

APPLICATIONS

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

KEY PARAMETERS

V_{RRM}	1400V
$I_{F(AV)}$	540A
I_{FSM}	8000A

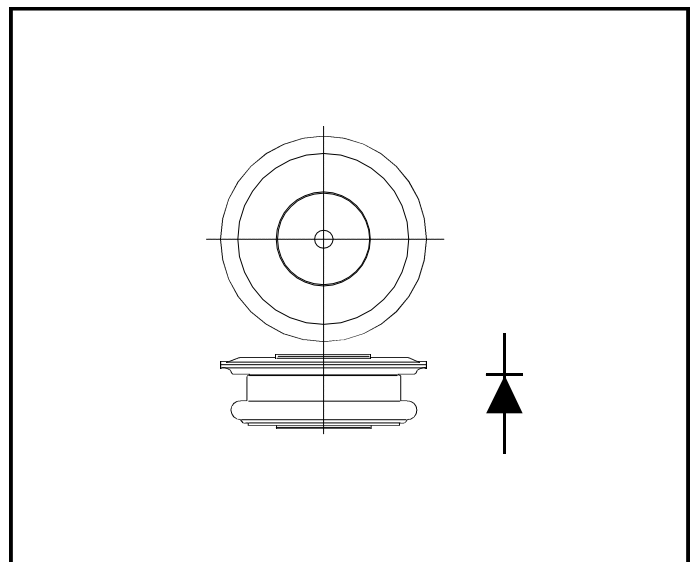
FEATURES

- Double Side Cooling
- High Surge Capability

VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM} V	Conditions
TR502ST14	1400	$V_{RSM} = V_{RRM} + 100V$
TR502ST13	1300	
TR502ST12	1200	
TR502ST11	1100	
TR502ST10	1000	
TR502ST09	900	

Lower voltage grades available.



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, $T_{case} = 100^{\circ}C$	540	A
$I_{F(RMS)}$	RMS value	$T_{case} = 100^{\circ}C$	848	A
I_F	Continuous (direct) forward current	$T_{case} = 100^{\circ}C$	783	A
Single Side Cooled (Anode side)				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 100^{\circ}C$	350	A
$I_{F(RMS)}$	RMS value	$T_{case} = 100^{\circ}C$	550	A
I_F	Continuous (direct) forward current	$T_{case} = 100^{\circ}C$	465	A

TR502ST

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	6.5	kA
I^2t	I^2t for fusing		211×10^3	A^2s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; $T_{case} = 175^{\circ}C$ $V_R = 0$	8.0	kA
I^2t	I^2t for fusing		320×10^3	A^2s

THERMAL AND MECHANICAL DATA

Symbol	Parameter	Conditions	Min.	Max.	Units	
$R_{th(j-c)}$	Thermal resistance - junction to case	Double side cooled	dc	-	0.07	$^{\circ}C/W$
		Single side cooled	Anode dc	-	0.14	$^{\circ}C/W$
			Cathode dc	-	0.14	$^{\circ}C/W$
$R_{th(c-h)}$	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	Forward (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
I_{RRM}	Peak reverse current	At V_{RRM} , $T_{case} = 175^{\circ}C$	-	30	mA
V_{TO}	Threshold voltage	At $T_{vj} = 175C$	-	0.84	V
r_T	Slope resistance	At $T_{vj} = 175C$	-	0.667	$m\Omega$

CURVES

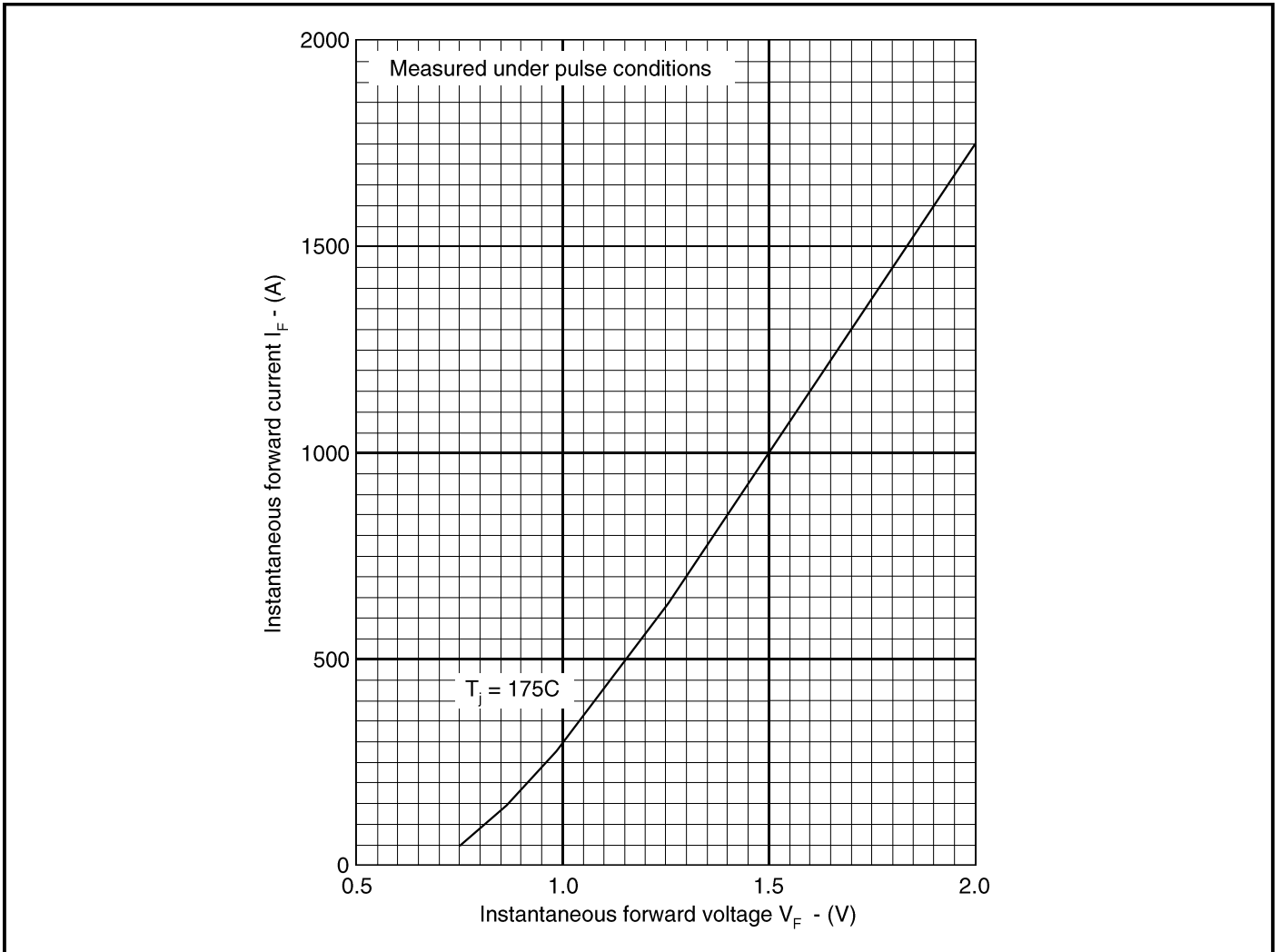


Fig.1 Maximum (limit) forward characteristics

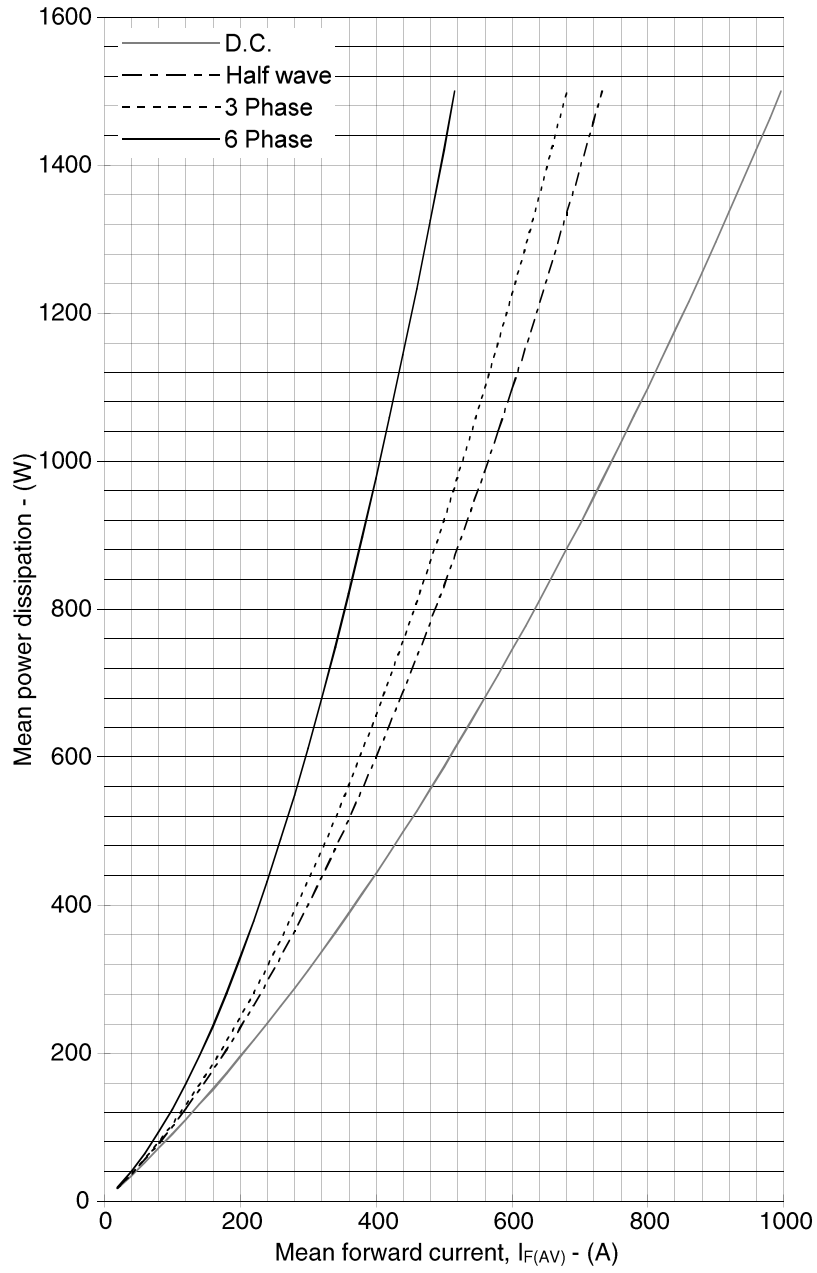


Fig.2 Dissipation curves

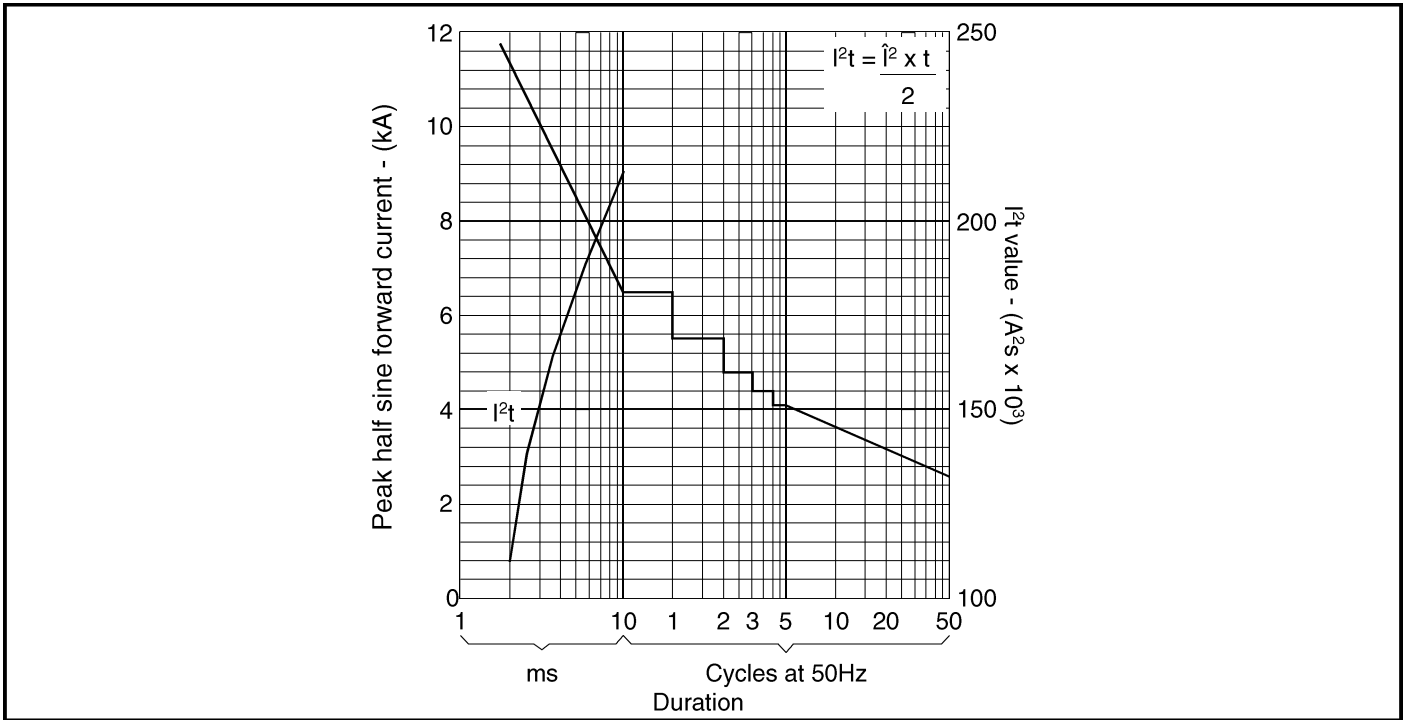


Fig.3 Surge (non-repetitive) forward current vs time (with 50% V_{RRM} @ $T_{case} = 175C$)

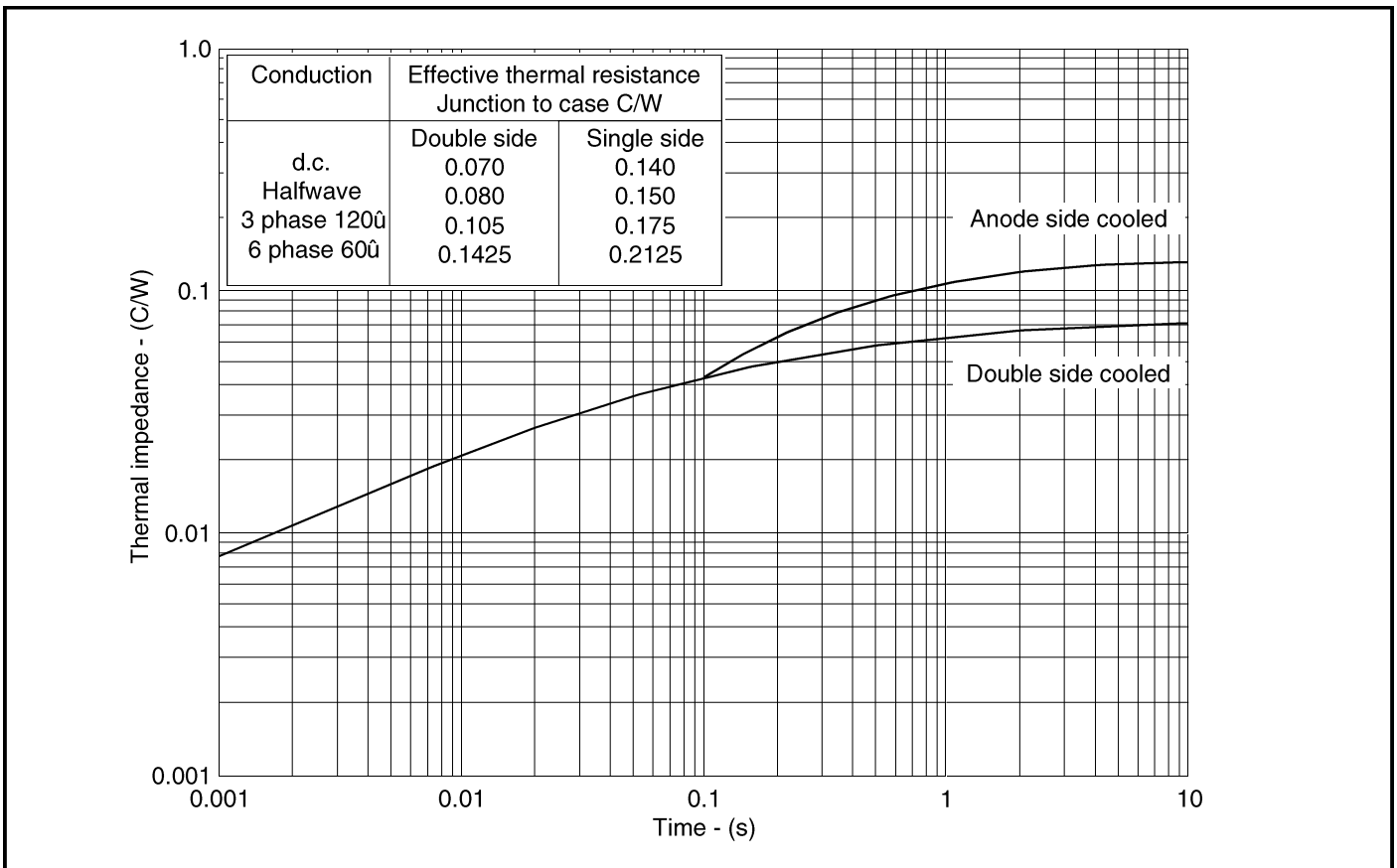


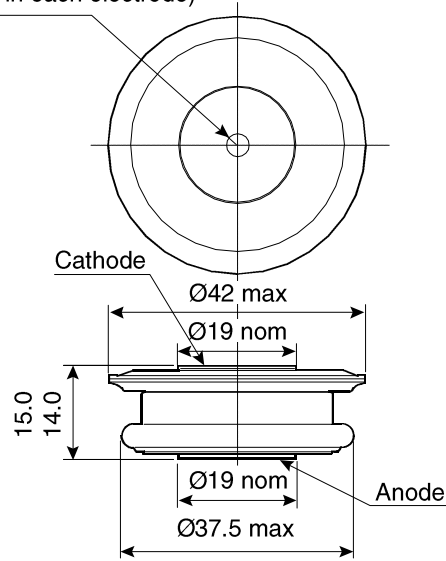
Fig.4 Maximum (limit) transient thermal impedance - junction to case - (C/W)

TR502ST

PACKAGE DETAILS

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

2 holes $\text{Ø}3.6 \times 2.0$ deep
(One in each electrode)



Nominal weight: 50g
Clamping force: 4.5kN $\pm 10\%$

Package outline type code: T