CURRENT 35~50 Ampere
VOLTAGE RANG 50 to 1000 Volts

MT3516A THRU MT5016A

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

This series is SGS listed under the Recognized Component Index, file number SZXEC1902259902

RoHS COMPLIANT

D-63

PRODUCT SUMMARY	
I_O	25 A/35 A

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

Parameters		MT35	MT50	Units
I_O		35	50	A
	@ T_C	70	60	°C
I_{FSM}	@50Hz	360	475	A
	@60Hz	375	500	A
I^2t	@50Hz	635	1130	A^2s
	@60Hz	580	1030	A^2s
V_{RRM}	range	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 rev. voltage V	I_{RRM} max. @ T_J max. mA
MT35/50	01A	100	150	2
	02A	200	275	
	04A	400	500	
	06A	600	725	
	08A	800	900	
	10A	1000	1100	
	12A	1200	1300	
	14A	1400	1500	
	16A	1600	1700	

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Forward Conduction

Parameters		MT35	MT5	Units	Conditions		
I_O	Maximum DC output current	35	50	A	120° Rect Conduction angle		
	@ T_C	70	60	°C			
I_{FSM}	Maximum peak, one-cycle	360	475	A	t=10ms	No voltage	
	non-repetitive forward current	375	500		t=8.3ms	reapplied	
	Initial $T_J = T_J$ max.	300	400		t=10ms	100% V_{RRM}	
		314	420		t=8.3ms	reapplied	Initial $T_J = T_J$ max.
I^2t	Maximum I^2t for fusing	635	1130	A^2s	t=10ms	No voltage	
	Initial $T_J = T_J$ max.	580	1030		t=8.3ms	reapplied	
		450	800		t=10ms	100% V_{RRM}	
		410	730		t=8.3ms	reapplied	
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	6360	11300	$A^2\sqrt{s}$	I^2t for time $t_x = I^2\sqrt{t} \times \sqrt{t_x}$; $0.1 <= t_x <= 10ms$, $V_{RRM} = 0V$		
$V_{F(TO)1}$	Low-level of threshold voltage	0.88	0.86	V	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, @ T_J max.		
$V_{F(TO)2}$	High-level of threshold voltage	1.13	1.03		$(I > \pi \times I_{F(AV)})$, @ T_J max.		
r_{t1}	Low-level forward slope resistance	7.9	6.3	mΩ	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, @ T_J max.		
r_{t2}	High-level forward slope resistance	5.2	5.0		$(I > \pi \times I_{F(AV)})$, @ T_J max.		
V_{FM}	Maximum forward voltage drop	1.26	1.19	V	$T_J = 25°C$, $I_{FM} = 40A_{pk}$ - Per single Junction		
I_{RRM}	Max. DC reverse current	100		μA	$T_J = 25°C$, per Junction at rated V_{RRM}		
V_{INS}	RMS isolation voltage	2700		V	$T_J = 25°C$, All terminal shorted f=50Hz, t=1s		

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Rating and Characteristic Curves (TA = 25°C Unless otherwise noted)

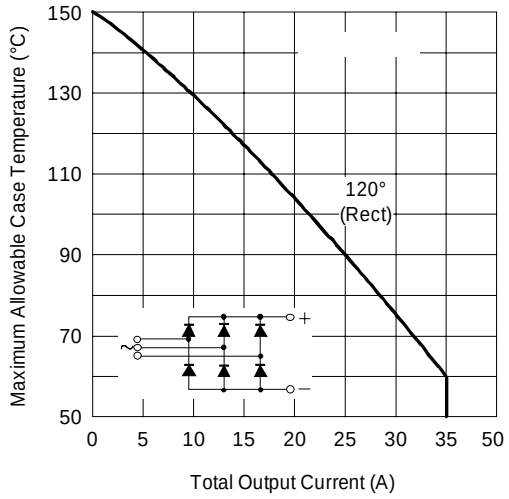

Fig. 6 - Current Ratings Characteristics

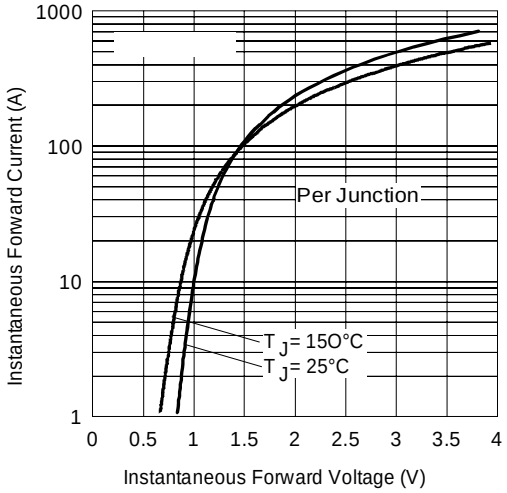

Fig. 7 - Forward Voltage Drop Characteristics

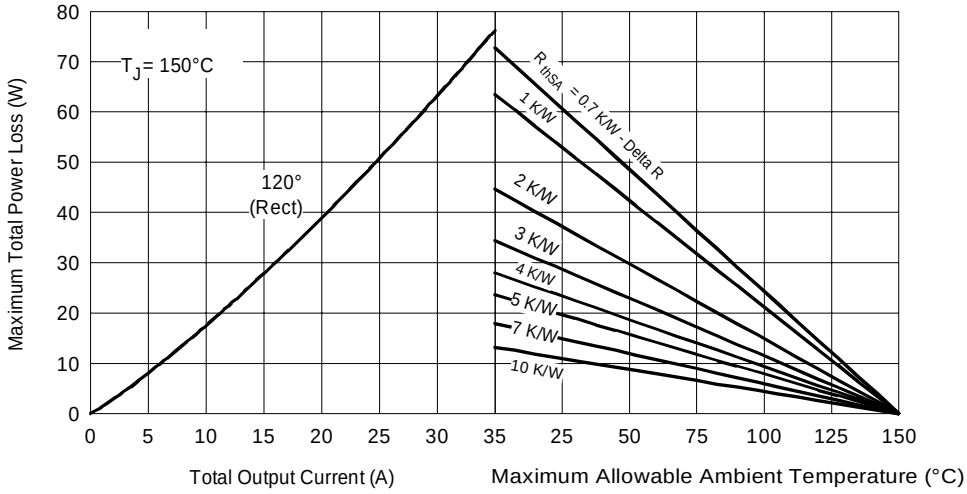

Fig. 8 - Total Power Loss Characteristics

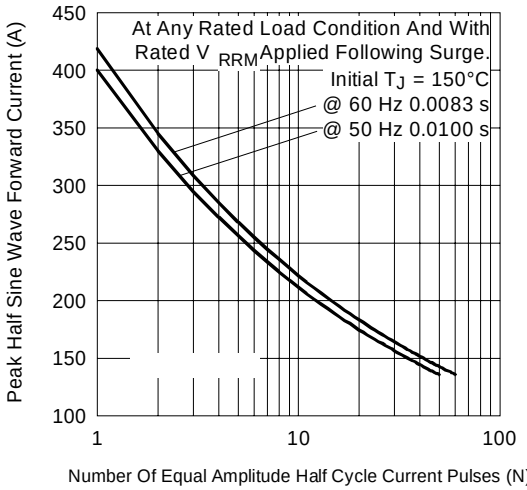

Fig. 9 - Maximum Non-Repetitive Surge Current

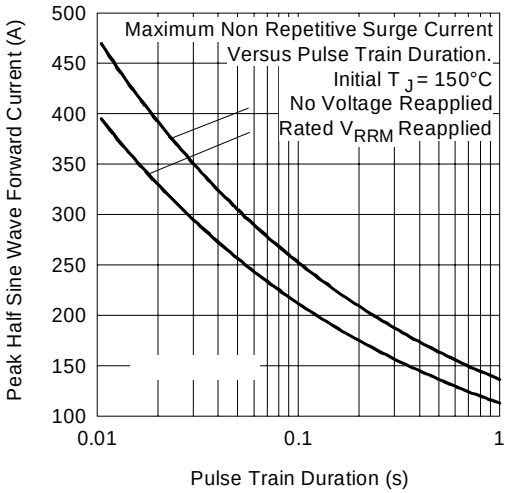

Fig. 10 - Maximum Non-Repetitive Surge Current

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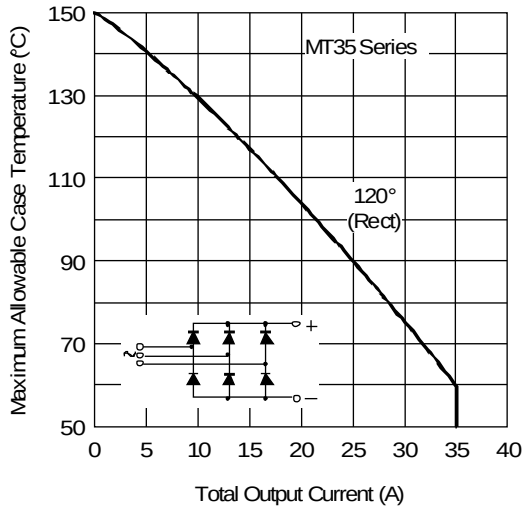

Fig. 6 - Current Ratings Characteristics

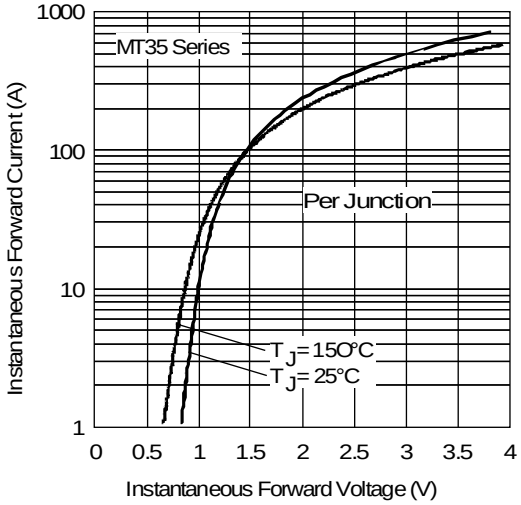

Fig. 7 - Forward Voltage Drop Characteristics

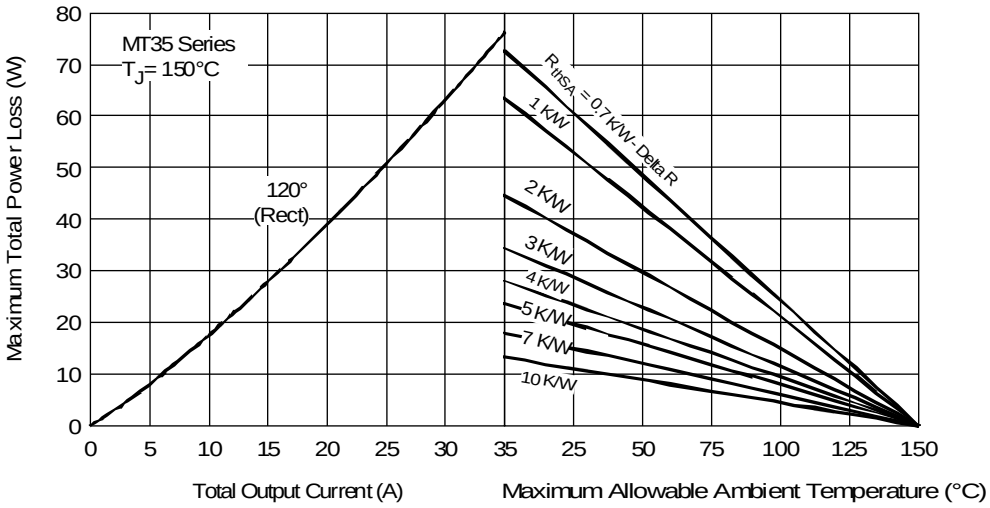

Fig. 8 - Total Power Loss Characteristics

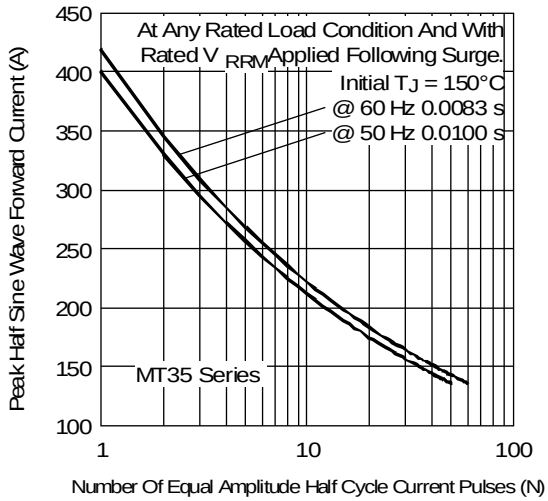

Fig. 9 - Maximum Non-Repetitive Surge Current

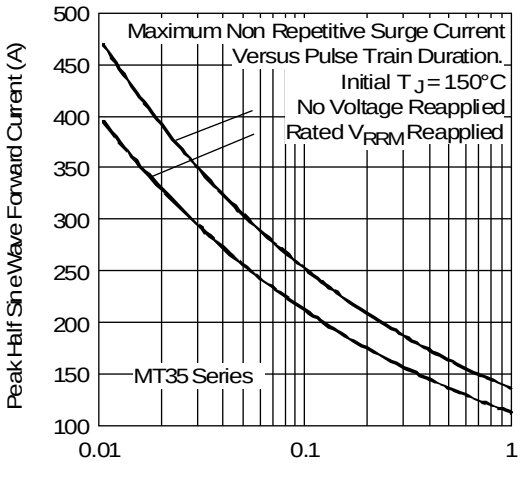

Fig. 10 - Maximum Non-Repetitive Surge Current

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Rating and Characteristic Curves (TA = 25°C Unless otherwise noted)

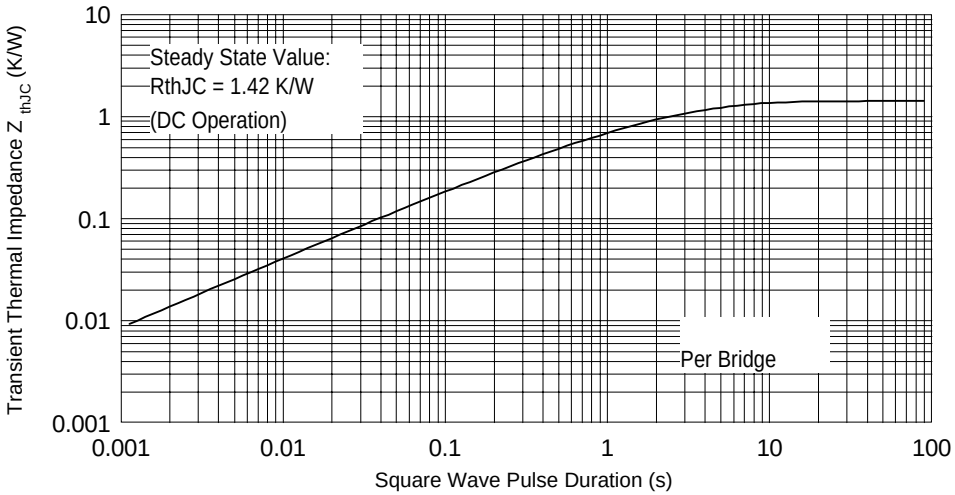

Fig. 11 - Thermal Impedance Z_{thJC} Characteristics

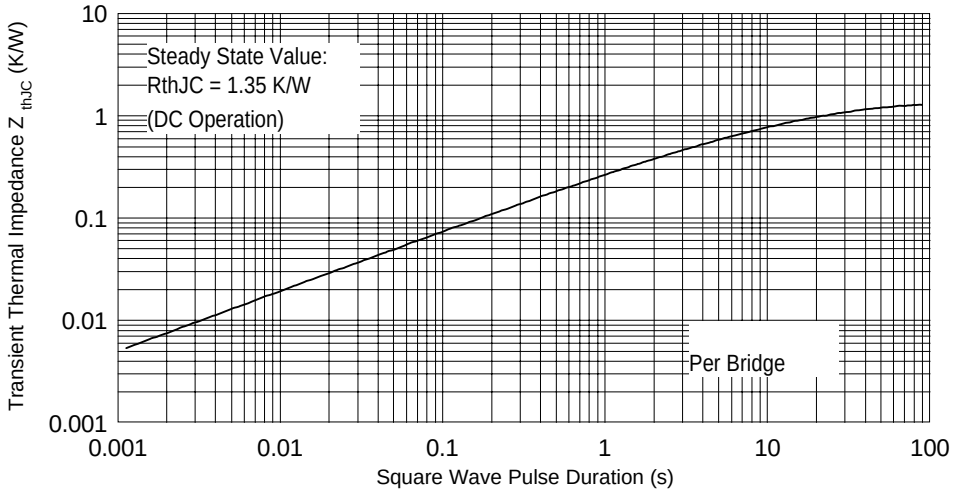

Fig. 12 - Thermal Impedance Z_{thJC} Characteristics

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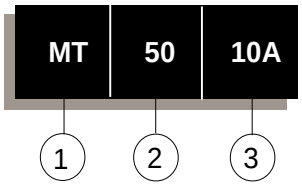
Thermal and Mechanical Specifications

	Parameter	MT35	M50	Units	Conditions
T_J	Max. junction temperature range	-55 to 150		°C	
T_{stg}	Max. storage temperature range	-55 to 150		°C	
R_{thJC}	Max. thermal resistance junction to case	1.42	1.35	K/W	DC operation per bridge (Based on total power loss of bridge)
R_{thCS}	Max. thermal resistance, case to heatsink	0.2	0.2	K/W	Mounting surface, smooth, flat and greased
wt	Approximate weight	20		g	
T	Mounting Torque ± 10%	2.0		Nm	Bridge to heatsink with screw M4

Ordering Information Table

Device Code



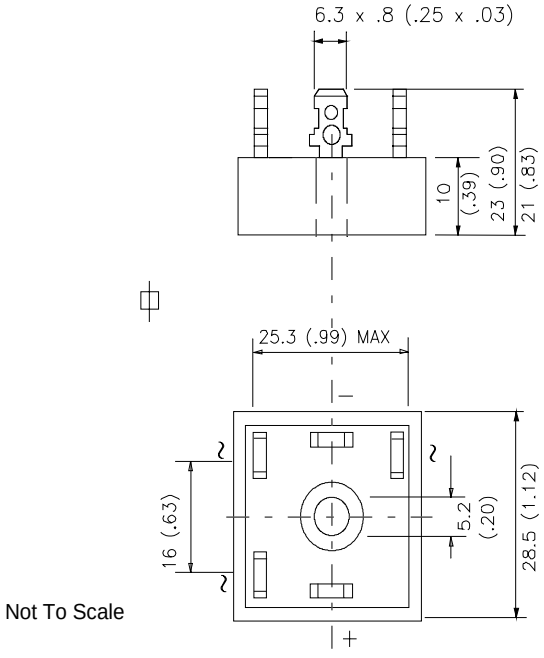
1 - Basic part number

2 - Current rating code:

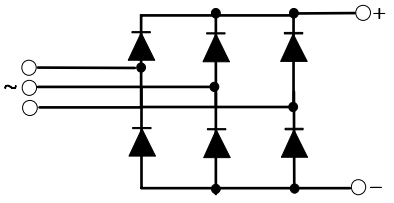
35	=	35A (Avg)
50	=	50A (Avg)

3 - Voltage code (code x 10 = V_{RRM})

Outline Table



Suggested plugging force:
400 N max; axially applied to faston terminals



All dimensions in millimeters (inches)