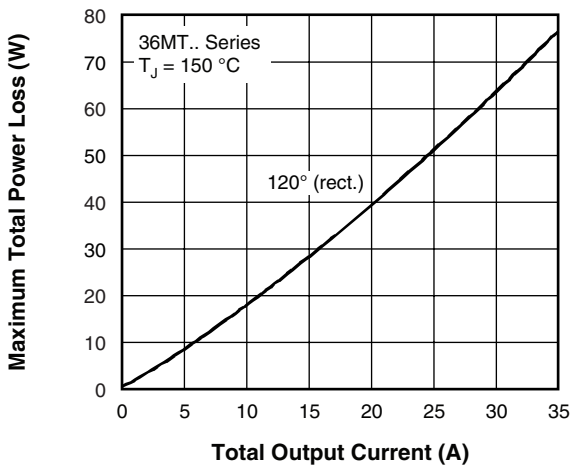


Fig. 8 - Total Power Loss Characteristics

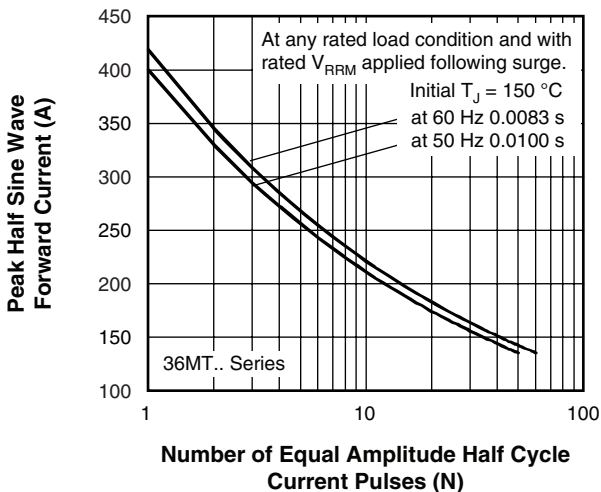


Fig. 9 - Maximum Non-Repetitive Surge Current

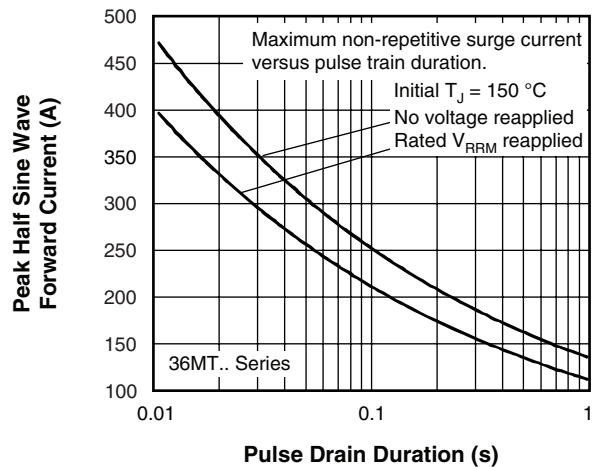


Fig. 10 - Maximum Non-Repetitive Surge Current

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**Rating and Characteristic Curves** (  $T_A=25^{\circ}\text{C}$  Unless otherwise noted )

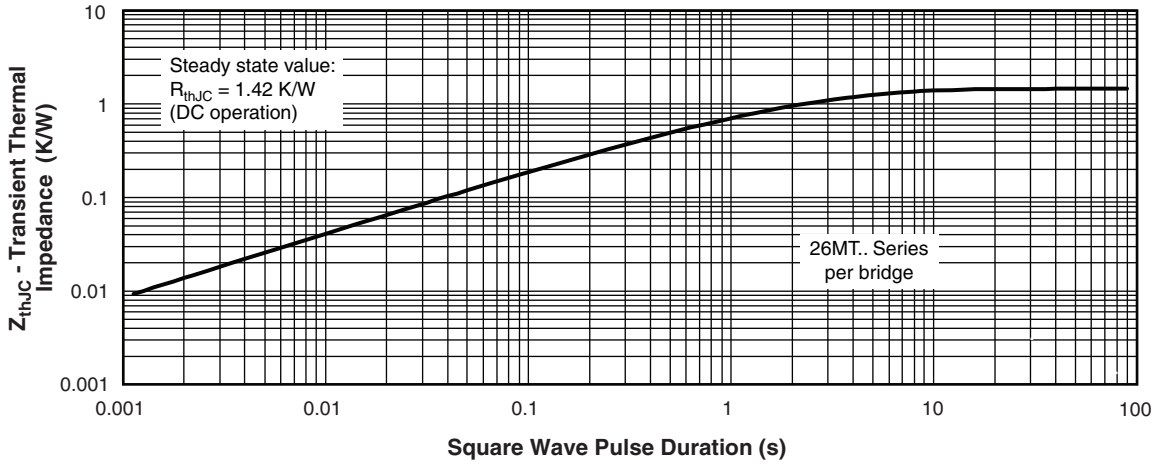


Fig. 11 - Thermal Impedance  $Z_{thJC}$  Characteristics

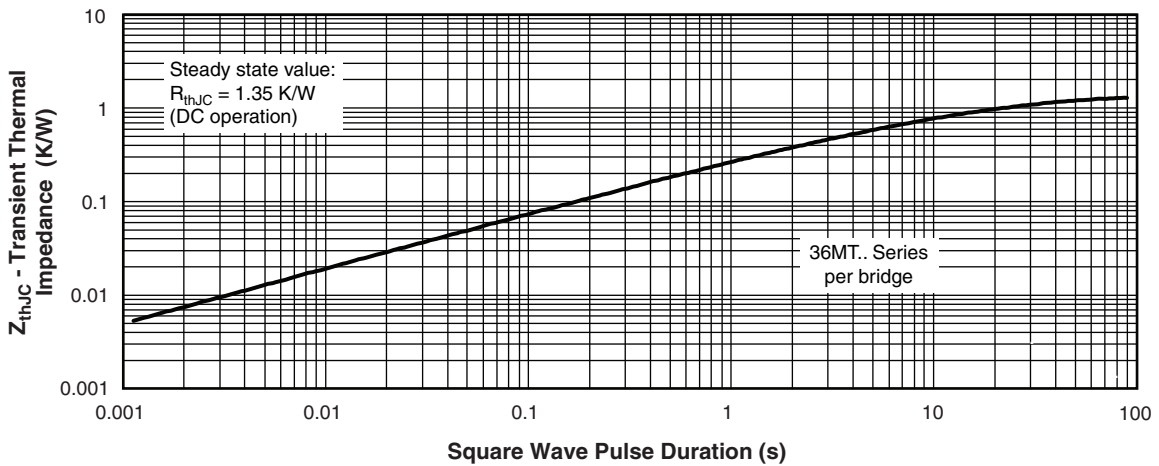
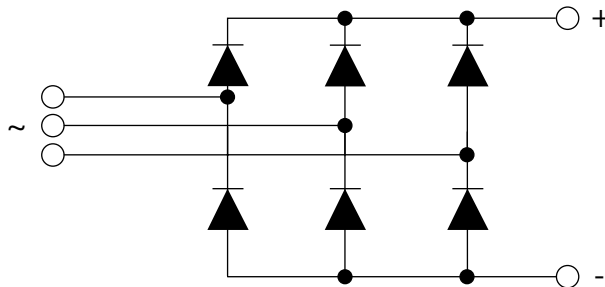


Fig. 12 - Thermal Impedance  $Z_{thJC}$  Characteristics

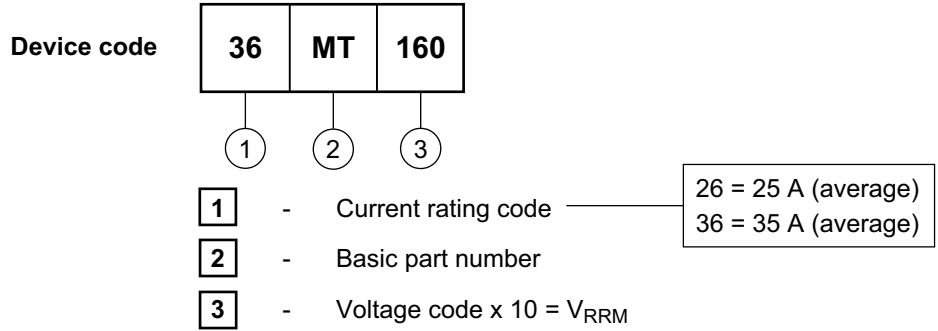
**CIRCUIT CONFIGURATION**



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### ORDERING INFORMATION TABLE



### Outline Table

