

**APPLICATIONS**

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

**KEY PARAMETERS**

$V_{RRM}$	<b>2500V</b>
$I_{F(AV)}$	<b>145A</b>
$I_{FSM}$	<b>2500A</b>
$Q_r$	<b>150<math>\mu</math>C</b>
$t_{rr}$	<b>2.2<math>\mu</math>s</b>

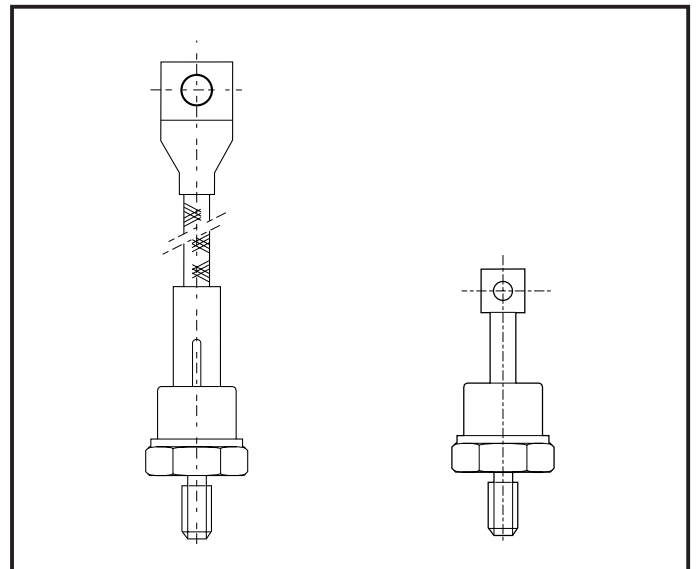
**FEATURES**

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

**VOLTAGE RATINGS**

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

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.



**Outline type codes: DO8 and DO8C.**  
**See Package Details for further information.**

**CURRENT RATINGS**

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

## SV05..F

### SURGE RATINGS

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

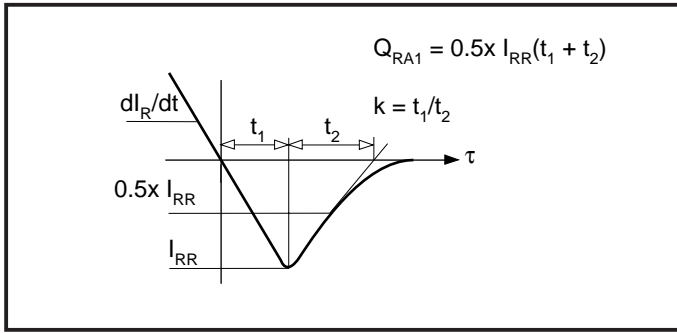
### THERMAL AND MECHANICAL DATA

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

### CHARACTERISTICS

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

DEFINITION OF K FACTOR AND  $Q_{RA1}$



CURVES

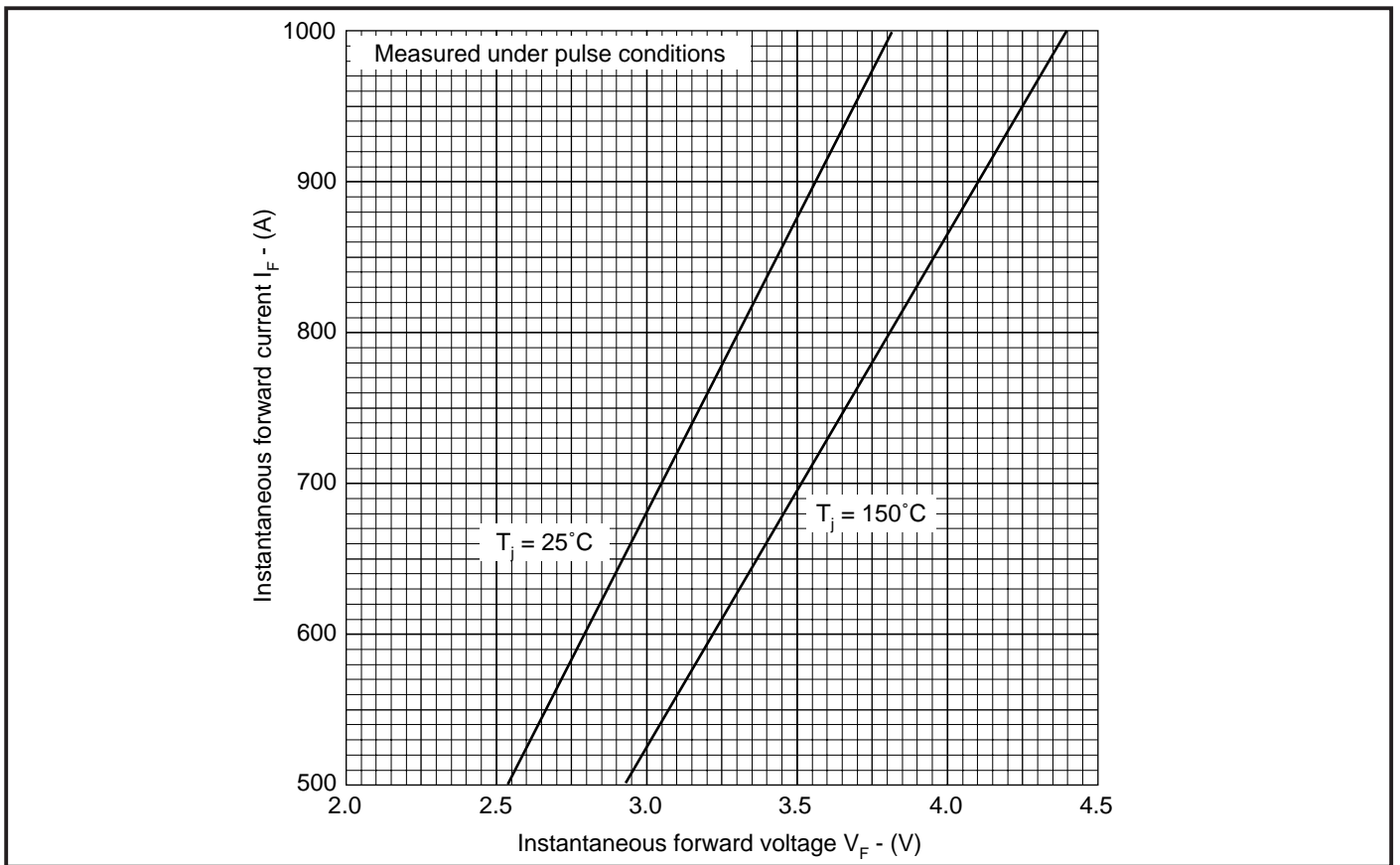


Fig.1 Maximum (limit) forward characteristics

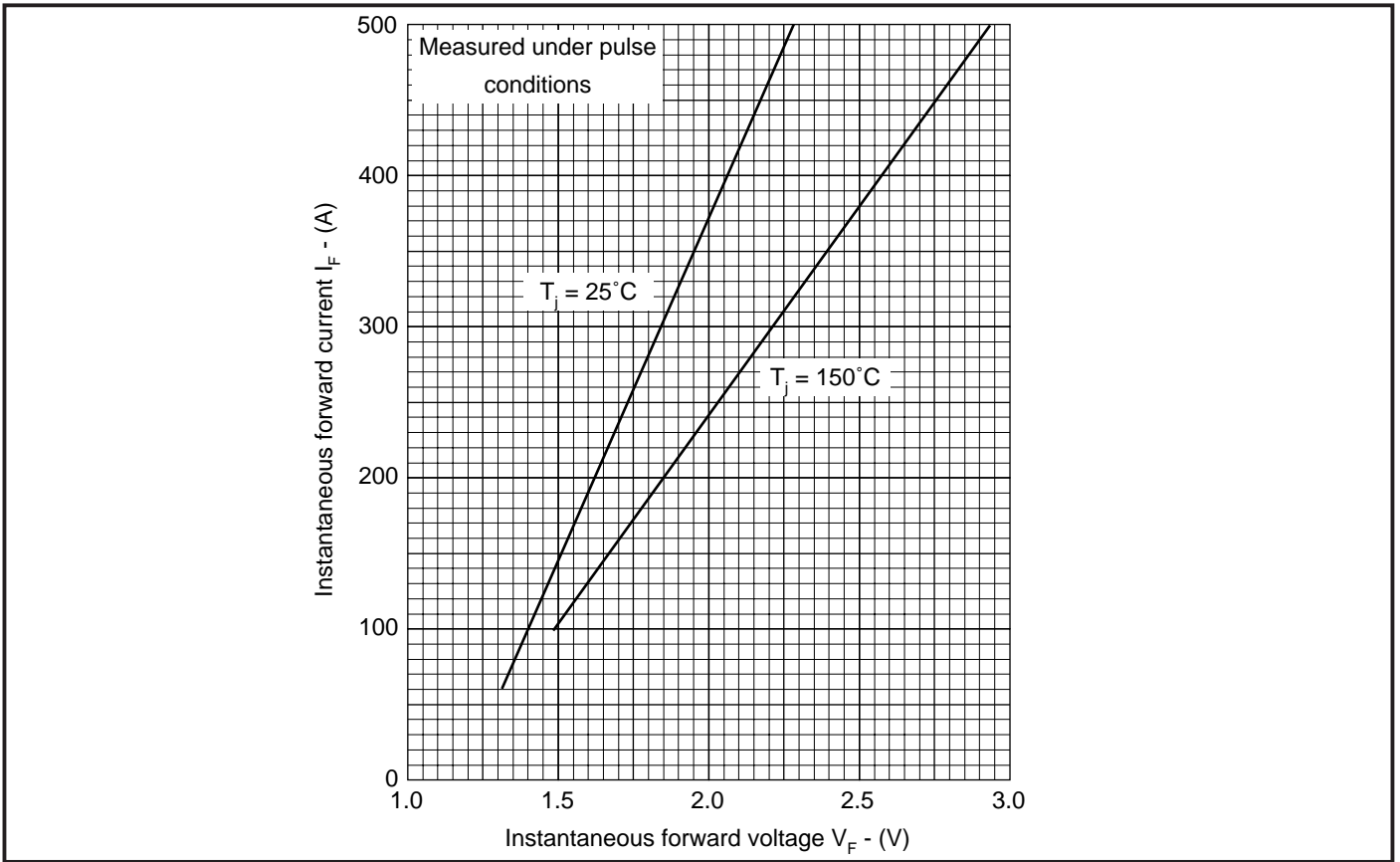


Fig.2 Maximum (limit) forward characteristics

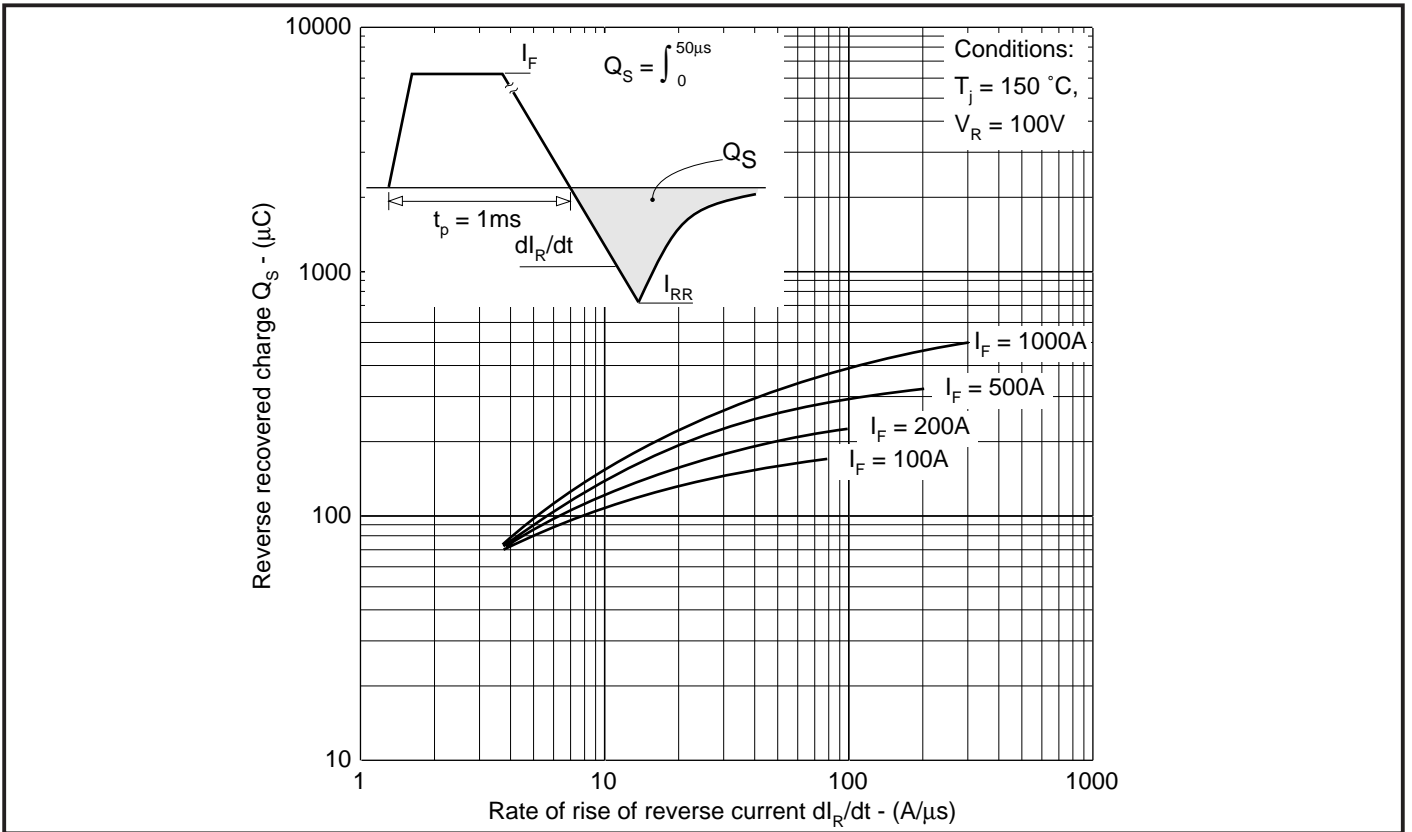


Fig.3 Recovered charge

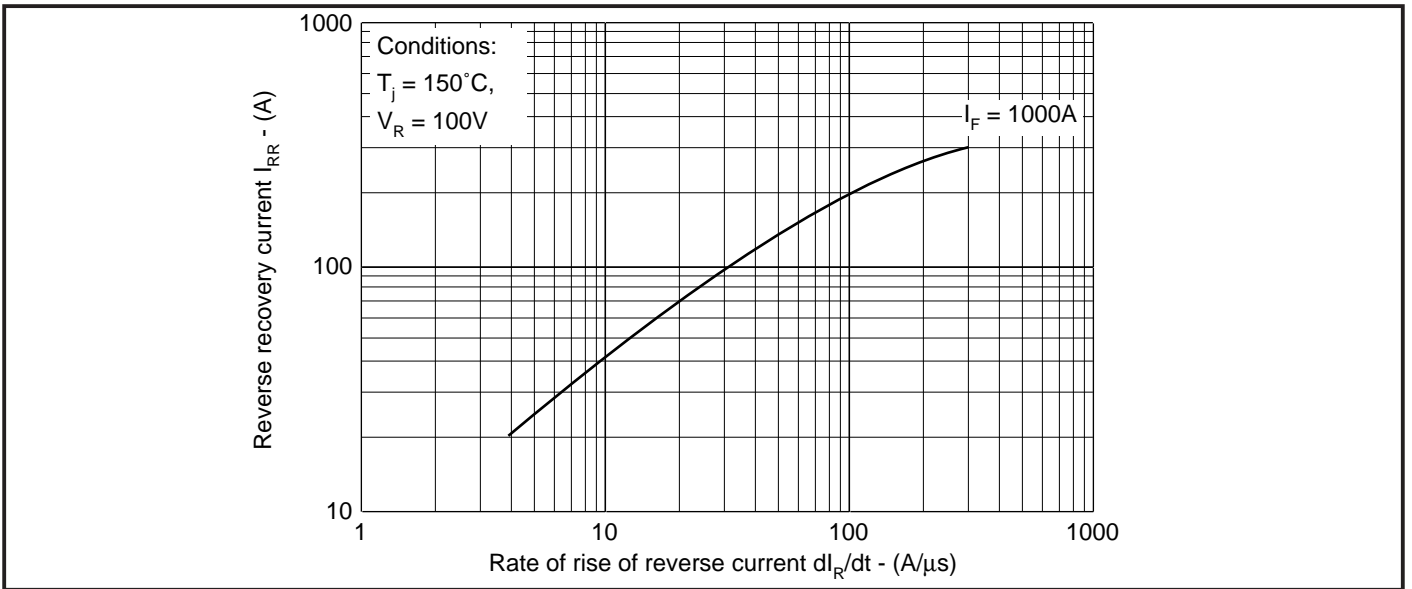


Fig.4 Typical reverse recovery current vs rate of rise of reverse current

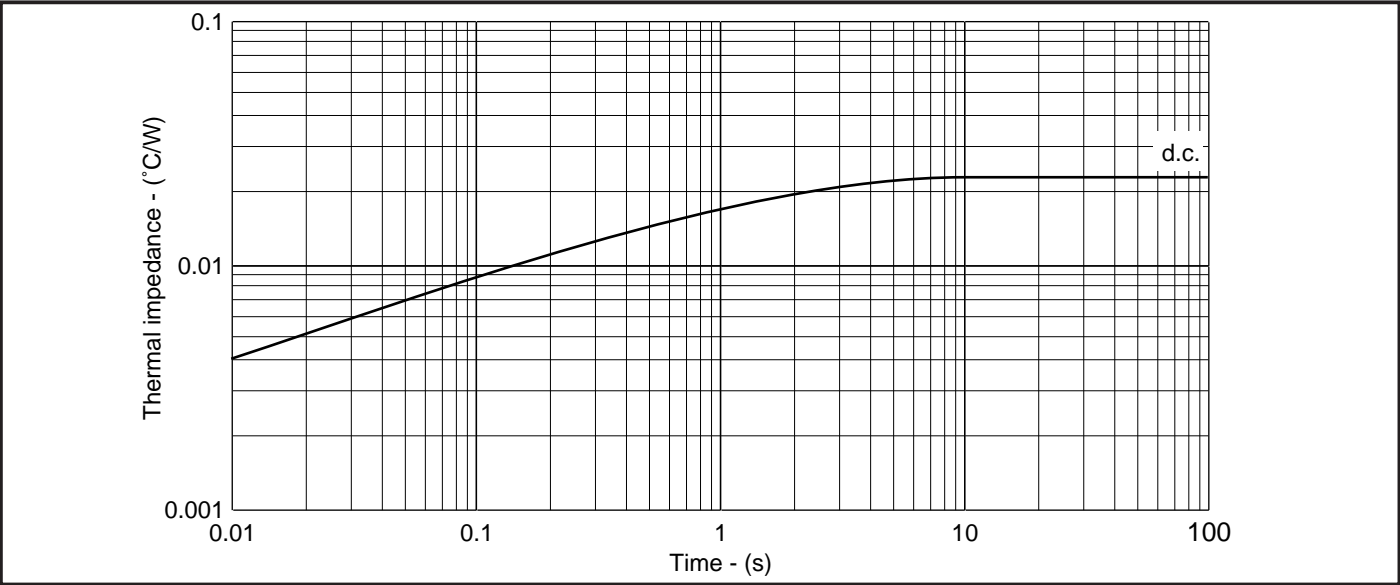
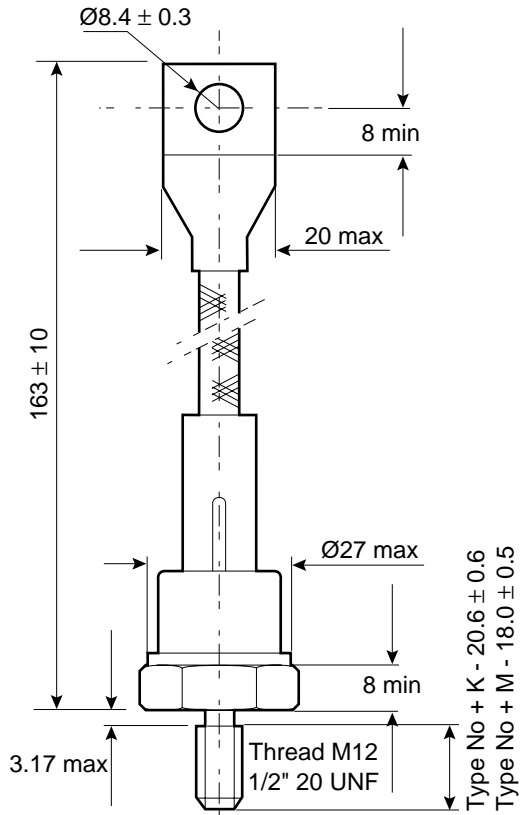


Fig.5 Maximum (limit) transient thermal impedance - junction to case - ( $^{\circ}\text{C/W}$ )

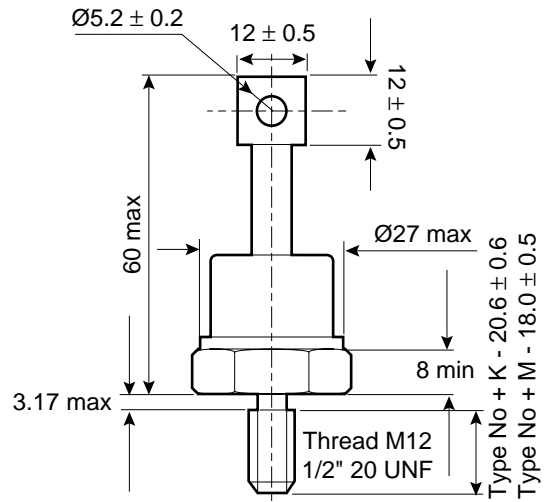
**PACKAGE DETAILS - DO8 and DO8C**

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



Nominal weight: 120g  
Mounting torque: 15Nm  $\pm$ 10%

Package outline type code: DO8



Nominal weight: 120g  
Mounting torque: 15Nm  $\pm$ 10%

Package outline type code: DO8C

## POWER ASSEMBLY CAPABILITY

The Power Assembly group was set up to provide a support service for those customers requiring more than the basic semiconductor, and has developed a flexible range of heatsink / clamping systems in line with advances in device types and the voltage and current capability of our semiconductors.

We offer an extensive range of air and liquid cooled assemblies covering the full range of circuit designs in general use today. The Assembly group continues to offer high quality engineering support dedicated to designing new units to satisfy the growing needs of our customers.

Using the up to date CAD methods our team of design and applications engineers aim to provide the Power Assembly Complete solution (PACs).

## HEATSINKS

Power Assembly has it's own proprietary range of extruded aluminium heatsinks. They have been designed to optimise the performance of our semiconductors. Data with respect to air natural, forced air and liquid cooling (with flow rates) is available on request.

For further information on device clamps, heatsinks and assemblies, please contact your nearest Sales Representative or the factory.



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**Preliminary Information:** The product is in design and development. The datasheet represents the product as it is understood but details may change.

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**No Annotation:** The product parameters are fixed and the product is available to datasheet specification.

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