

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
-------	-----------

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 ² s
@ 60Hz	580	1030	A ² s
V_{RRM} range	100 to 1600		V
T_J	-55 to 150		°C

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.

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	
	16A	1600	1700	

CURRENT 35~50 Ampere
 VOLTAGE RANG 50 to 1000 Volts

MT3516A THRU MT5016A

Forward Conduction

Parameters	MT35	MT5	Units	Conditions		
I _O Maximum DC output current @ T _C	35	50	A	120° Rect Conduction angle		
	70	60	°C			
I _{FSM} Maximum peak, one-cycle non-repetitive forward current Initial T _J = T _J max.	360	475	A	t = 10ms	No voltage	Initial T _J = T _J max.
	375	500		t = 8.3ms	reapplied	
	300	400		t = 10ms	100% V _{RRM}	
	314	420		t = 8.3ms	reapplied	
I ² t Maximum I ² t for fusing Initial T _J = T _J max.	635	1130	A ² s	t = 10ms	No voltage	
	580	1030		t = 8.3ms	reapplied	
	450	800		t = 10ms	100% V _{RRM}	
	410	730		t = 8.3ms	reapplied	
I ² √t Maximum I ² √t for fusing	6360	11300	A ² √s	I ² t for time t _x = I ² √t _x √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% × π × I _{F(AV)} < I < π × I _{F(AV)}), @ T _J max.		
V _{F(TO)2} High-level of threshold voltage	1.13	1.03		(I > π × I _{F(AV)}), @ T _J max.		
r _{t1} Low-level forward slope resistance	7.9	6.3	mΩ	(16.7% × π × I _{F(AV)} < I < π × I _{F(AV)}), @ T _J max.		
r _{t2} High-level forward slope resistance	5.2	5.0		(I > π × 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		

CURRENT 35~50 Ampere
 VOLTAGE RANG 50 to 1000 Volts

MT3516A THRU MT5016A

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

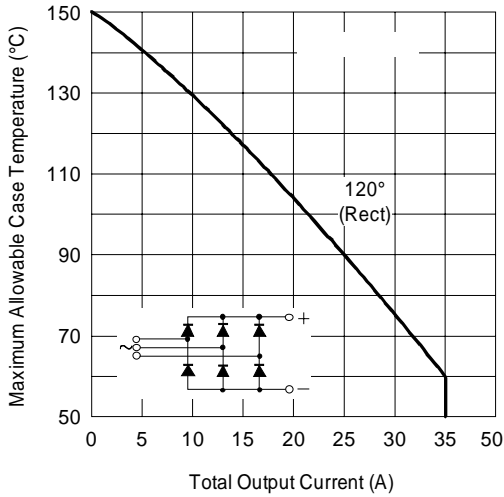


Fig. 6 - Current Ratings Characteristics

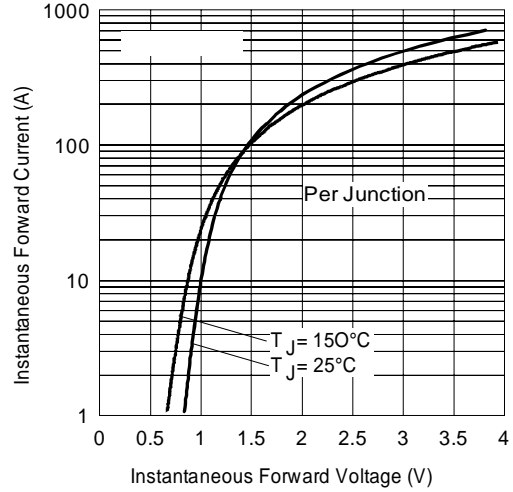


Fig. 7 - Forward Voltage Drop Characteristics

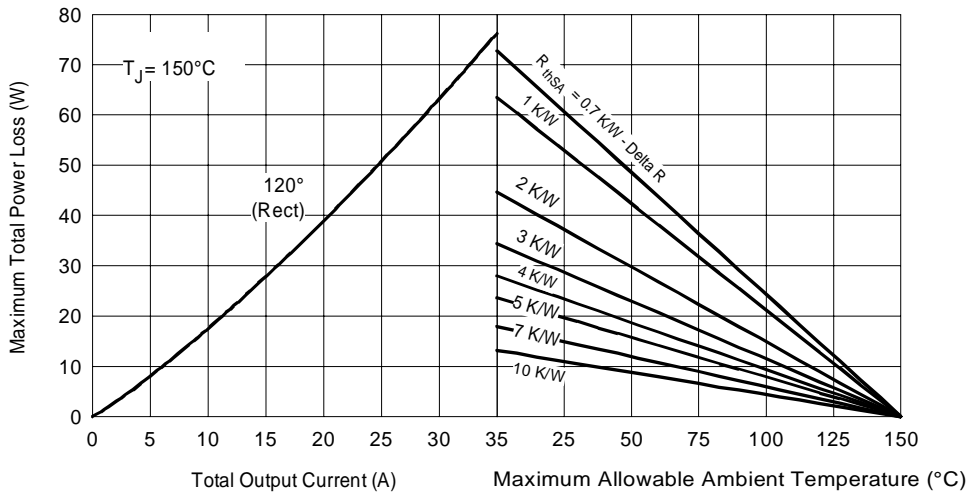


Fig. 8 - Total Power Loss Characteristics

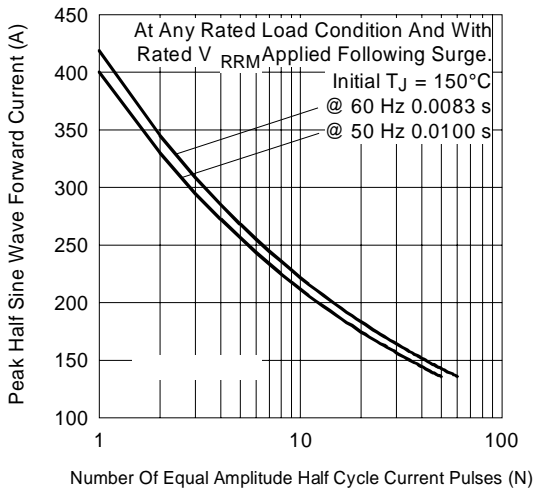


Fig. 9 - Maximum Non-Repetitive Surge Current

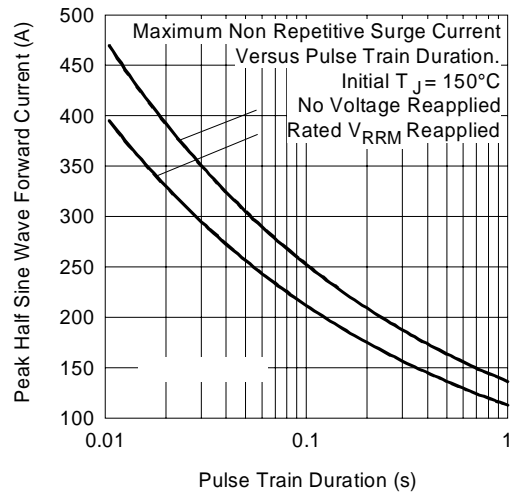


Fig. 10 - Maximum Non-Repetitive Surge Current

CURRENT 35~50 Ampere
 VOLTAGE RANG 50 to 1000 Volts

MT3516A THRU MT5016A

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

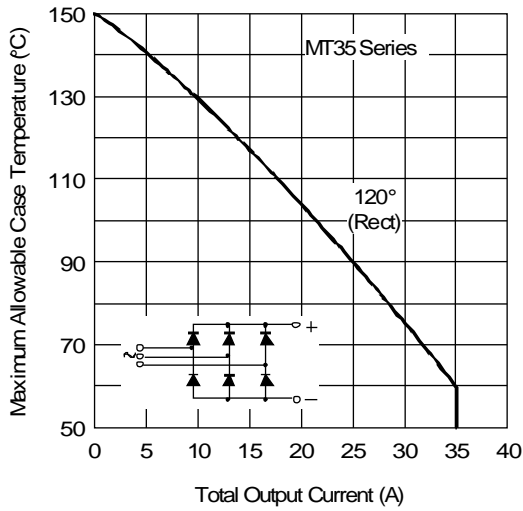


Fig. 6 - Current Ratings Characteristics

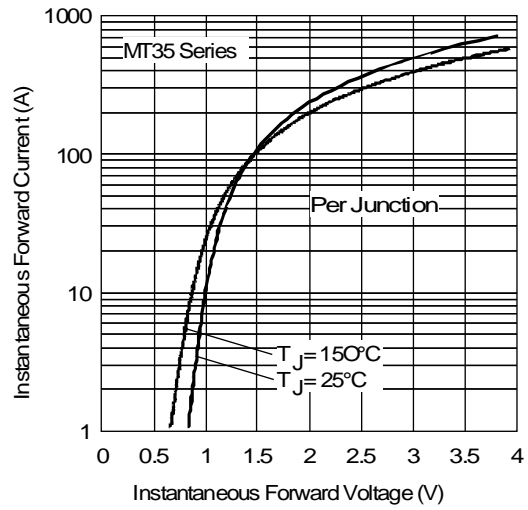


Fig. 7 - Forward Voltage Drop Characteristics

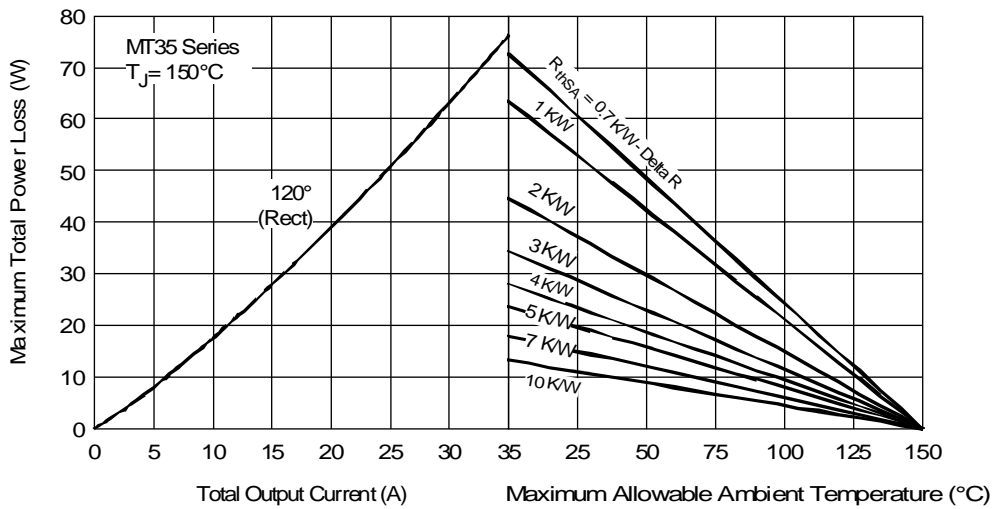


Fig. 8 - Total Power Loss Characteristics

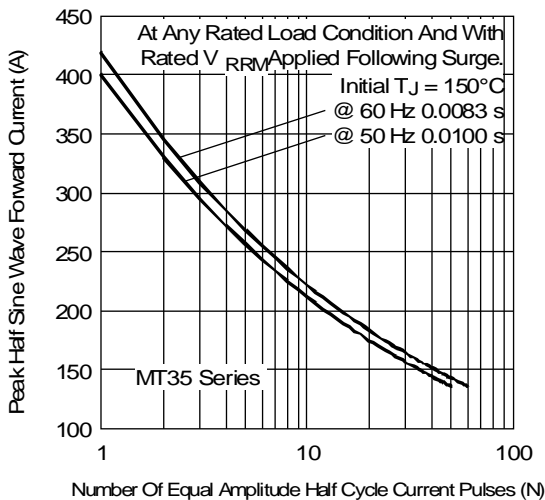


Fig. 9 - Maximum Non-Repetitive Surge Current

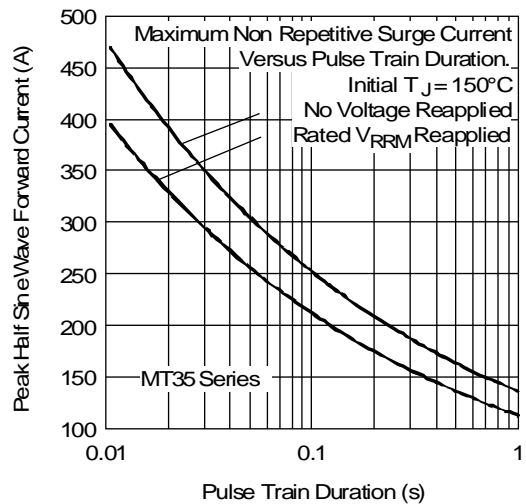


Fig. 10 - Maximum Non-Repetitive Surge Current

CURRENT 35~50 Ampere
 VOLTAGE RANG 50 to 1000 Volts

MT3516A THRU MT5016A

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

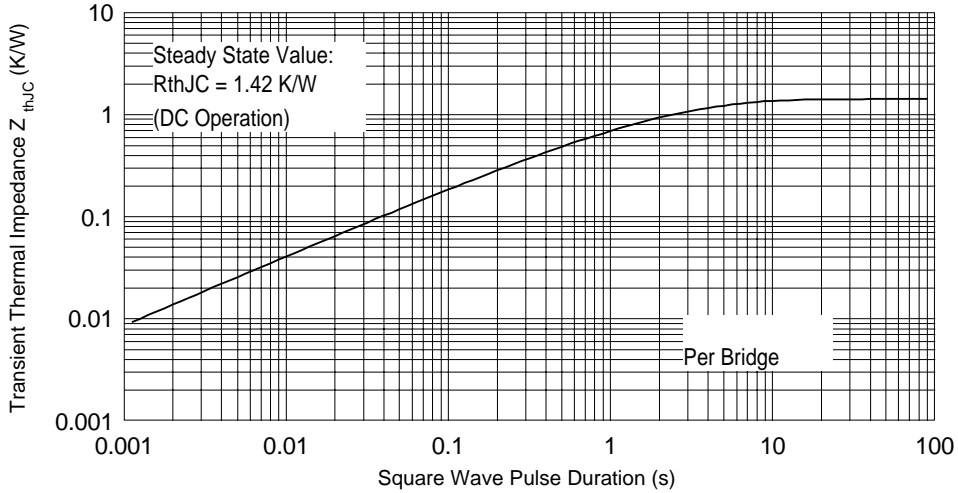


Fig. 11 - Thermal Impedance Z_{thJC} Characteristics

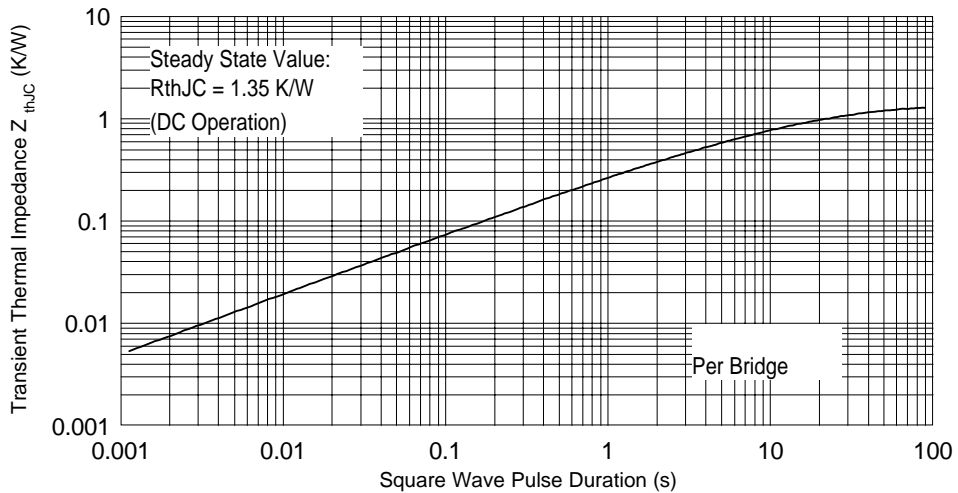


Fig. 12 - Thermal Impedance Z_{thJC} Characteristics

CURRENT 35~50 Ampere
 VOLTAGE RANG 50 to 1000 Volts

MT3516A THRU MT5016A

Thermal and Mechanical Specifications

Parameter	MT35	M50	Units	Conditions
T _J	-55 to 150		°C	
T _{stg}	-55 to 150		°C	
R _{thJC}	1.42	1.35	K/W	DC operation per bridge (Based on total power loss of bridge)
R _{thCS}	0.2	0.2	K/W	Mounting surface, smooth, flat and greased
wt	20		g	
T	2.0		Nm	Bridge to heatsink with screw M4

Ordering Information Table

Device Code

MT	50	10A
----	----	-----

①

②

③

- 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)