

SV05..F

FAST RECOVERY DIODE

APPLICATIONS

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

FEATURES

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

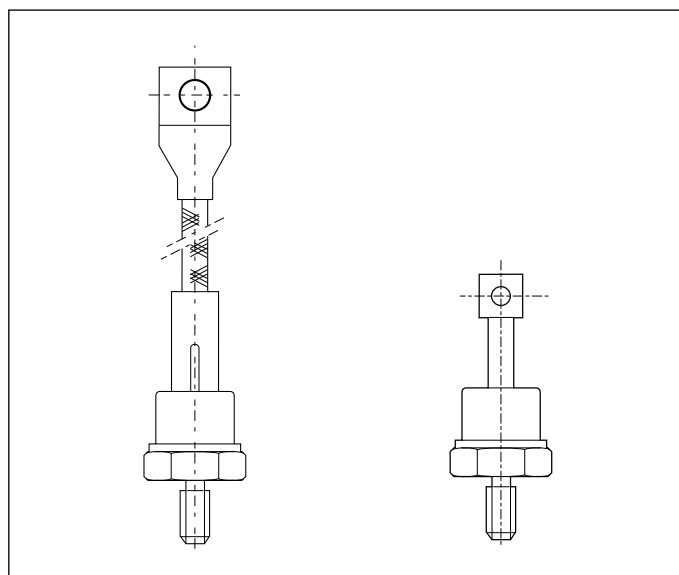
VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM} V	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.

KEY PARAMETERS

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



Outline type codes: DO8 and DO8C.
 TSee package outlines 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

SURGE RATINGS

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

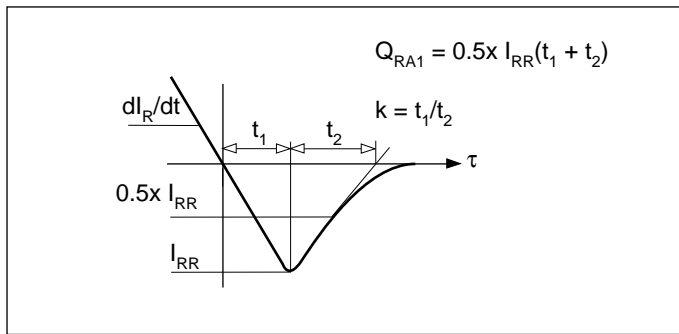
THERMAL AND MECHANICAL DATA

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

CHARACTERISTICS

Symbol	Parameter	Conditions	Typ.	Max.	Units
V_{FM}	Forward voltage	At 600A peak, $T_{case} = 25^{\circ}C$	-	2.8	V
I_{RRM}	Peak reverse current	At V_{RRM} , $T_{case} = 150^{\circ}C$	-	50	mA
t_{rr}	Reverse recovery time	$I_F = 600A$, $di_{RR}/dt = 80A/\mu s$ $T_{case} = 150^{\circ}C$, $V_R = 100V$	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 $T_{vj} = 150^{\circ}C$	-	1.4	V
r_T	Slope resistance	At $T_{vj} = 150^{\circ}C$	-	2.5	$m\Omega$
V_{FRM}	Forward recovery voltage	$di/dt = 1000A/\mu s$, $T_j = 125^{\circ}C$	-	250	V

DEFINITION OF K FACTOR AND Q_{RA1}



CURVES

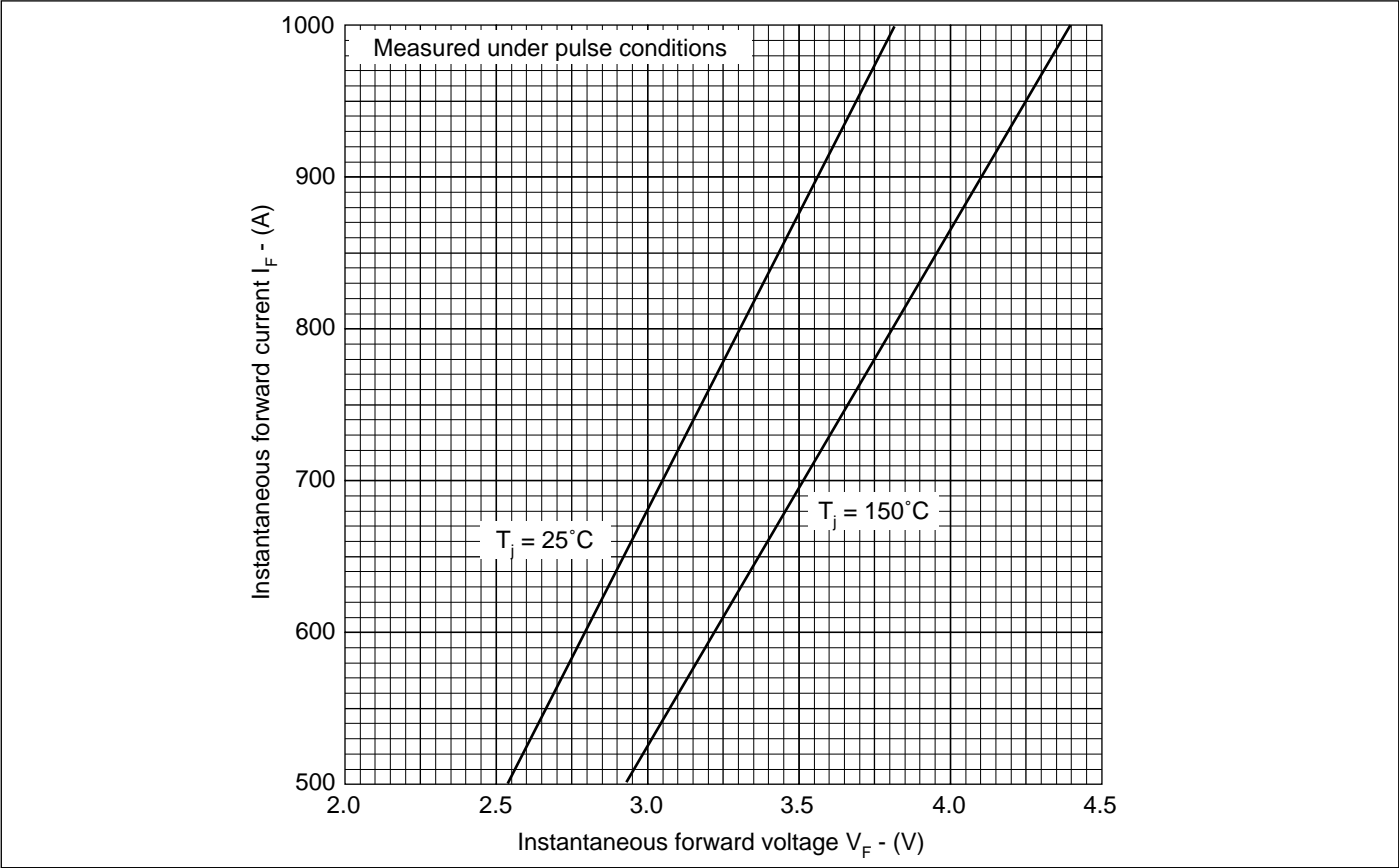


Fig.1 Maximum (limit) forward characteristics

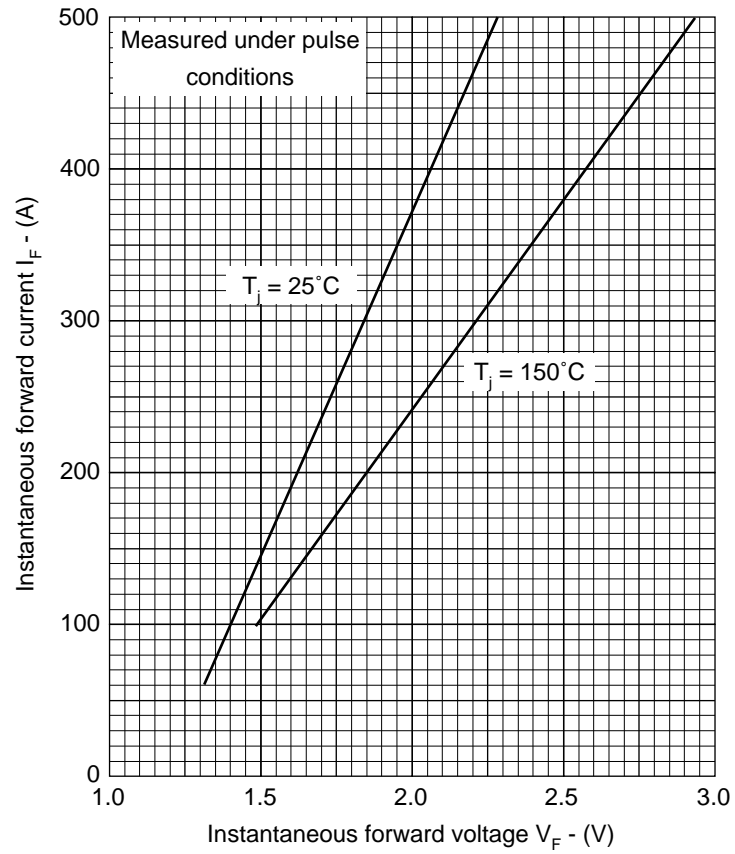
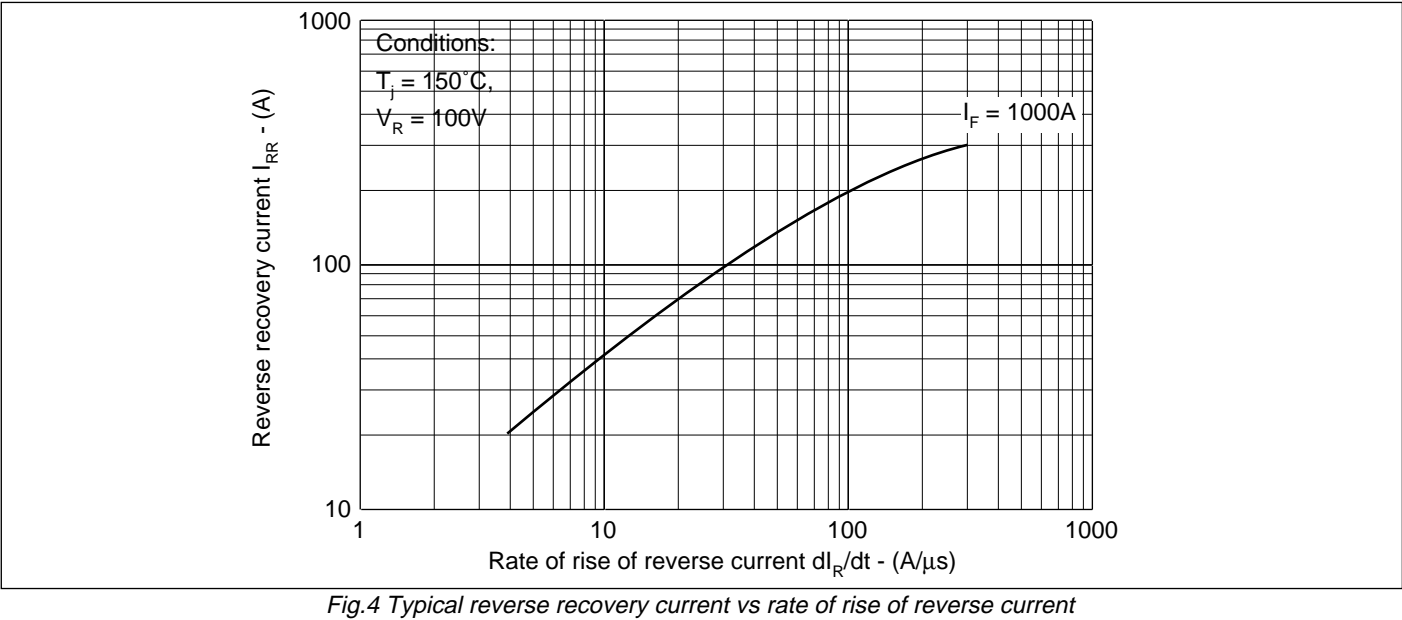
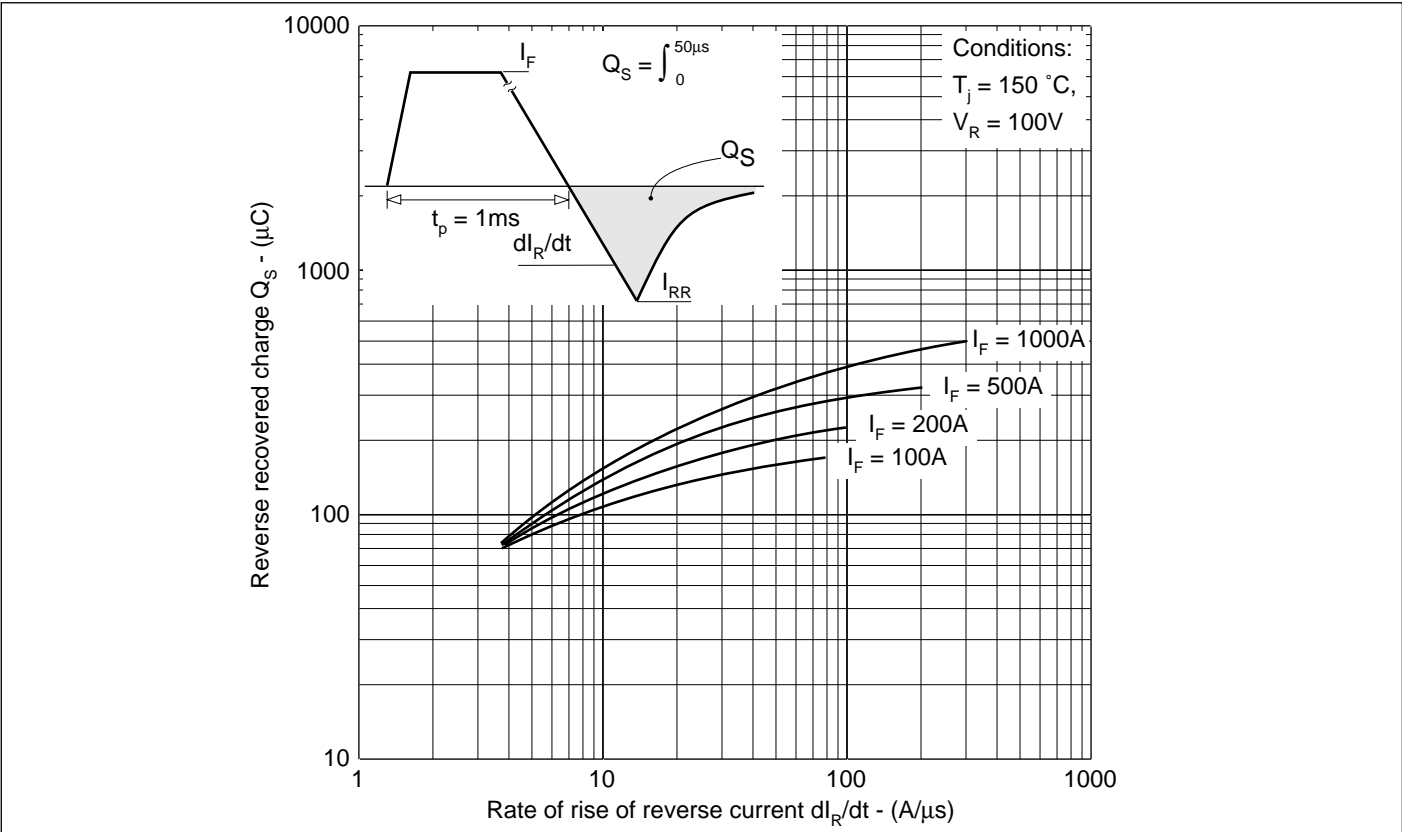


Fig.2 Maximum (limit) forward characteristics



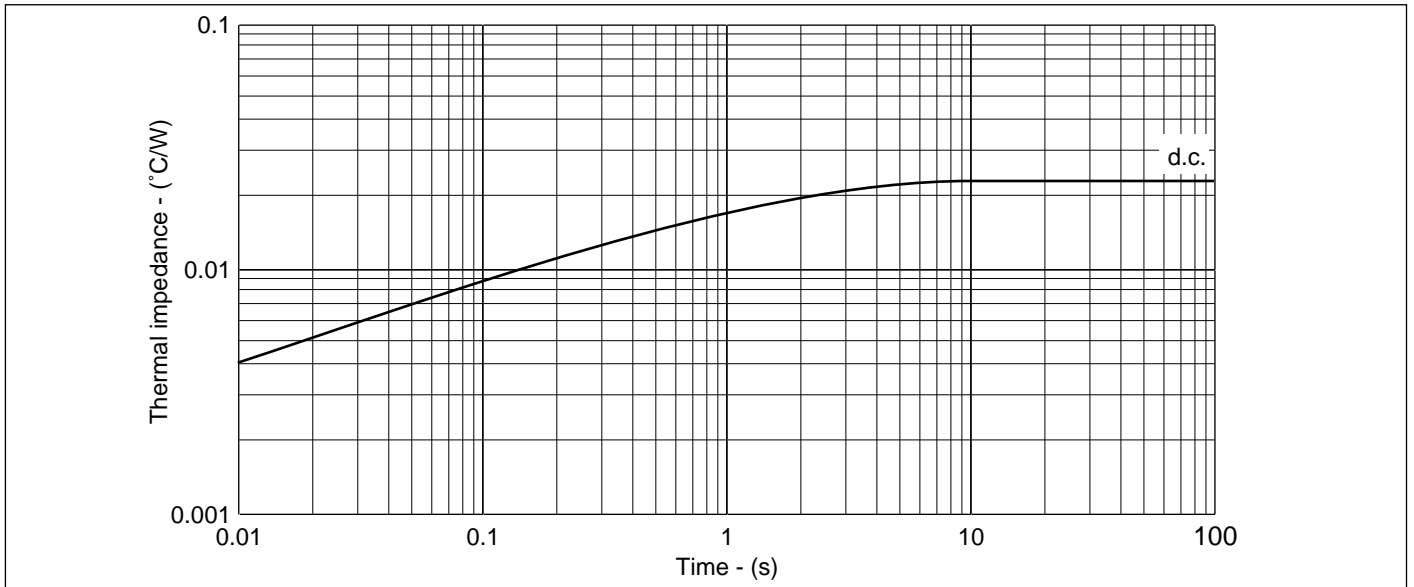
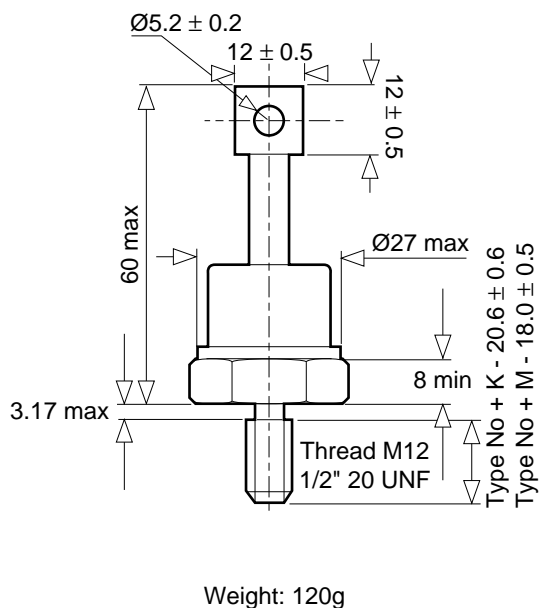
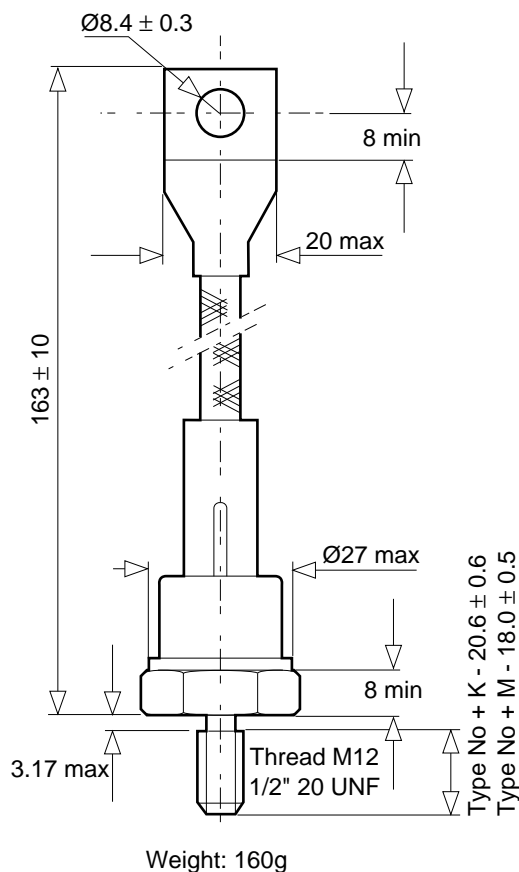


Fig.5 Maximum (limit) transient thermal impedance - junction to case - ($^{\circ}\text{C/W}$)

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.

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