SV05..F

FAST RECOVERY DIODE

APPLICATIONS

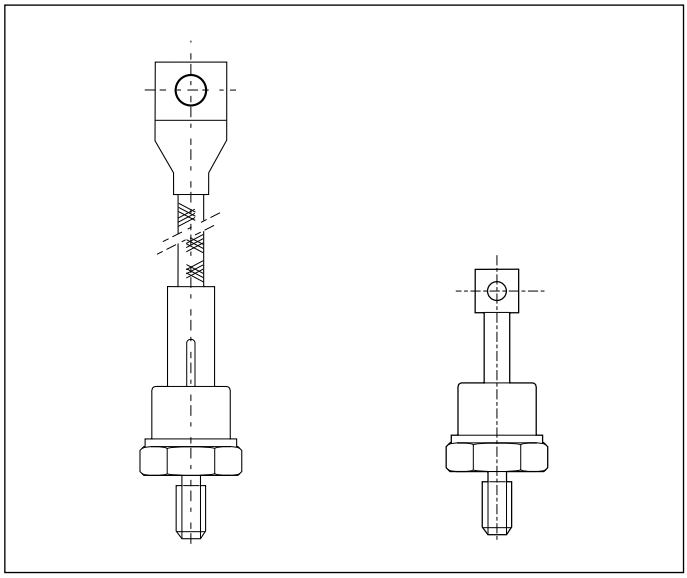
- Induction Heating.
- A.C. Motor Drives.
- Snubber Diode.
- Welding.
- High Frequency Rectification.
- UPS.

KEY PARAMETERS

V_{RRM}	2500V
$I_{F(AV)}$	145A
I_{FSM}	2500A
Q_r	150μC
t_{rr}	2.2μs

FEATURES

- Double Side Cooling.
- High Surge Capability.
- Low Recovery Charge.



Outline type codes: DO8 and DO8C.
TSee package outlines for further information.

VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM} V	Conditions
SV05 25F M or K	2500	$V_{RSM} = V_{RRM} + 100V$
SV05 24F M or K	2400	
SV05 22F M or K	2200	
SV05 20F M or K	2000	

For 1/2" 20 UNF thread, add suffix K, e.g. SV05 25FK.
For M12 thread, add suffix M, e.g. SV05 25FM.
For stud anode add 'R' to type number, e.g. SV05 25FMR.
For outline DO8C add suffix 'C' to typ number,
e.g. SV05 25FKC.

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
$I_{F(AV)}$	Mean forward current	Half wave resistive load, T_{case} = 65ºC	145	A
$I_{F(RMS)}$	RMS value	T_{case} = 65ºC	225	A
I_F	Continuous (direct) forward current	T_{case} = 65ºC	195	A

SURGE RATINGS

Symbol	Parameter	Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; with 0% $V_{RRM,}$ T_j = 150ºC	2.5	kA
I^2t	I^2t for fusing		31 x 10^3	A^2s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; with 50% $V_{RRM,}$ T_j = 150ºC	2.0	kA
I^2t	I^2t for fusing		20 x 10^3	A^2s

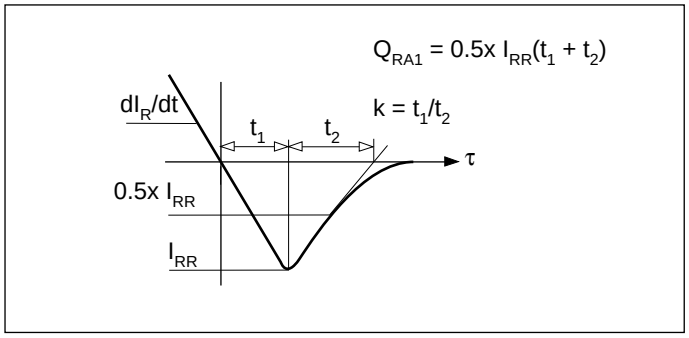
THERMAL AND MECHANICAL DATA

Symbol	Parameter	Conditions	Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance - junction to case	dc	-	0.23	ºC/W
$R_{th(c-h)}$	Thermal resistance - case to heatsink	Mounting torque 15Nm with mounting compound	-	0.02	ºC/W
T_{vj}	Virtual junction temperature	On-state (conducting)	-	150	ºC
T_{stg}	Storage temperature range		-55	150	ºC
-	Mounting torque		13.5	16.5	Nm

CHARACTERISTICS

Symbol	Parameter	Conditions	Typ.	Max.	Units
V_{FM}	Forward voltage	At 600A peak, T_{case} = 25°C	-	2.8	V
I_{RRM}	Peak reverse current	At V_{RRM}, T_{case} = 150°C	-	50	mA
t_{rr}	Reverse recovery time	I_F = 600A, di_{RR}/dt = 80A/µs T_{case} = 150°C, V_R = 100V	2.2	-	µs
Q_{RA1}	Recovered charge (50% chord)		-	150	µC
I_{RM}	Reverse recovery current		-	140	A
K	Soft factor		-	-	-
V_{TO}	Threshold voltage	At T_{vj} = 150°C	-	1.4	V
r_T	Slope resistance	At T_{vj} = 150°C	-	2.5	mΩ
V_{FRM}	Forward recovery voltage	di/dt = 1000A/µs, T_j = 125°C	-	250	V

DEFINITION OF K FACTOR AND Q_{RA1}



CURVES

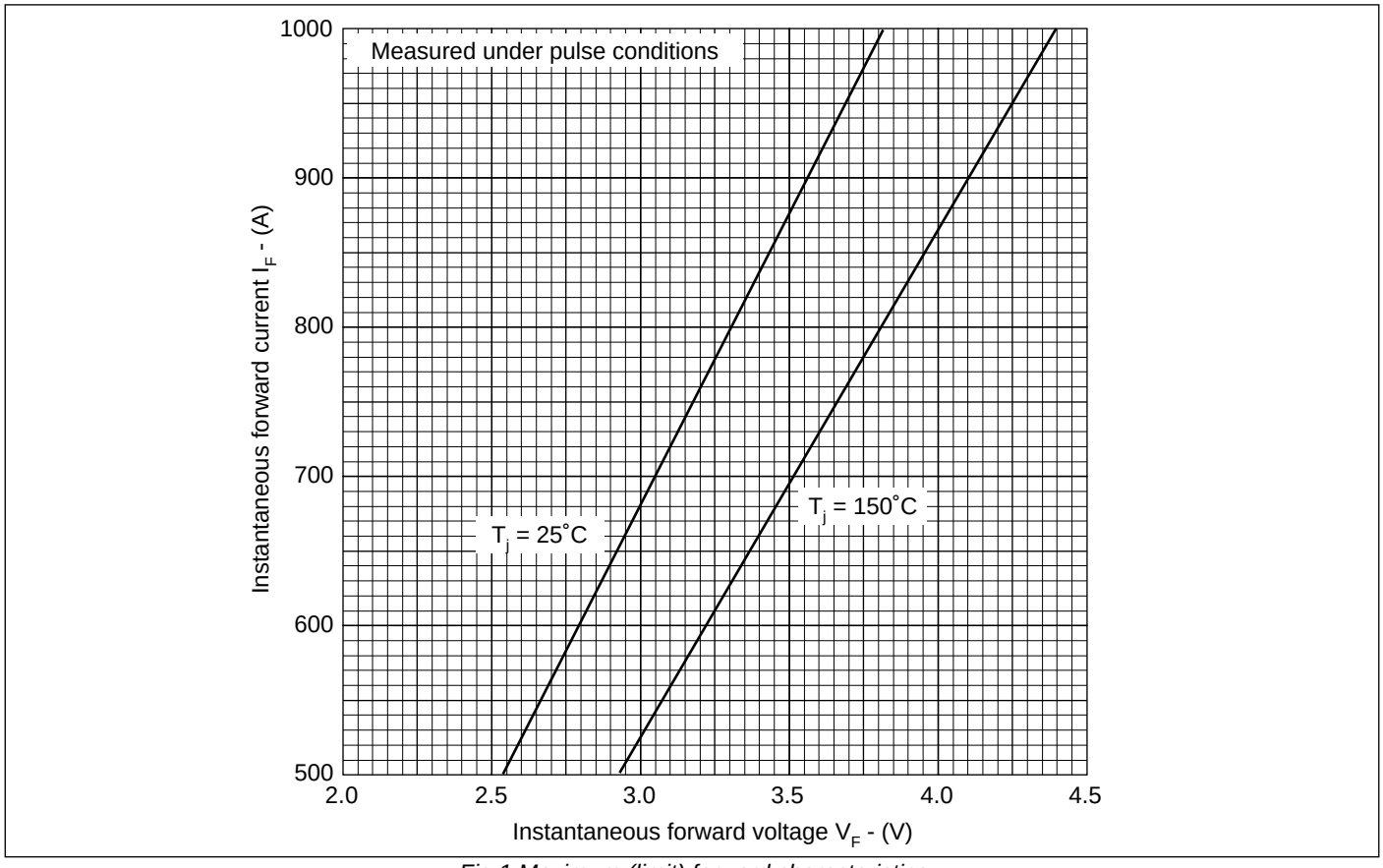


Fig.1 Maximum (limit) forward characteristics

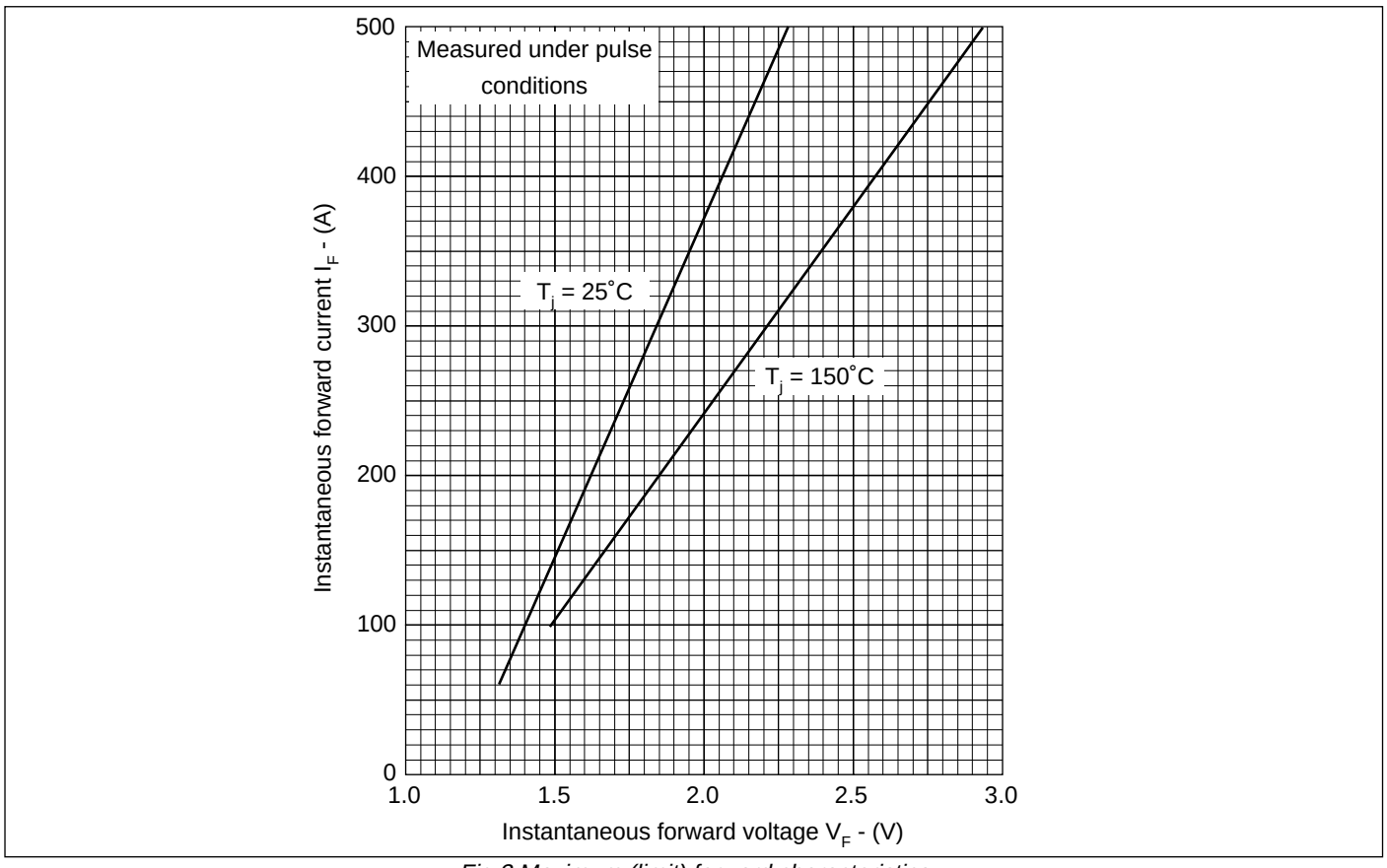


Fig.2 Maximum (limit) forward characteristics

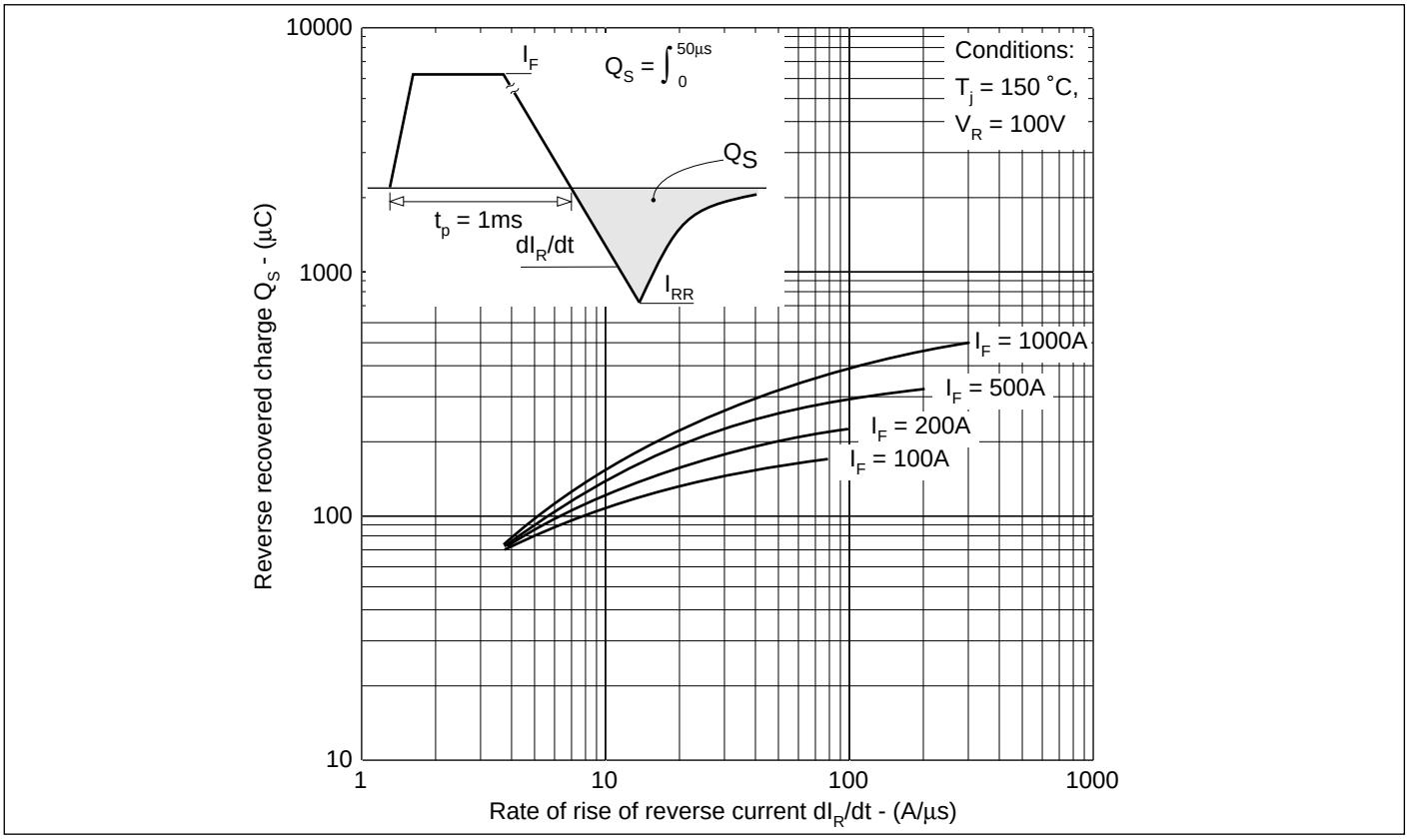


Fig.3 Recovered charge

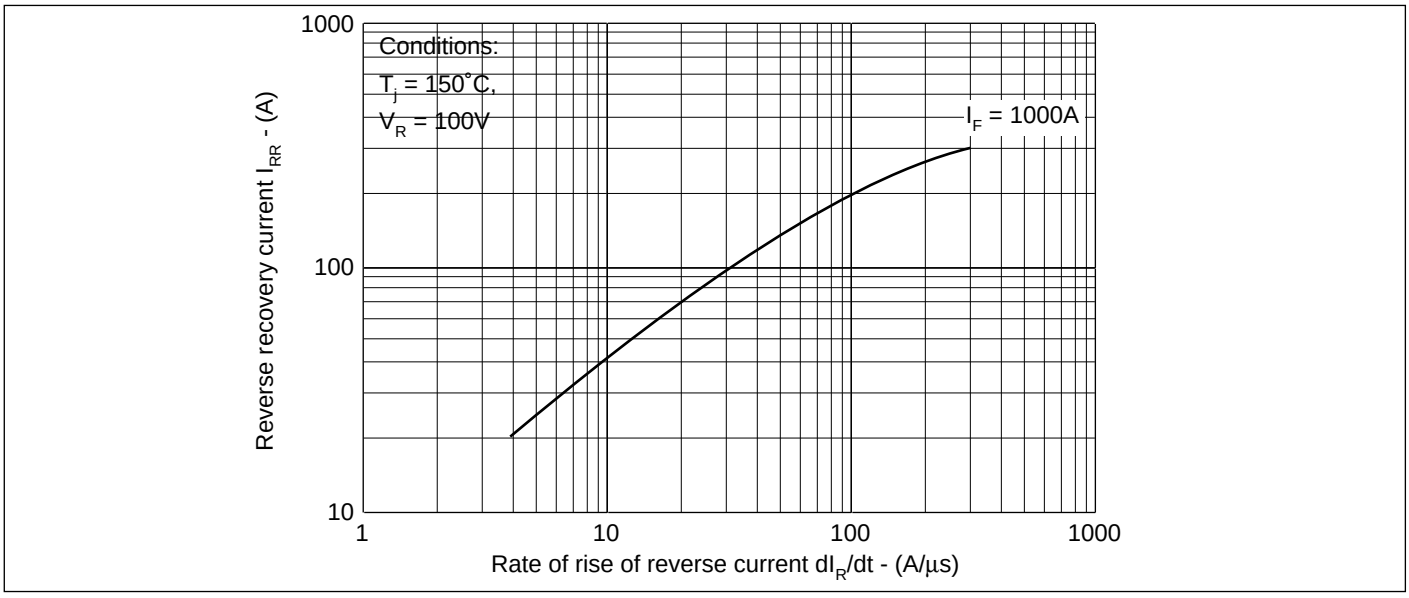


Fig.4 Typical reverse recovery current vs rate of rise of reverse current

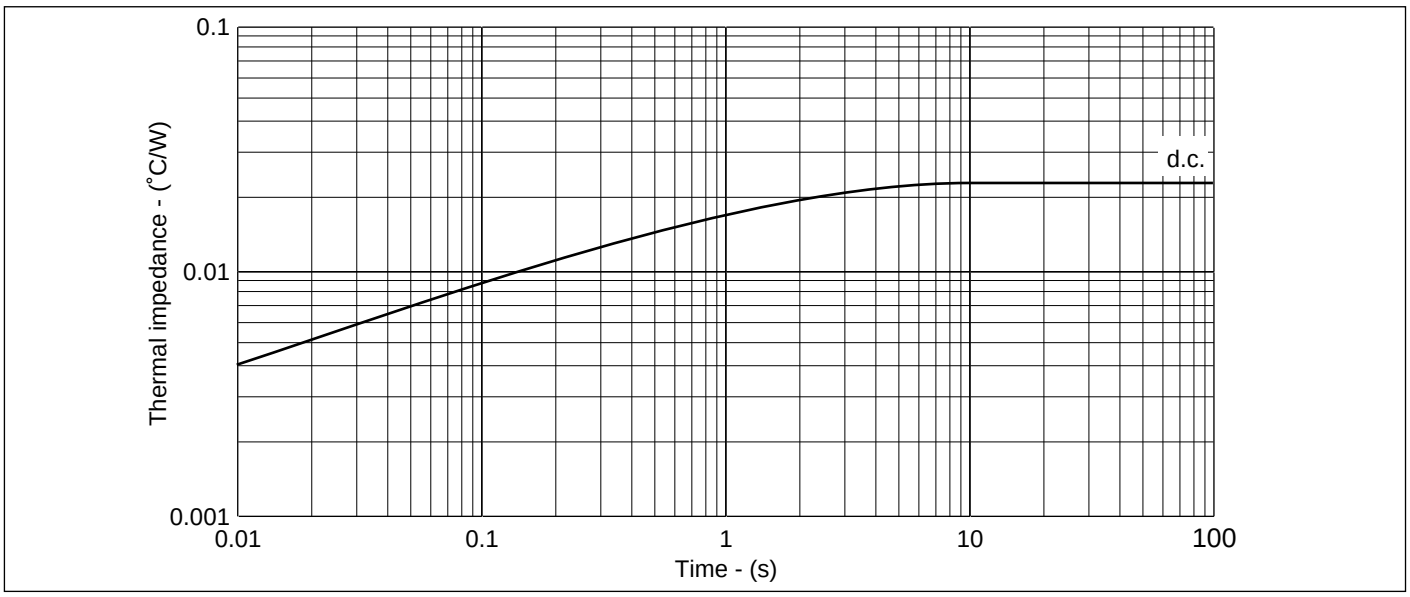
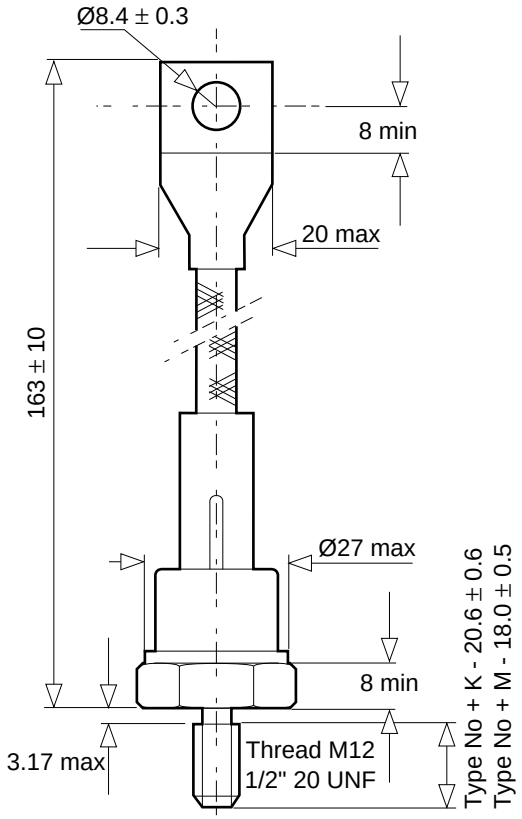


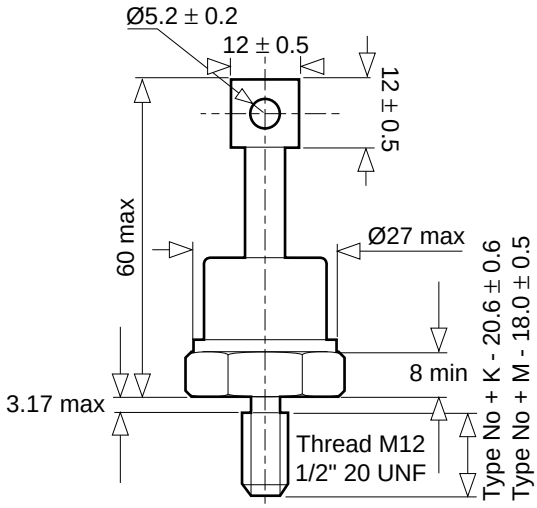
Fig.5 Maximum (limit) transient thermal impedance - junction to case - (˚C/W)

PACKAGE DETAILS - DO8 and DO8C

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



Weight: 160g



Weight: 120g

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