TV18..F

FAST RECOVERY DIODE

APPLICATIONS

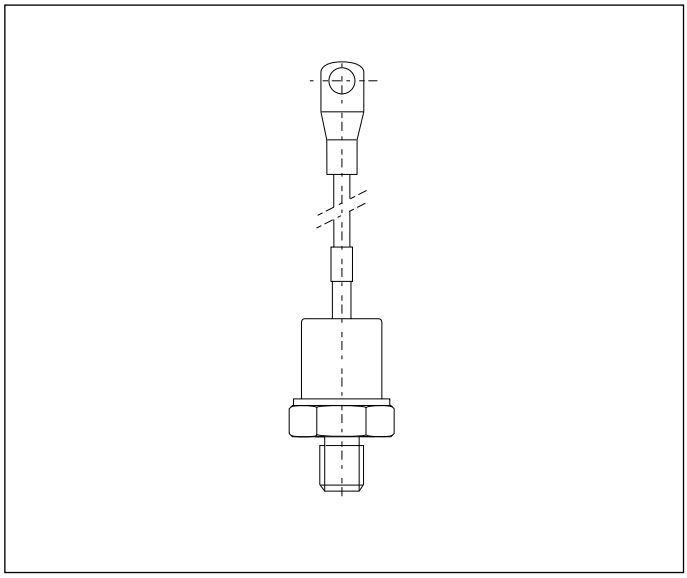
- Induction Heating.
- A.C. Motor Drives.
- Snubber Diode.
- Welding.
- High Frequency Rectification.
- UPS.

KEY PARAMETERS

V_{RRM}	2500V
$I_{F(AV)}$	200A
I_{FSM}	3500A
Q_r	240μC
t_{rr}	2.0μs

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
TV18 25F M or K	2500	$V_{RSM} = V_{RRM} + 100V$
TV18 24F M or K	2400	
TV18 22F M or K	2200	
TV18 20F M or K	2000	

For 3/4" 16 UNF thread, add suffix K, e.g. TV18 25FK.
For M16 thread, add suffix M, e.g. TV18 25FM.
For stud anode add 'R' to type number, e.g. TV18 25FMR.

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
$I_{F(AV)}$	Mean forward current	Half wave resistive load, T_{case} = 65°C	200	A
$I_{F(RMS)}$	RMS value	T_{case} = 65°C	320	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	3.5	kA
I^2t	I^2t for fusing		61 x 10^3	A^2s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; with 50% $V_{RRM,}$ T_j = 150°C	2.8	kA
I^2t	I^2t for fusing		39.2x 10^3	A^2s

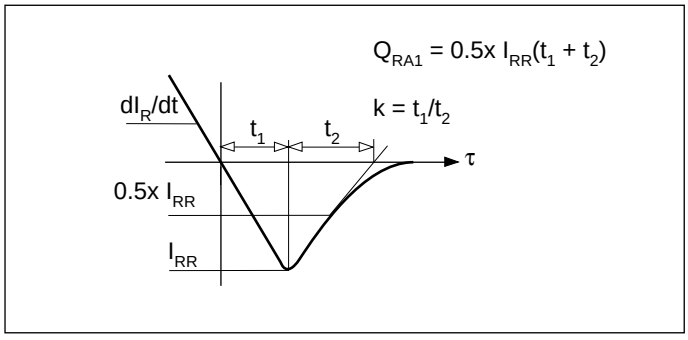
THERMAL AND MECHANICAL DATA

Symbol	Parameter	Conditions	Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance - junction to case	dc	-	0.16	°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 1000A peak, T_{case} = 25°C	-	3.1	V
I_{RRM}	Peak reverse current	At V_{RRM}, T_{case} = 150°C	-	50	mA
t_{rr}	Reverse recovery time	I_F = 1000A, di_{RR}/dt = 100A/µs T_{case} = 150°C, V_R = 100V	-	3.2	µs
Q_{RA1}	Recovered charge (50% chord)		-	240	µC
I_{RM}	Reverse recovery current		-	160	A
K	Soft factor		1.3	-	-
V_{TO}	Threshold voltage	At T_{vj} = 150°C	-	1.64	V
r_T	Slope resistance	At T_{vj} = 150°C	-	1.54	mΩ
V_{FRM}	Forward recovery voltage	di/dt = 1000A/µs, T_j = 125°C	-	120	V

DEFINITION OF K FACTOR AND Q_{RA1}



CURVES

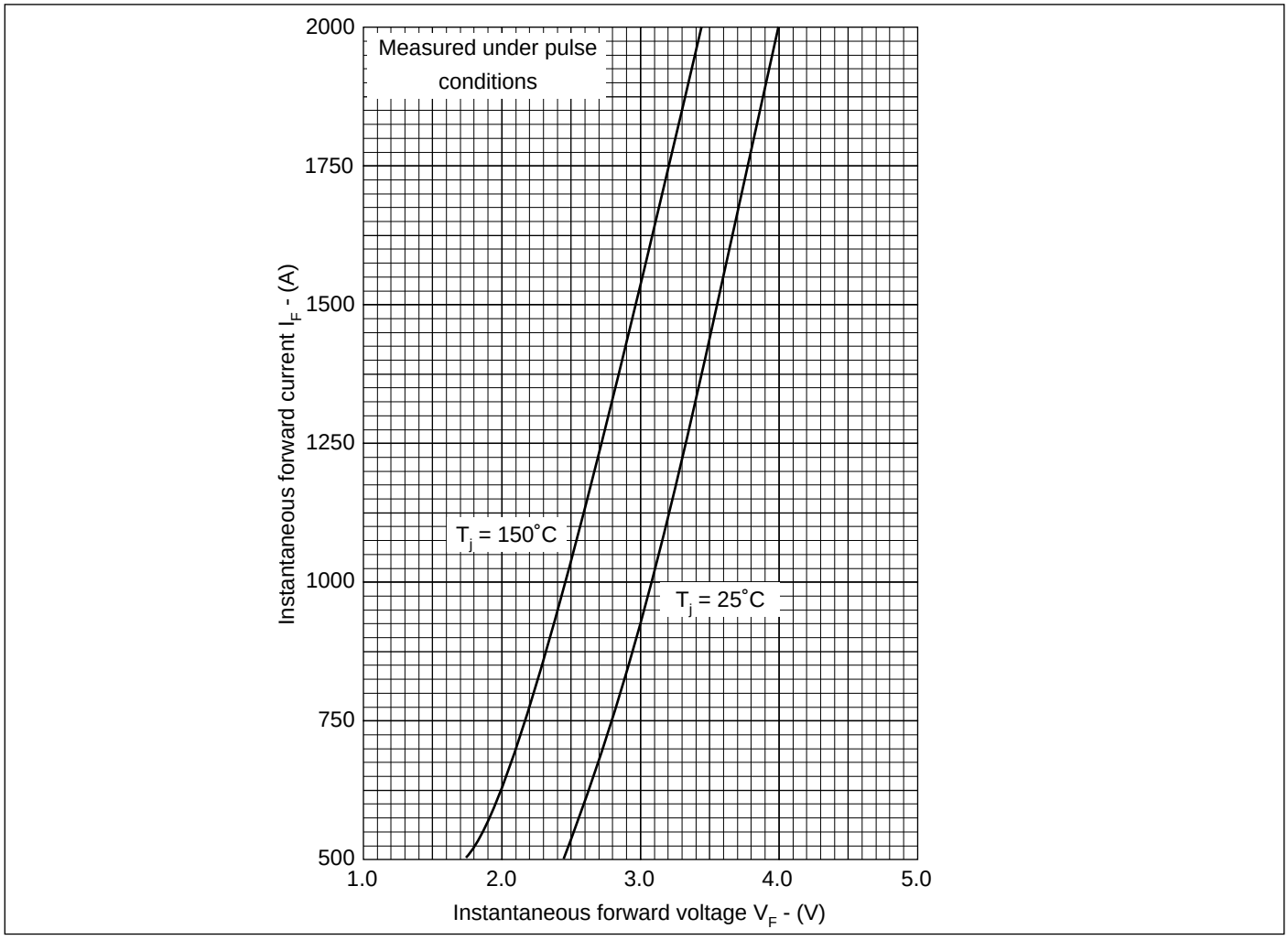


Fig.1 Maximum (limit) forward characteristics

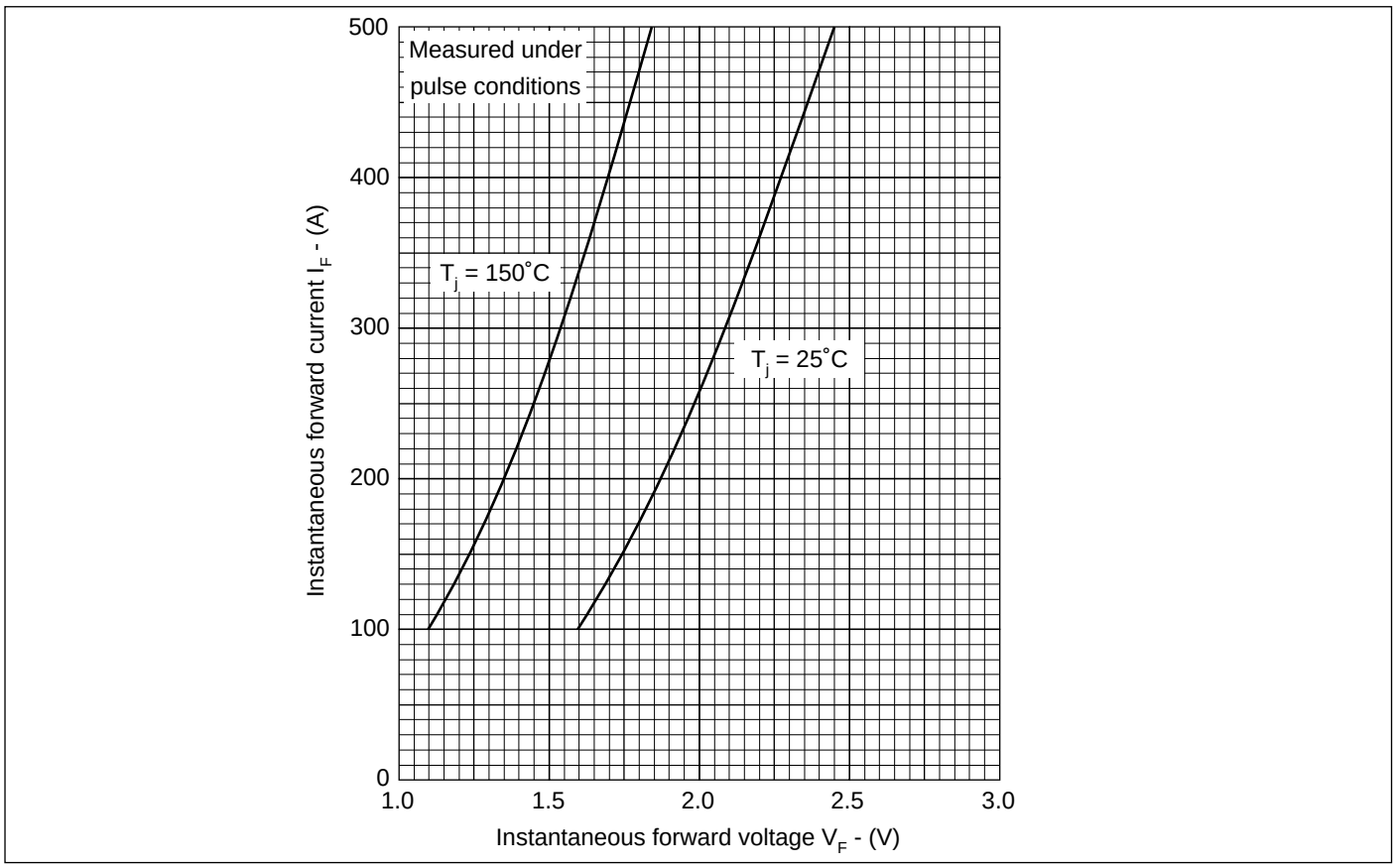


Fig.2 Maximum (limit) forward characteristics

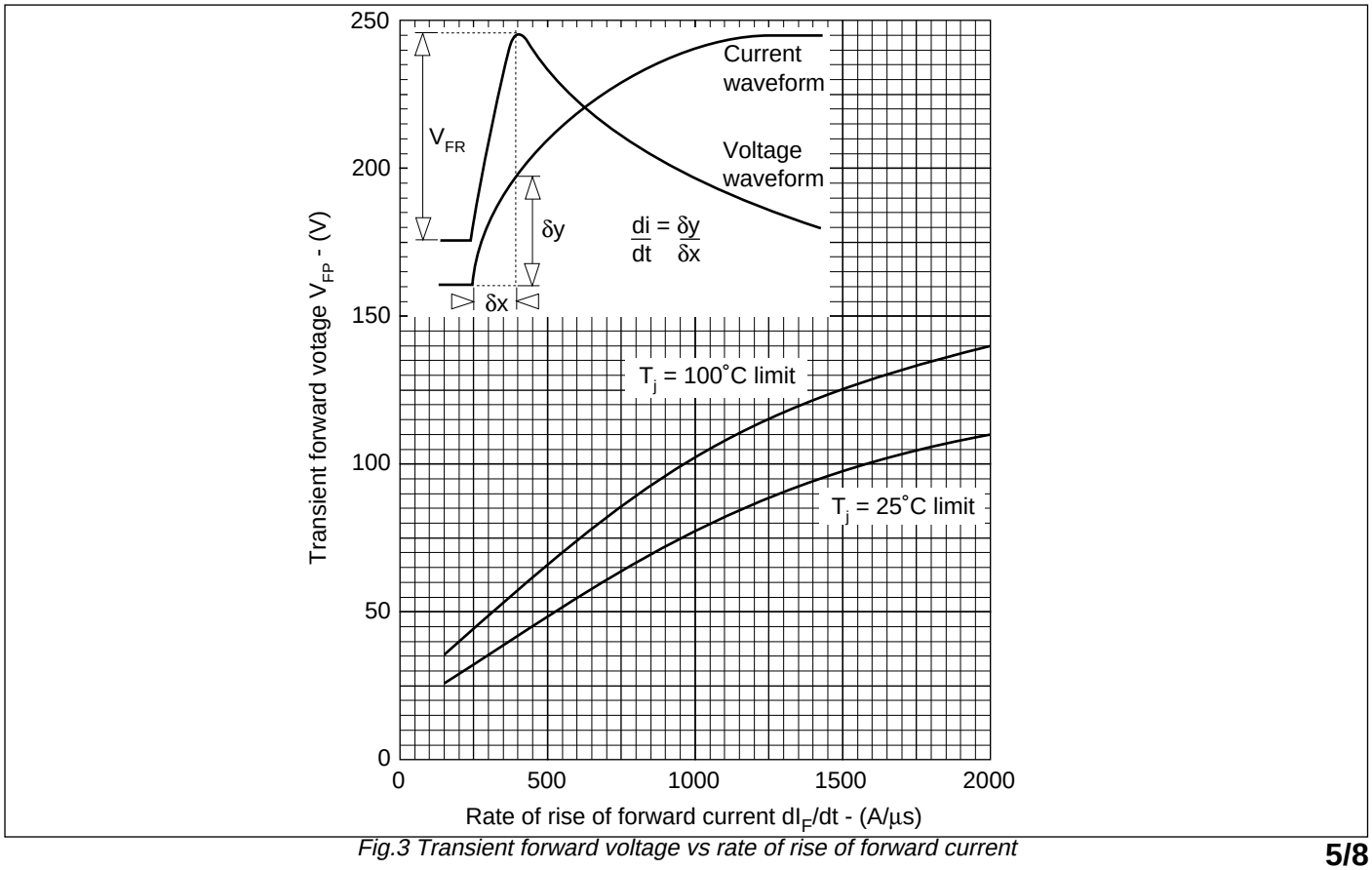


Fig.3 Transient forward voltage vs rate of rise of forward current

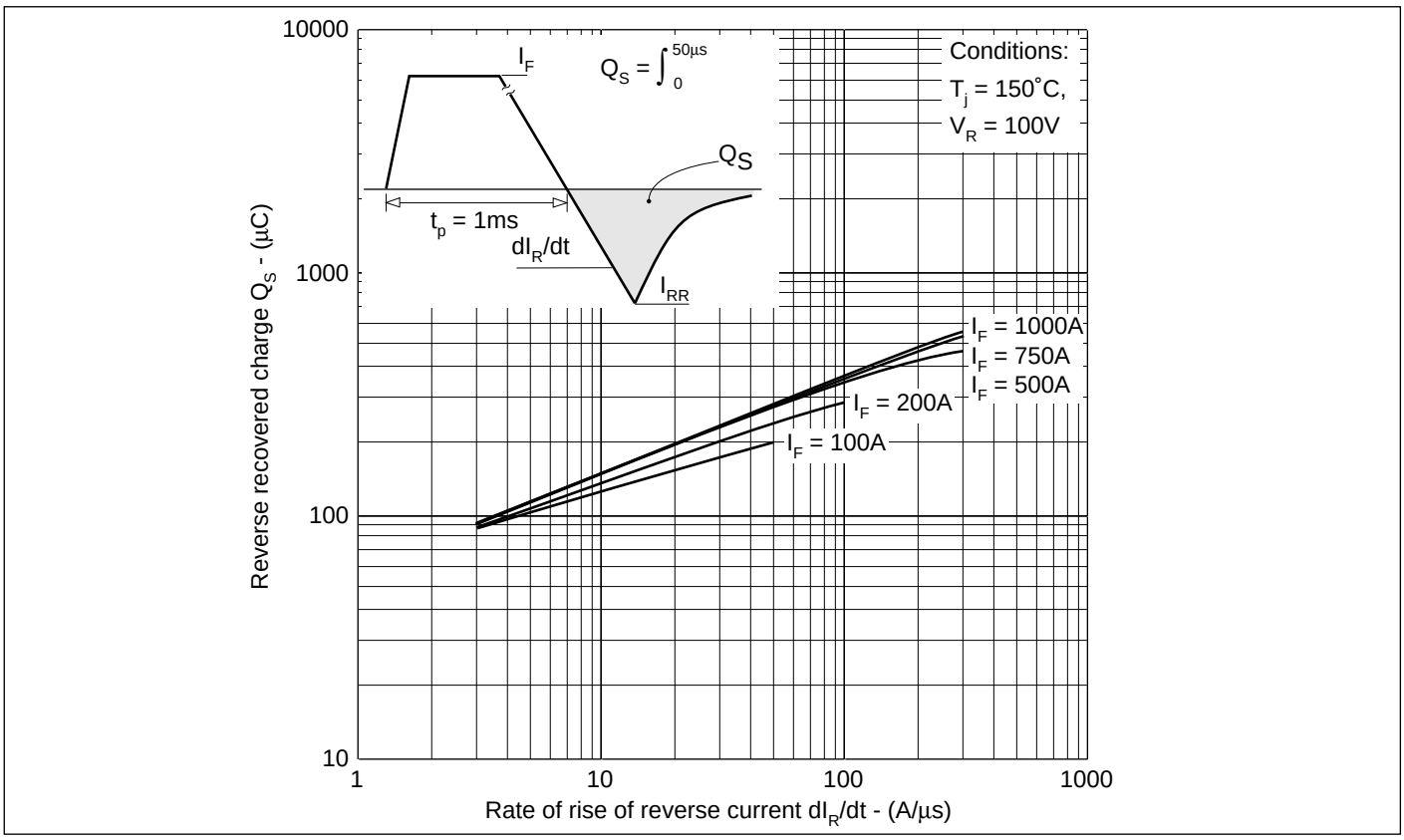


Fig.4 Recovered charge

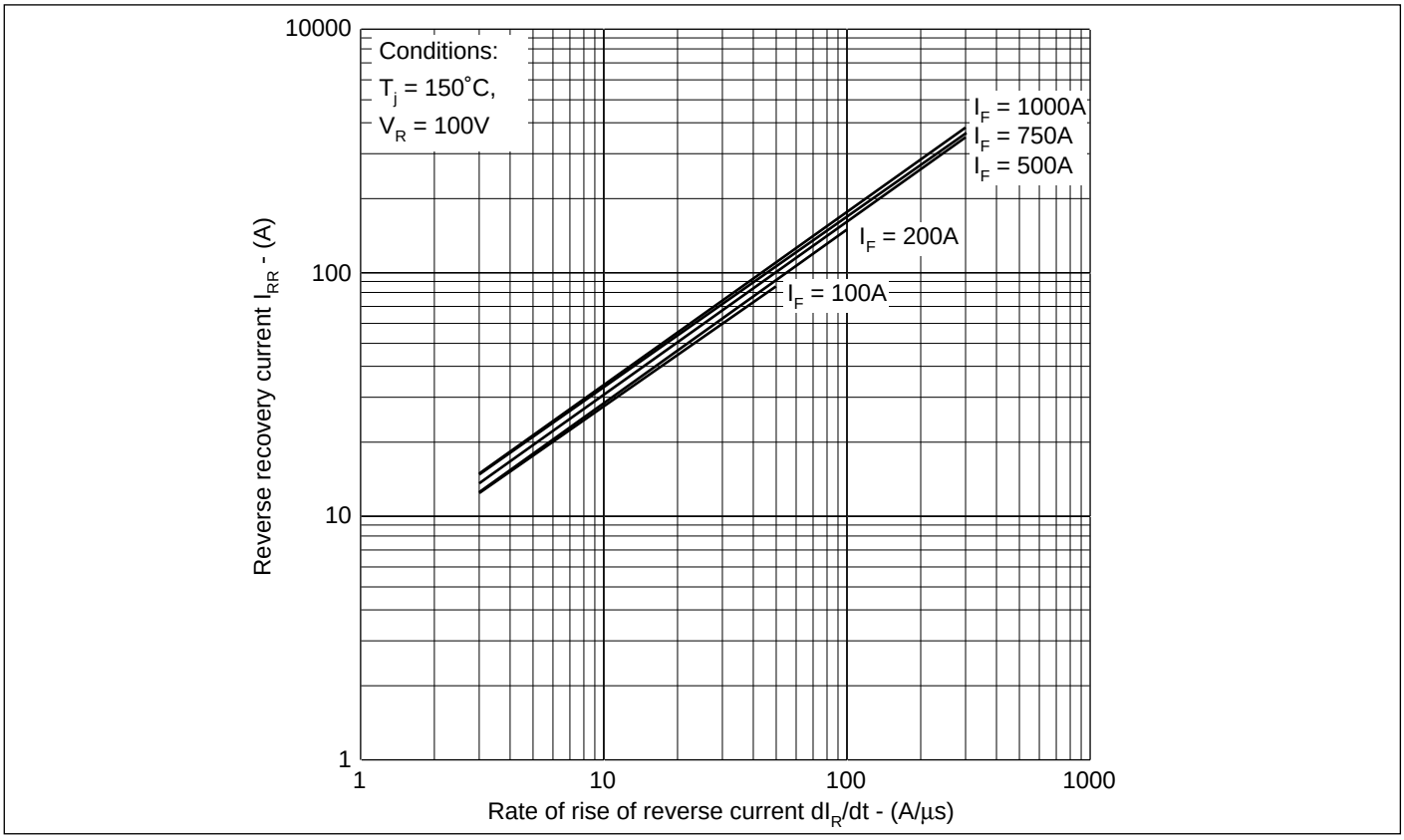


Fig.5 Typical reverse recovery current vs rate of rise of reverse current

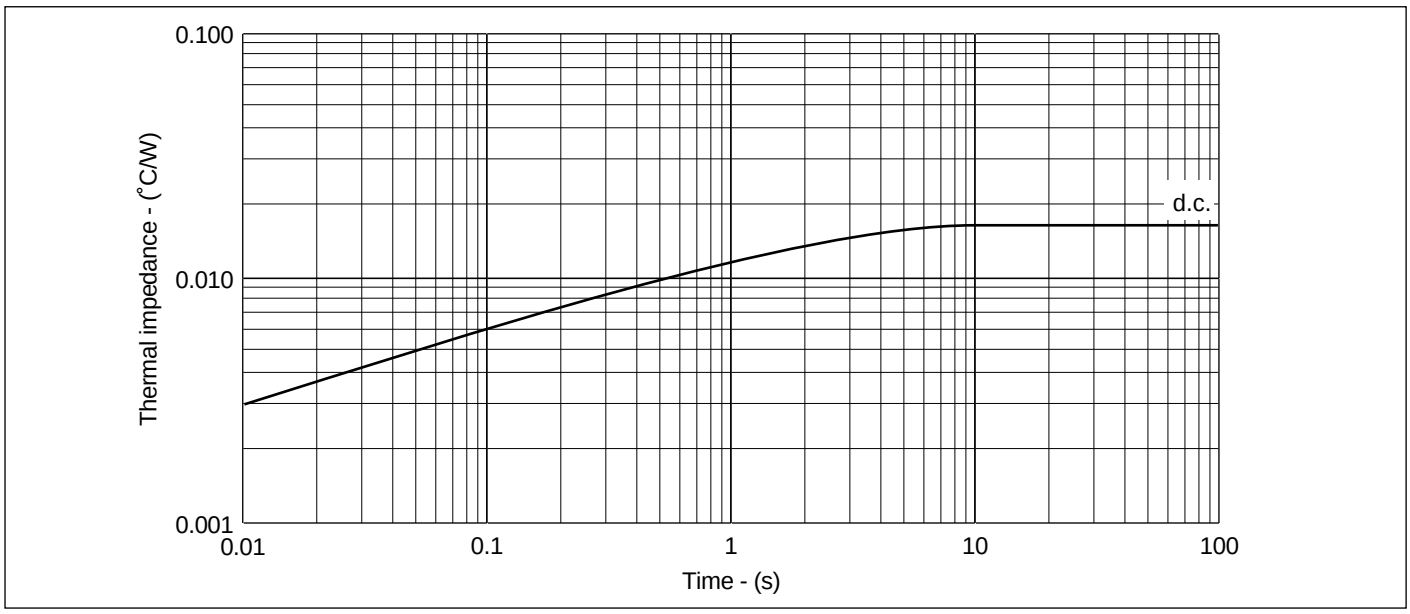
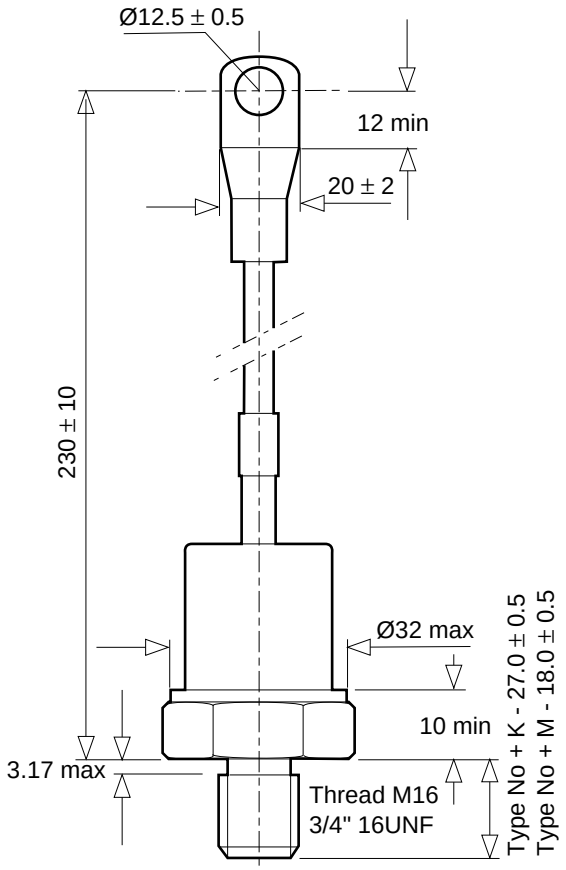


Fig.6 Maximum (limit) transient thermal impedance - junction to case - (˚C/W)

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

GEC PLESSEY SEMICONDUCTORS

HEADQUARTERS OPERATIONS

GEC PLESSEY SEMICONDUCTORS
Cheney Manor, Swindon,
Wiltshire, SN2 2QW, United Kingdom.
Tel: + 44 (0)1793 518000
Fax: + 44 (0)1793 518411

GEC PLESSEY SEMICONDUCTORS
P.O. Box 660017
1500 Green Hills Road,
Scotts Valley, California 95067-0017,
United States of America.
Tel: + 1 (408) 438 2900
Fax: + 1 (408) 438 5576

POWER PRODUCT CUSTOMER SERVICE CENTRES

- **FRANCE.** 2 rue Henri-Bergson, 92665 Asnieres Cedex.
  Tel: + 33 1 40 80 54 00. Fax: + 33 1 40 80 55 87.
- **GERMANY**. Ungererstrasse 129, 80505 München.
  Tel: + 49 (0)89 36 09 060. Fax: + 49 (0)89 36 09 06 55.
- **NORTH AMERICA.** At Dedham Place, Suite 125, 3 Allied Drive, Dedham. MA 02026.
  Tel: + 1 617 251 0126. Fax: + 1 617 251 0106.
- **UNITED KINGDOM.** Doddington Road, Lincoln. LN6 3LF.
  Tel: + 44 (0)1522 500500. Fax: + 44 (0)1522 500550.

These are supported by Agents and Distributors in major countries world-wide.

 Publication No. DS4211-2.1 January 1996