TV22..F

FAST RECOVERY DIODE

APPLICATIONS

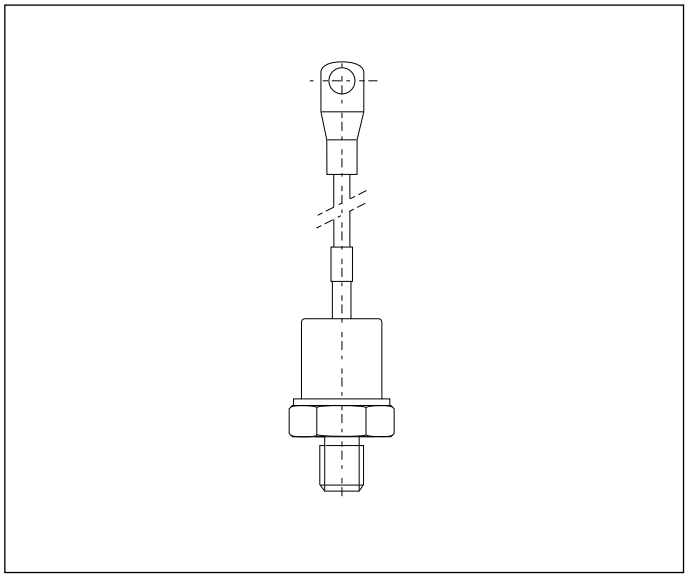
- Induction Heating.
- A.C. Motor Drives.
- Snubber Diode.
- Welding.
- High Frequency Rectification.
- UPS.

KEY PARAMETERS

V_{RRM}	1600V
$I_{F(AV)}$	305A
I_{FSM}	5000A
Q_r	70μC
t_{rr}	3.2μs

FEATURES

- Thermal Fatigue Free Pressure Contact.
- High Surge Capability.
- Low Recovery Charge.



Outline type codes: DO9.
See package outlines for further information.

VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM} V	Conditions
TV22 16F M or K	1600	$V_{RSM} = V_{RRM} + 100V$
TV22 14F M or K	1400	
TV22 12F M or K	1200	
TV22 10F M or K	1000	
TV22 08F M or K	800	
TV22 06F M or K	600	

For 3/4" 16 UNF thread, add suffix K, e.g. TV22 16FK.
For M16 thread, add suffix M, e.g. TV22 16FM.
For stud anode add 'R' to type number, e.g. TV22 16FMR.

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
$I_{F(AV)}$	Mean forward current	Half wave resistive load, T_{case} = 65°C	305	A
$I_{F(RMS)}$	RMS value	T_{case} = 65°C	346	A

SURGE RATINGS

Symbol	Parameter	Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; with 0% $V_{RRM,}$ T_j = 150°C	5.0	kA
I^2t	I^2t for fusing		125 x 10^3	A^2s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; with 50% $V_{RRM,}$ T_j = 150°C	-	kA
I^2t	I^2t for fusing		-	A^2s

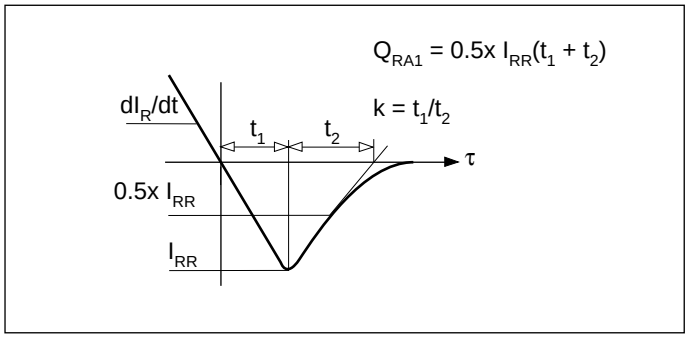
THERMAL AND MECHANICAL DATA

Symbol	Parameter	Conditions	Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance - junction to case	dc	-	0.16	°C/W
$R_{th(c-h)}$	Thermal resistance - case to heatsink	Mounting torque 35.0Nm with mounting compound	-	0.06	°C/W
T_{vj}	Virtual junction temperature	On-state (conducting)	-	150	°C
T_{stg}	Storage temperature range		-55	175	°C
-	Mounting torque		30.0	35.0	Nm

CHARACTERISTICS

Symbol	Parameter	Conditions	Typ.	Max.	Units
V_{FM}	Forward voltage	At 750A peak, T_{case} = 25°C	-	1.6	V
I_{RRM}	Peak reverse current	At V_{RRM}, T_{case} = 150°C	-	40	mA
t_{rr}	Reverse recovery time	I_F = 750A, di_{RR}/dt = 100A/µs T_{case} = 125°C, V_R = 100V	-	3.2	µs
Q_{RA1}	Recovered charge (50% chord)		-	70	µC
I_{RM}	Reverse recovery current		-	43	A
K	Soft factor		1.8	-	-
V_{TO}	Threshold voltage	At T_{vj} = 150°C	-	1.0	V
r_T	Slope resistance	At T_{vj} = 150°C	-	0.8	mΩ
V_{FRM}	Forward recovery voltage	di/dt = 1000A/µs, T_j = 125°C	-	-	V

DEFINITION OF K FACTOR AND Q_{RA1}



CURVES

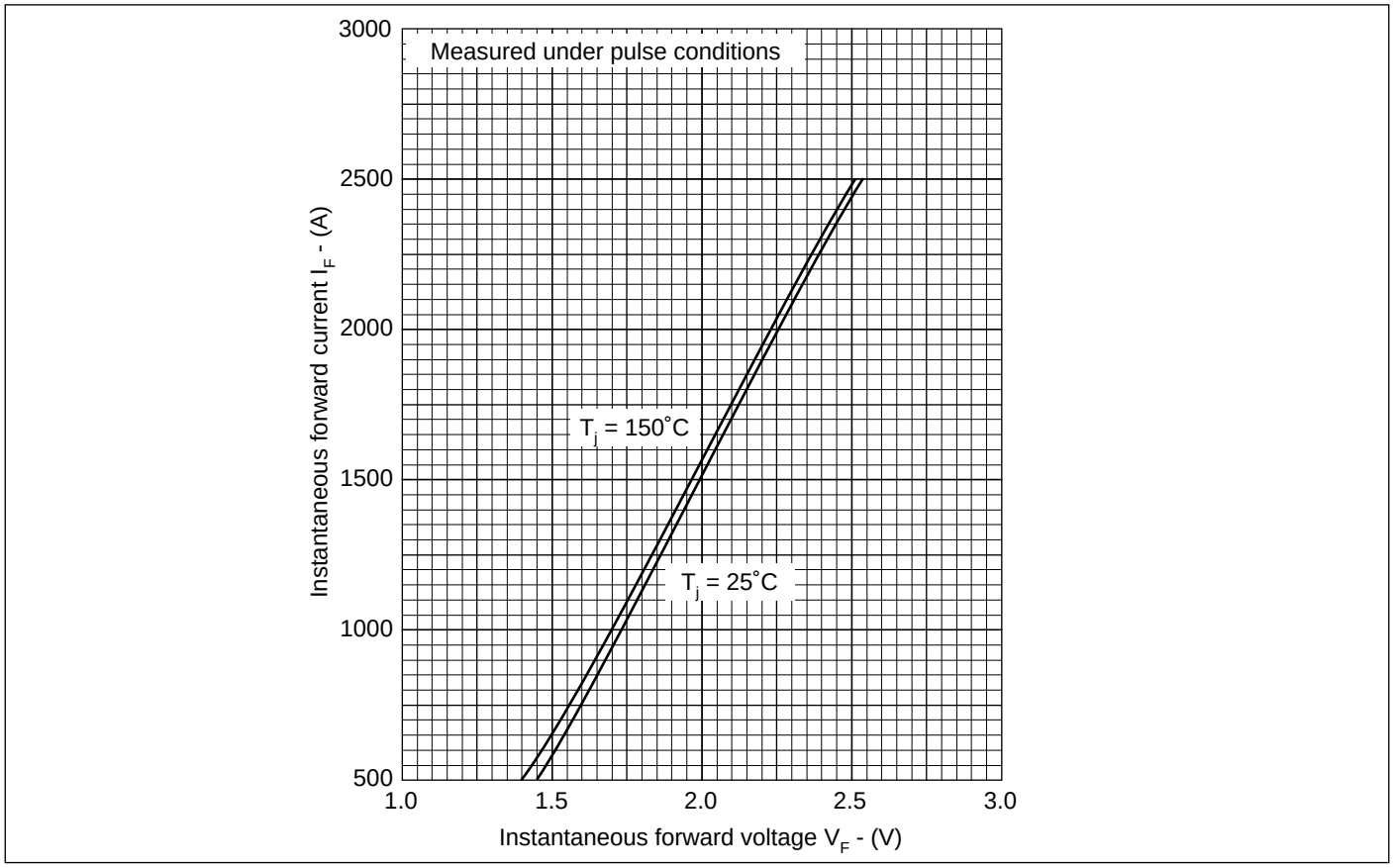


Fig.1 Maximum (limit) forward characteristics

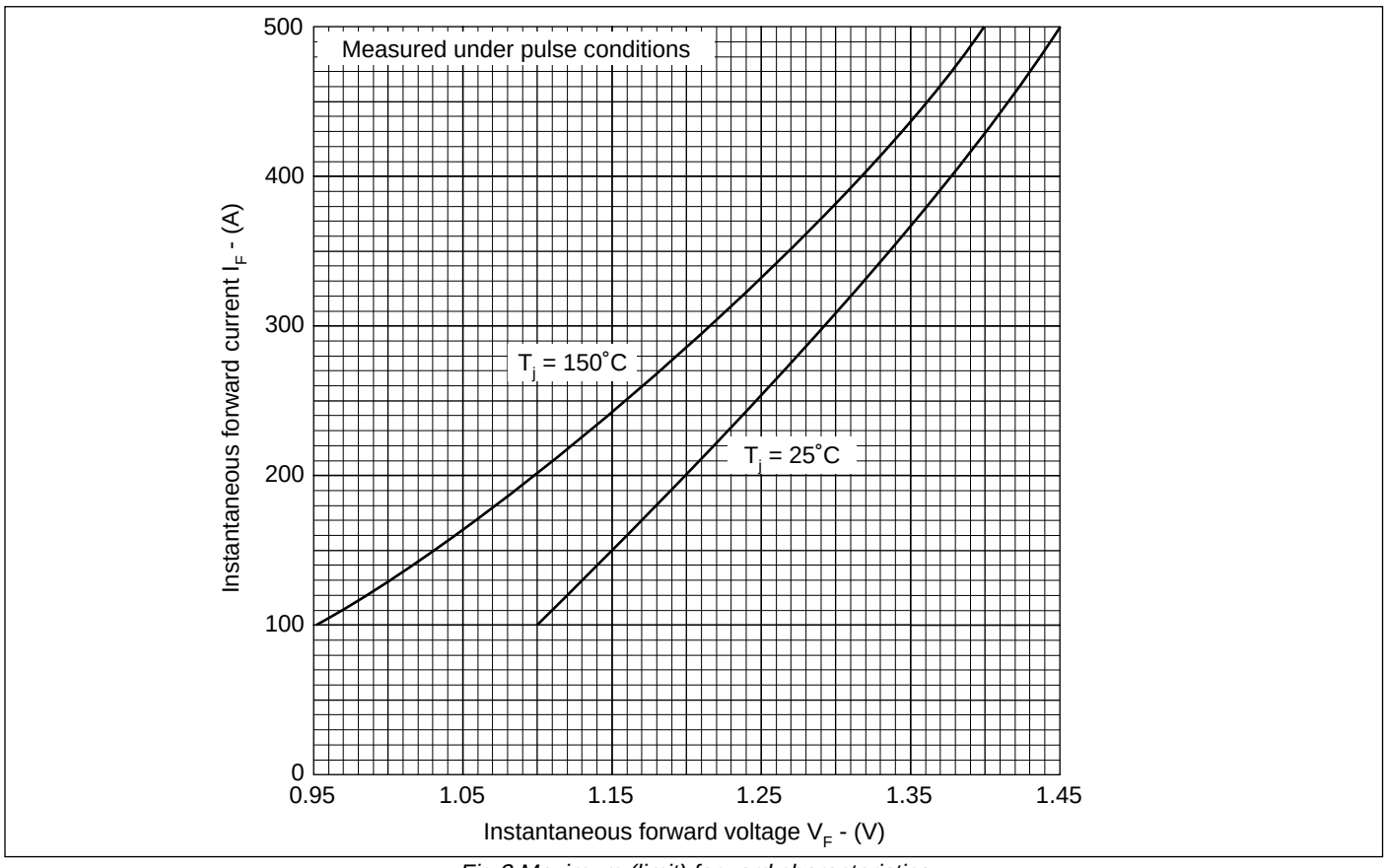


Fig.2 Maximum (limit) forward characteristics

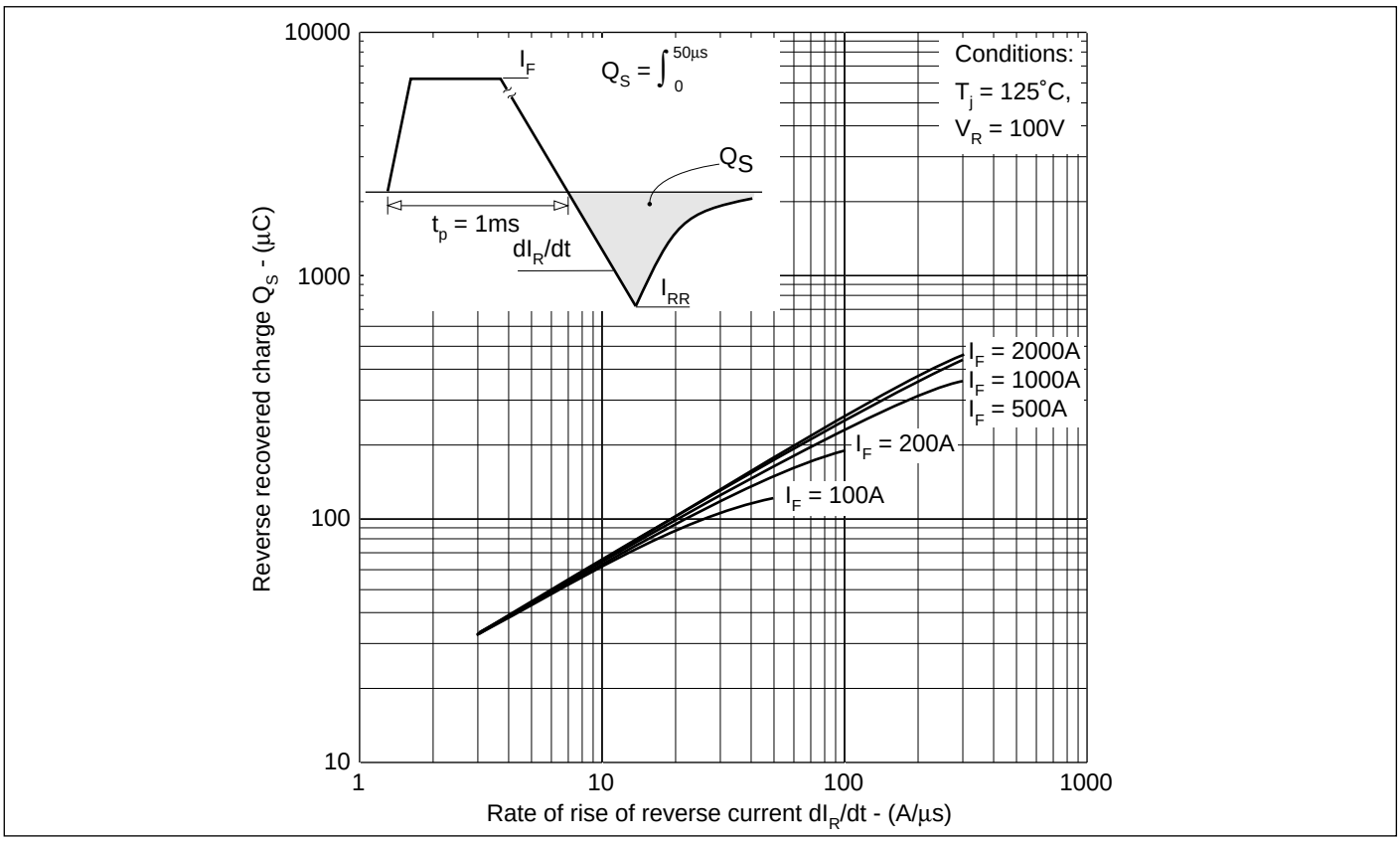


Fig.3 Recovered charge

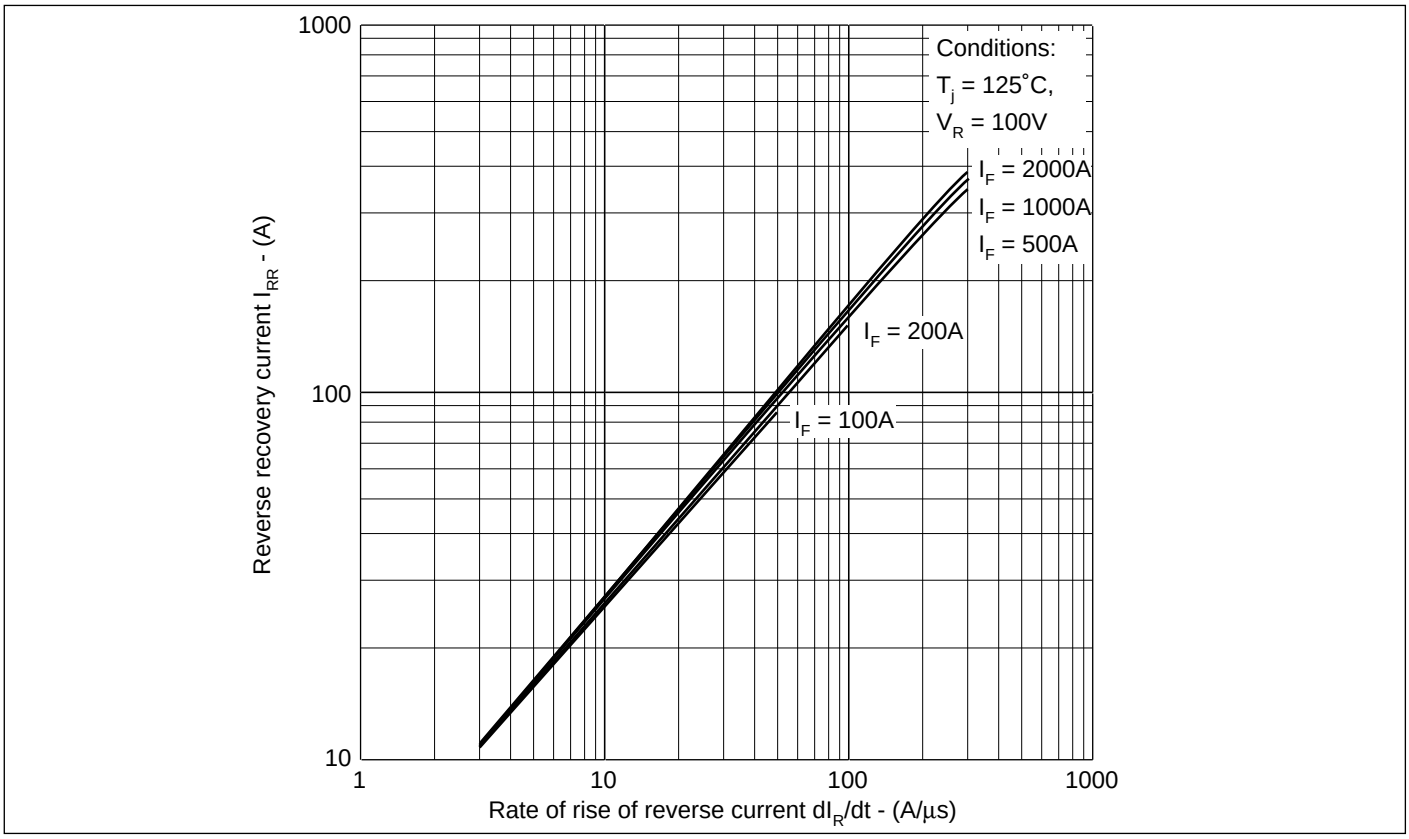


Fig.4 Typical reverse recovery current vs rate of rise of reverse current

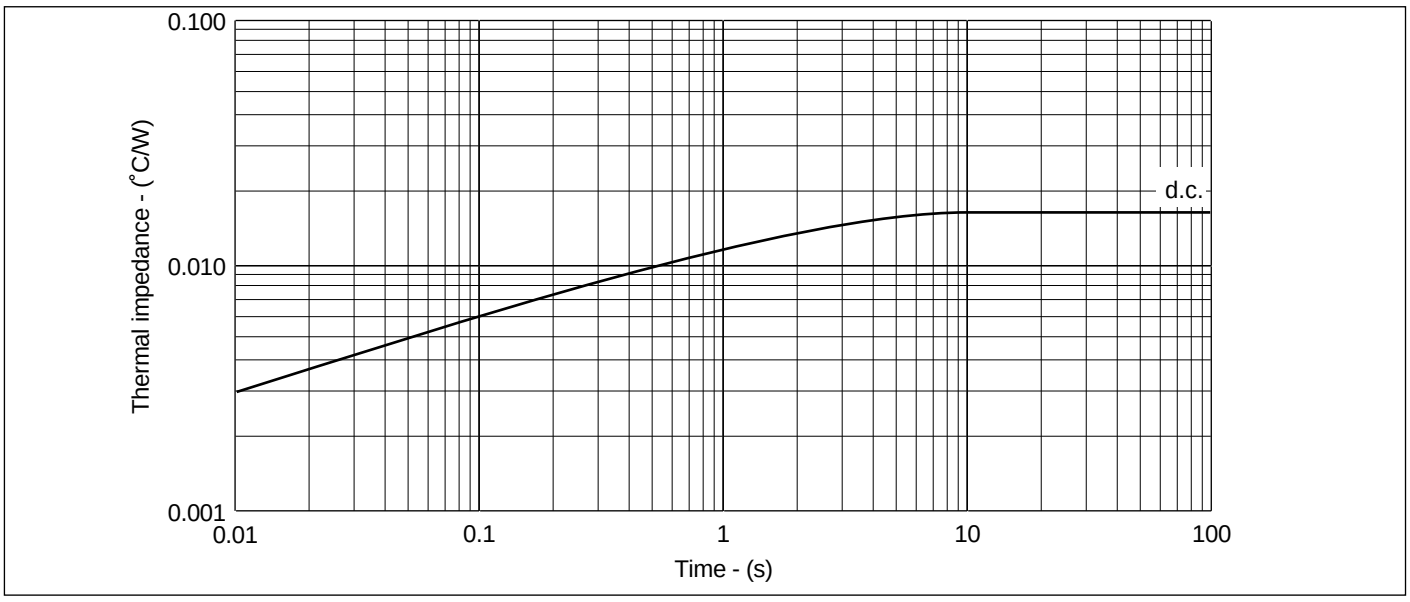
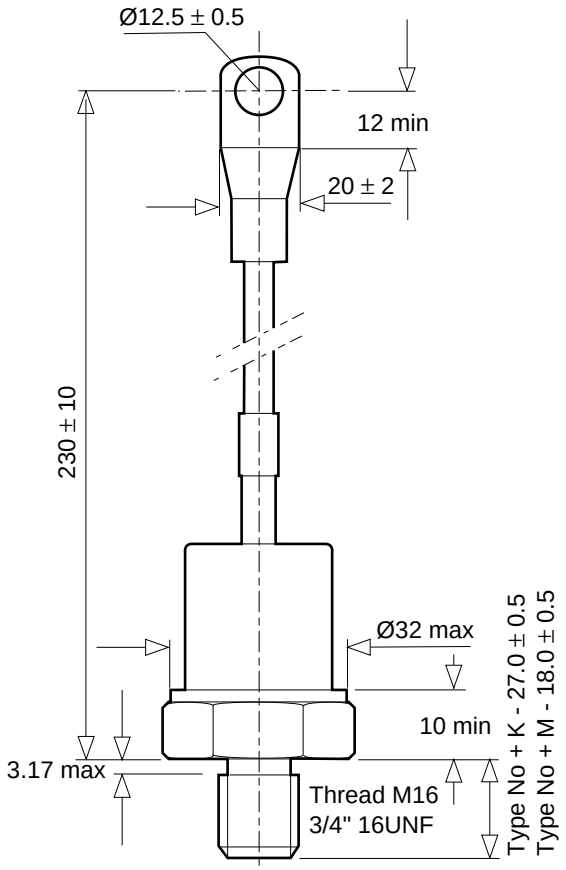


Fig.5 Maximum (limit) transient thermal impedance - junction to case - (˚C/W)

PACKAGE DETAILS - DO9

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



Weight: 290g

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