

APPLICATIONS

- Rectification
- Freewheel Diode
- DC Motor Control
- Power Supplies
- Welding
- Battery Chargers

FEATURES

- Double Side Cooling
- High Surge Capability

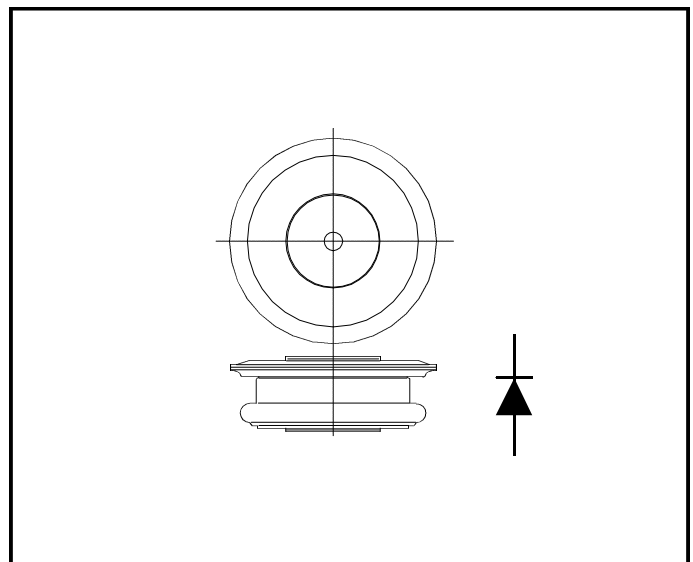
VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM} V	Conditions
TR402ST14	1400	$V_{RSM} = V_{RRM} + 100V$
TR402ST13	1300	
TR402ST12	1200	
TR402ST11	1100	
TR402ST10	1000	
TR402ST09	900	

Lower voltage grades available.

KEY PARAMETERS

V_{RRM}	1400V
$I_{F(AV)}$	505A
I_{FSM}	5600A



Outline type code: T.
See Package Details for further information.

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 100^{\circ}C$	505	A
$I_{F(RMS)}$	RMS value	$T_{case} = 100^{\circ}C$	793	A
I_F	Continuous (direct) forward current	$T_{case} = 100^{\circ}C$	640	A
Single Side Cooled (Anode side)				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 100^{\circ}C$	365	A
$I_{F(RMS)}$	RMS value	$T_{case} = 100^{\circ}C$	573	A
I_F	Continuous (direct) forward current	$T_{case} = 100^{\circ}C$	390	A

TR402ST

SURGE RATINGS

Symbol	Parameter	Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; $T_{case} = 175^{\circ}C$ $V_R = 50\% V_{RRM} - 1/4$ sine	4.5	kA
I^2t	I^2t for fusing		101×10^3	A ² s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; $T_{case} = 175^{\circ}C$ $V_R = 0$	5.6	kA
I^2t	I^2t for fusing		155×10^3	A ² s

THERMAL AND MECHANICAL DATA

Symbol	Parameter	Conditions	Min.	Max.	Units	
$R_{th(j-c)}$	Thermal resistance - junction to case	Double side cooled	dc	-	0.08	$^{\circ}C/W$
		Single side cooled	Anode dc	-	0.16	$^{\circ}C/W$
			Cathode dc	-	0.16	$^{\circ}C/W$
$R_{th(c-h)}$	Thermal resistance - case to heatsink	Clamping force 4.5kN with mounting compound	Double side	-	0.02	$^{\circ}C/W$
			Single side	-	0.04	$^{\circ}C/W$
T_{vj}	Virtual junction temperature	On-state (conducting)		-	185	$^{\circ}C$
		Reverse (blocking)		-	175	$^{\circ}C$
T_{stg}	Storage temperature range		-55	200	$^{\circ}C$	
-	Clamping force		3.5	5.0	kN	

CHARACTERISTICS

Symbol	Parameter	Conditions	Min.	Max.	Units
V_{FM}	Forward voltage	At 450A peak, $T_{case} = 25^{\circ}C$	-	1.25	V
I_{RRM}	Peak reverse current	At V_{RRM} , $T_{case} = 175^{\circ}C$	-	15	mA
V_{TO}	Threshold voltage	At $T_{vj} = 175C$	-	0.81	V
r_T	Slope resistance	At $T_{vj} = 175C$	-	0.84	m Ω

CURVES

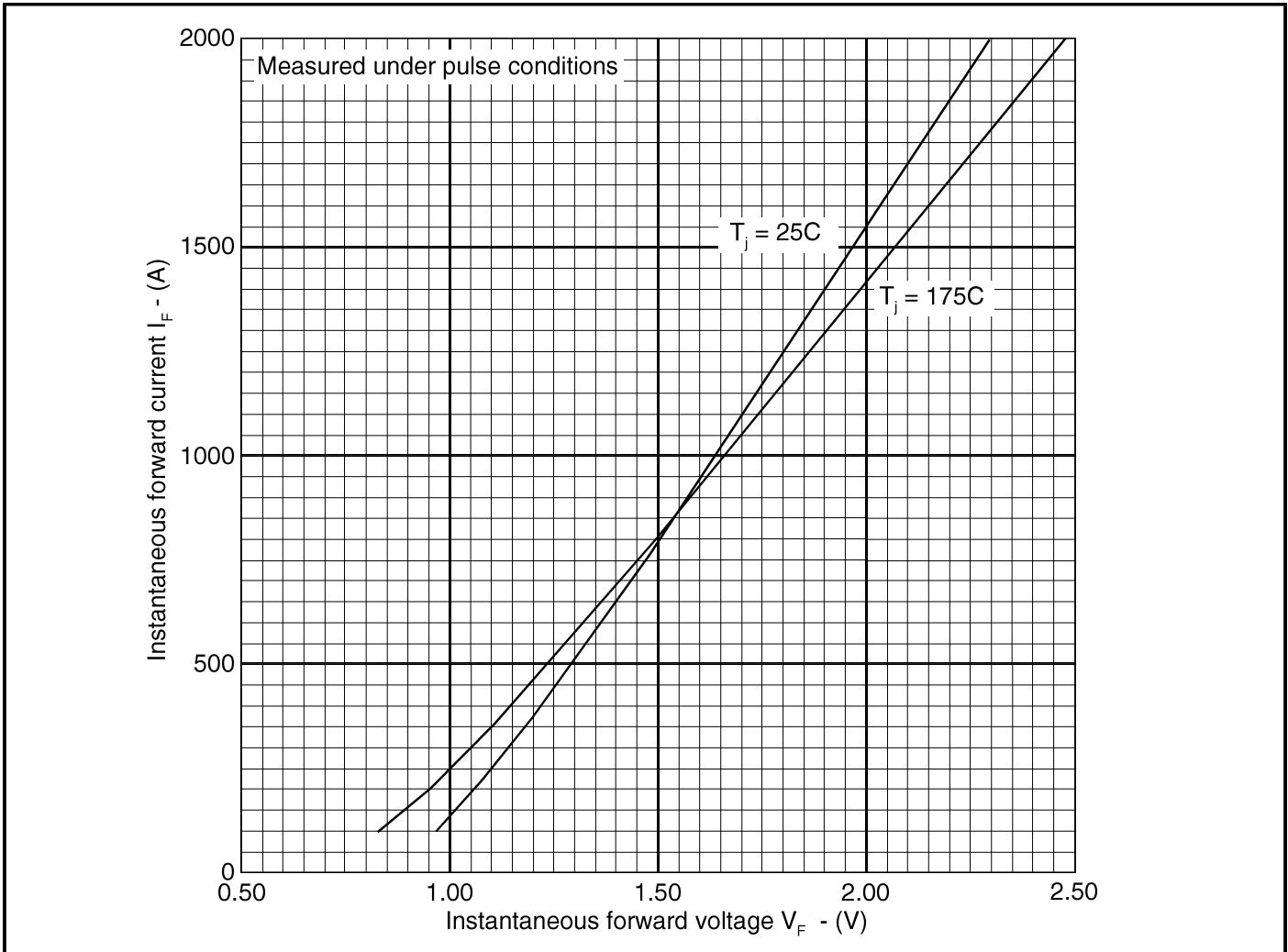


Fig. 1 Maximum (limit) forward characteristics

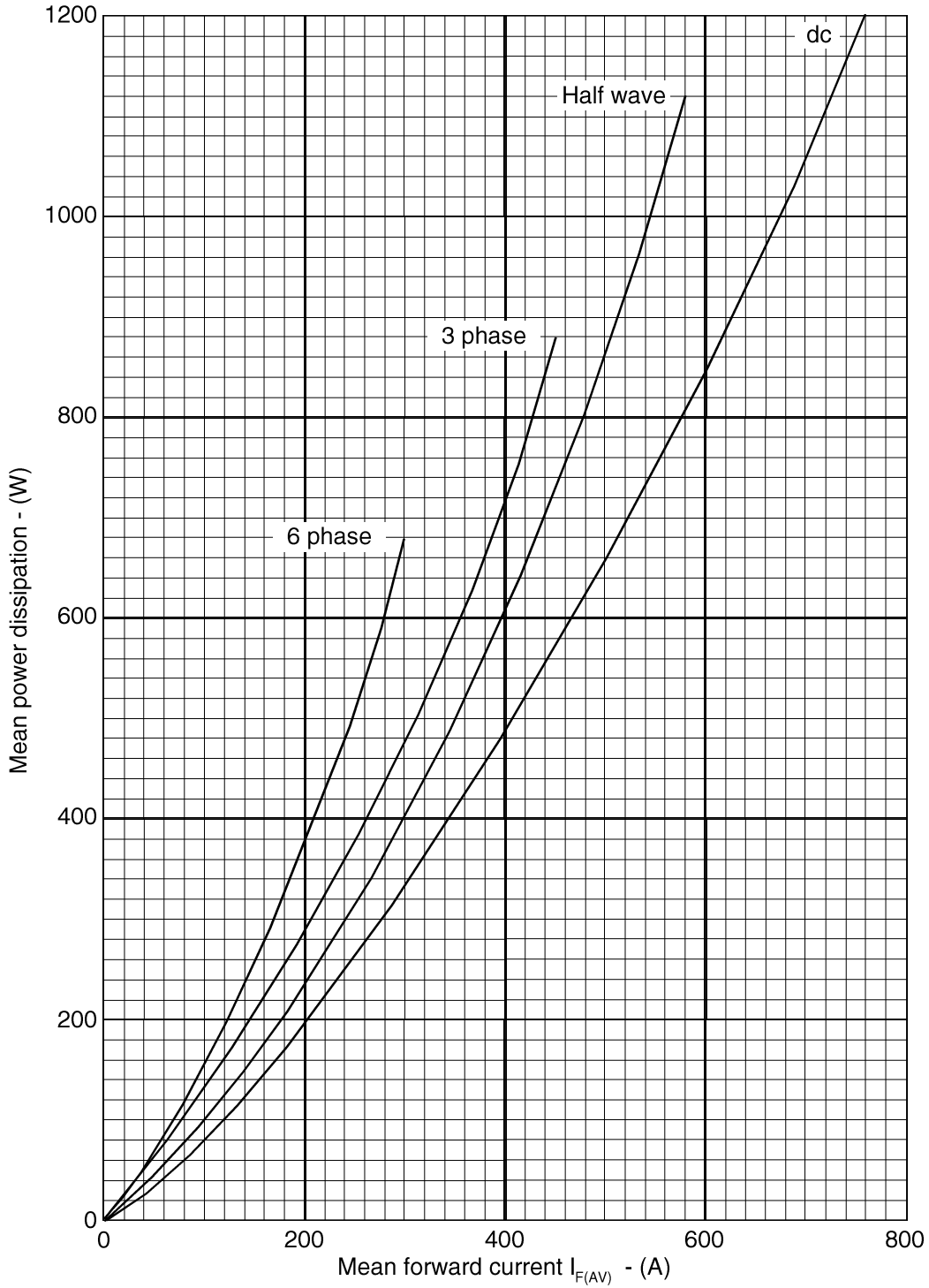


Fig. 2 Dissipation curves

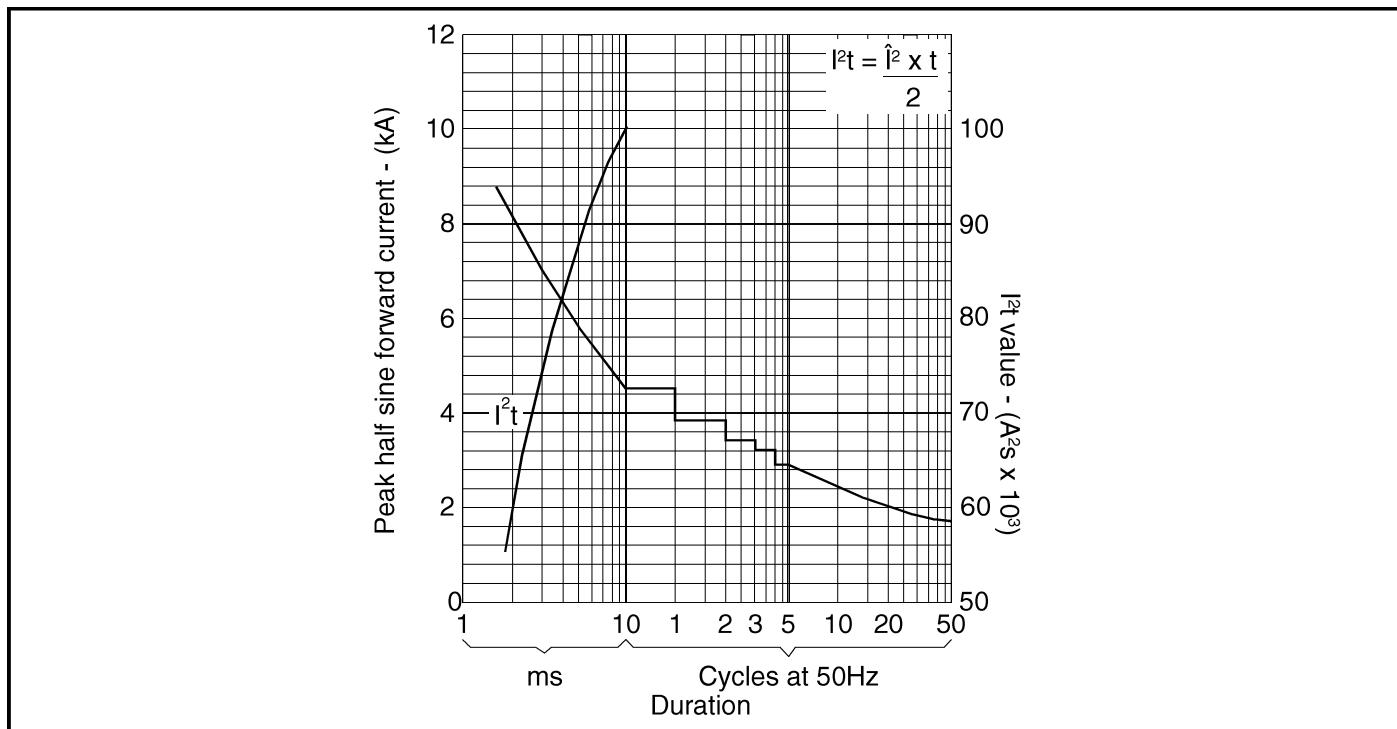


Fig. 3 Surge (non-repetitive) forward current vs time (with 50% V_{RRM} , $T_{case} = 175C$)

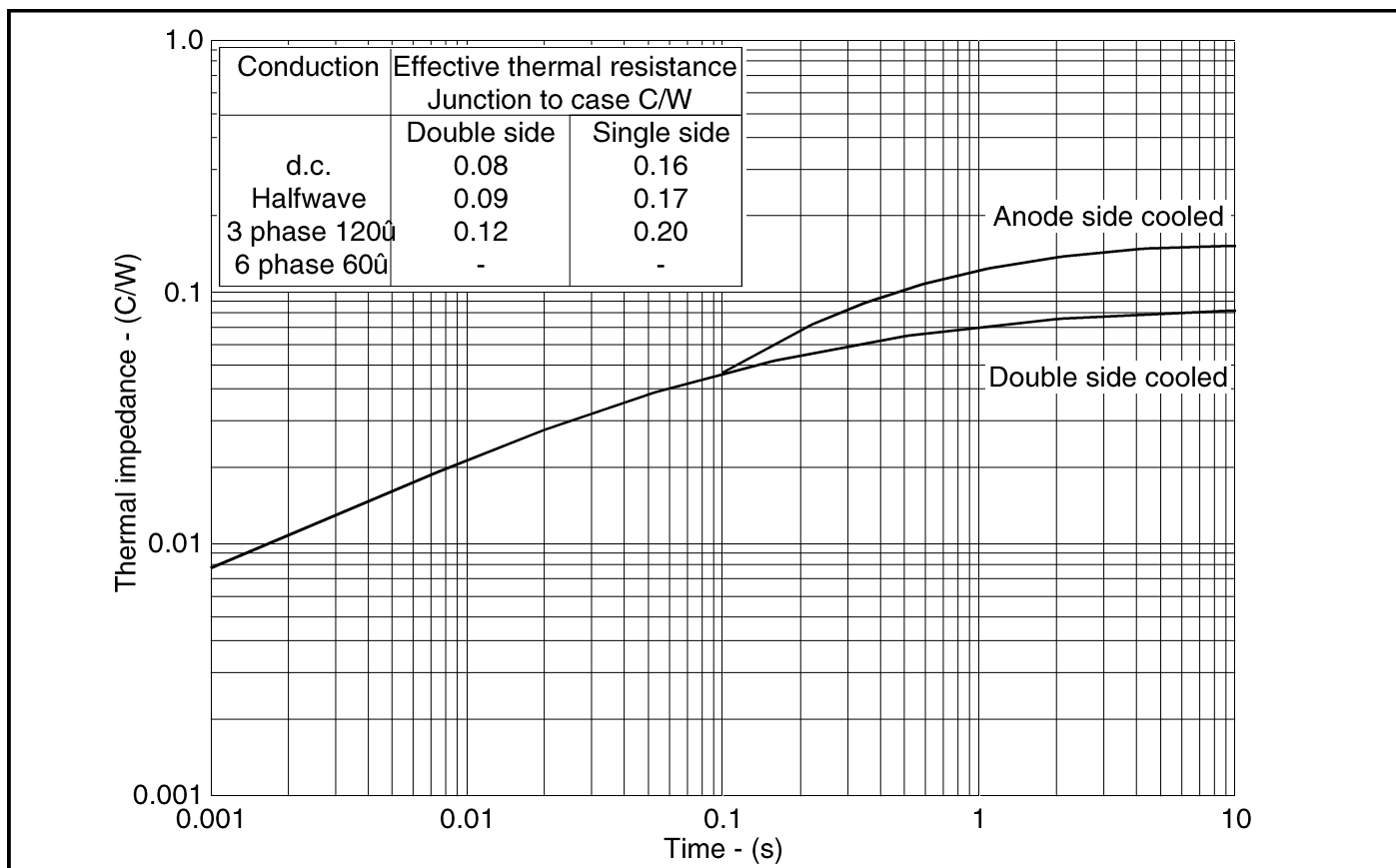


Fig. 4 Transient thermal impedance - junction to case - (C/W)

TR402ST

PACKAGE DETAILS

For further package information, please contact your local Customer Service Centre. All dimensions in mm, unless stated otherwise. DO NOT SCALE.

