

APPLICATIONS

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

FEATURES

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

VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM} V	Conditions
SV15 16F M or K	1600	$V_{RSM} = V_{RRM} + 100V$
SV15 14F M or K	1400	
SV15 12F M or K	1200	
SV15 10F M or K	1000	
SV15 08F M or K	800	
SV15 06F M or K	600	

KEY PARAMETERS

V_{RRM}	1600V
$I_{F(AV)}$	205A
I_{FSM}	3000A
Q_r	35μC
t_{rr}	3.2μs

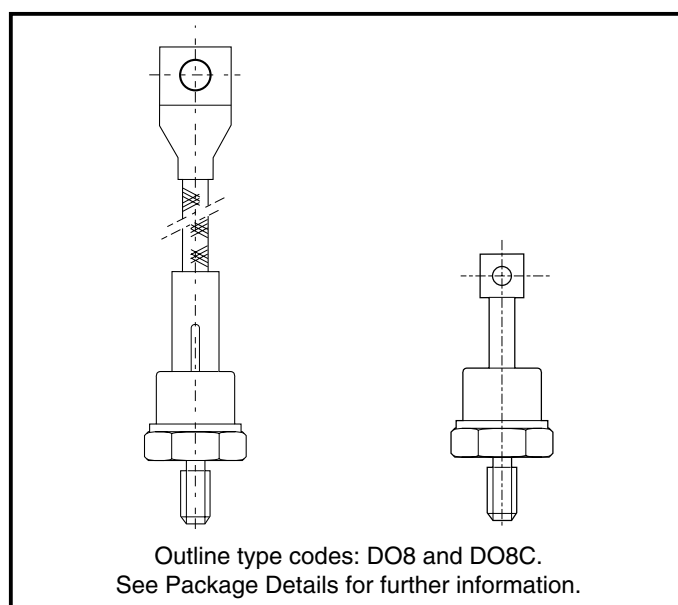


Fig. 1 Package outlines

ORDERING INFORMATION

When ordering, select the required part number shown in the Voltage Ratings selection table, e.g.:

SV15 14FM for an M12 thread

or

SV15 14FK for a 1/2" 20 UNF thread

For stud anode add 'R' to type number, e.g. **SV15 15FMR**.

For outline DO8C add suffix 'C' to typ number, e.g. **SV15 15FKC**.

Note: Please use the complete part number when ordering and quote this number in any future correspondence relating to your order.

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 65^{\circ}C$	205	A
$I_{F(RMS)}$	RMS value	$T_{case} = 65^{\circ}C$	236	A

SURGE RATINGS

Symbol	Parameter	Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; with 0% V_{RRM} , $T_j = 150^{\circ}C$	3.0	kA
I^2t	I^2t for fusing		45×10^3	A^2s

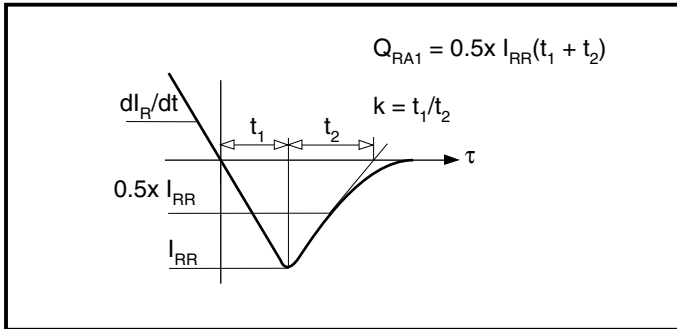
THERMAL AND MECHANICAL DATA

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	200	$^{\circ}C$
-	Mounting torque		12.0	15.0	Nm

CHARACTERISTICS

Symbol	Parameter	Conditions	Typ.	Max.	Units
V_{FM}	Forward voltage	At 450A peak, $T_{case} = 25^{\circ}C$	-	1.6	V
I_{RRM}	Peak reverse current	At V_{RRM} , $T_{case} = 150^{\circ}C$	-	20	mA
t_{rr}	Reverse recovery time	$I_F = 450A$, $di_{RR}/dt = 10A/\mu s$ $T_{case} = 125^{\circ}C$, $V_R = 100V$	-	3.2	μs
Q_{RA1}	Recovered charge (50% chord)		-	35	μC
I_{RM}	Reverse recovery current		-	21	A
V_{TO}	Threshold voltage	At $T_{vj} = 150^{\circ}C$	-	1.0	V
r_T	Slope resistance	At $T_{vj} = 150^{\circ}C$	-	1.33	m Ω
V_{FRM}	Forward recovery voltage	$di/dt = 1000A/\mu s$, $T_j = 125^{\circ}C$	-	-	V

DEFINITION OF K FACTOR AND Q_{RA1}



CURVES

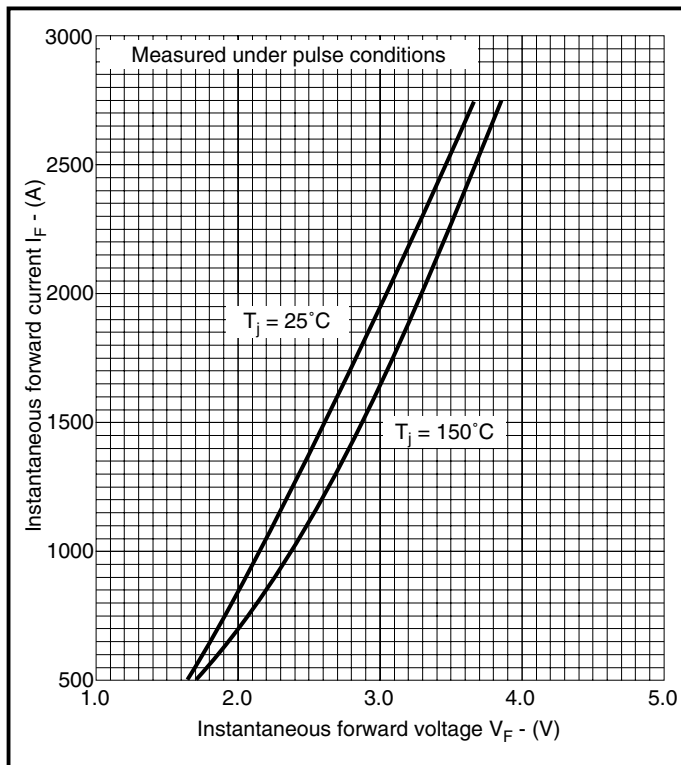


Fig.2 Maximum (limit) forward characteristics

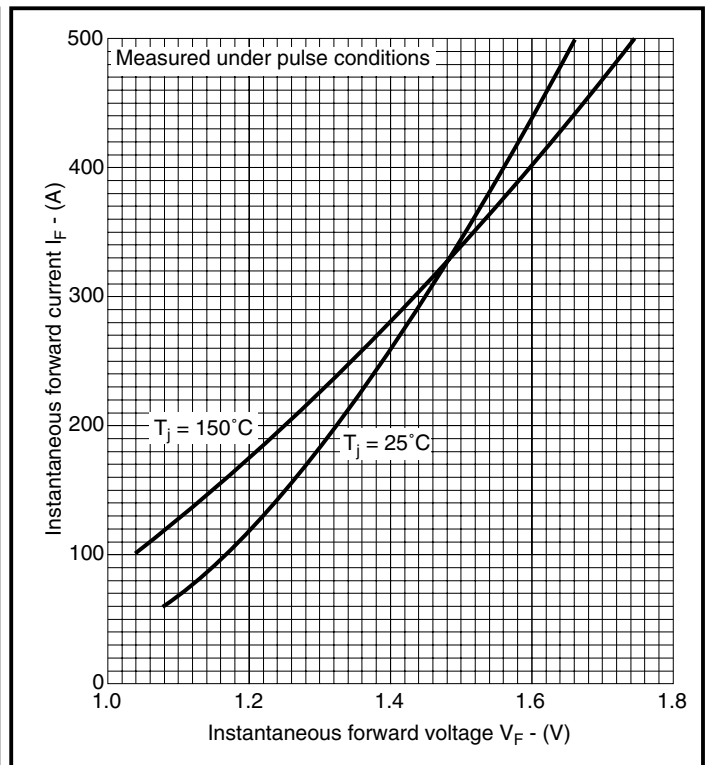


Fig.3 Maximum (limit) forward characteristics

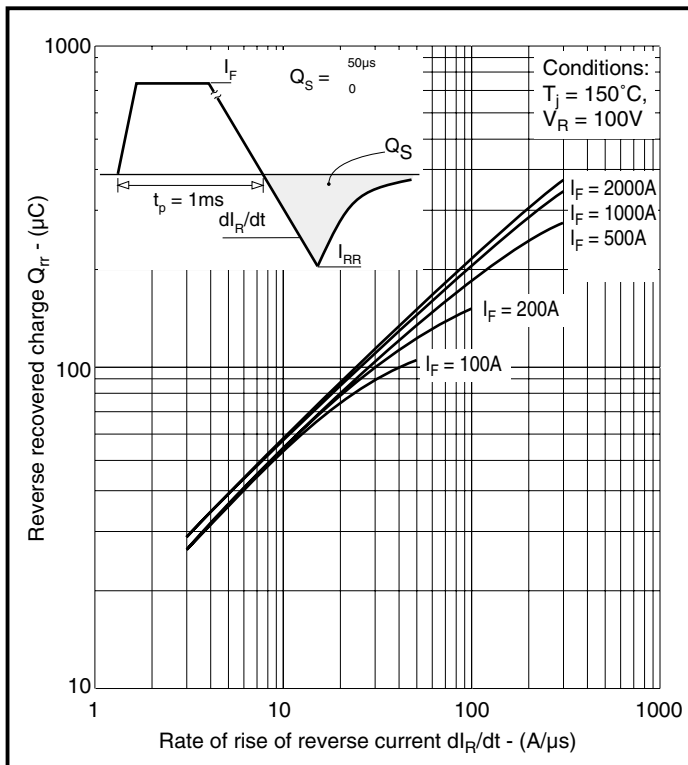


Fig.4 Recovered charge

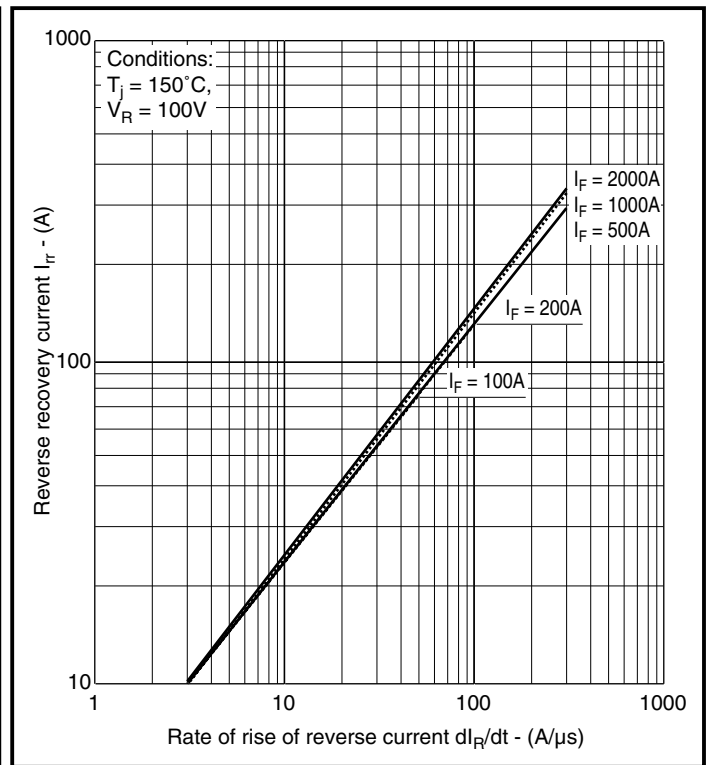
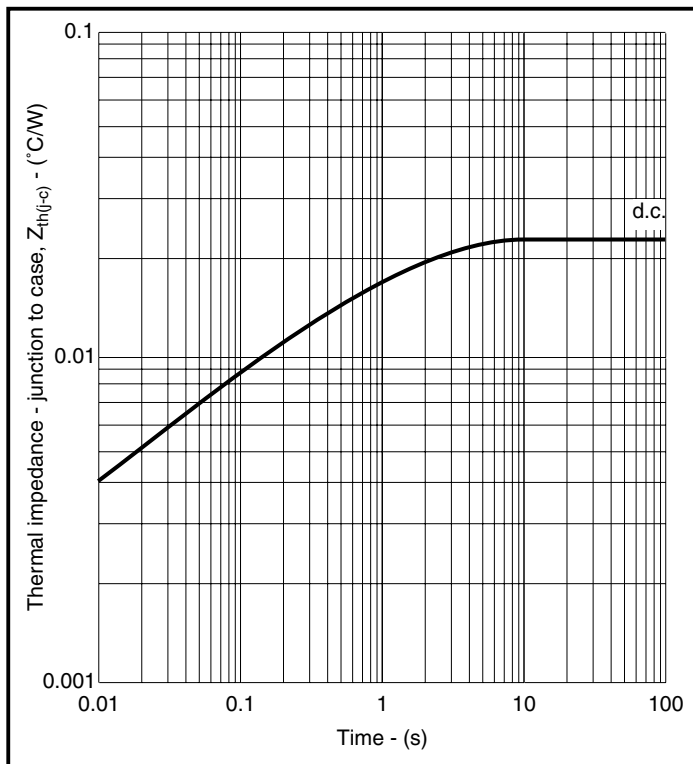
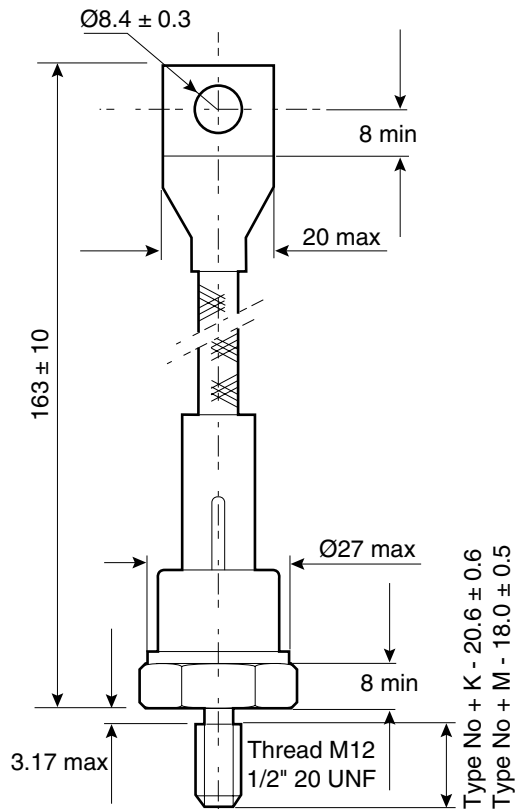


Fig.5 Typical reverse recovery current vs rate of rise of forward current

Fig.6 Maximum (limit) transient thermal impedance - junction to case - ($^\circ C/W$)

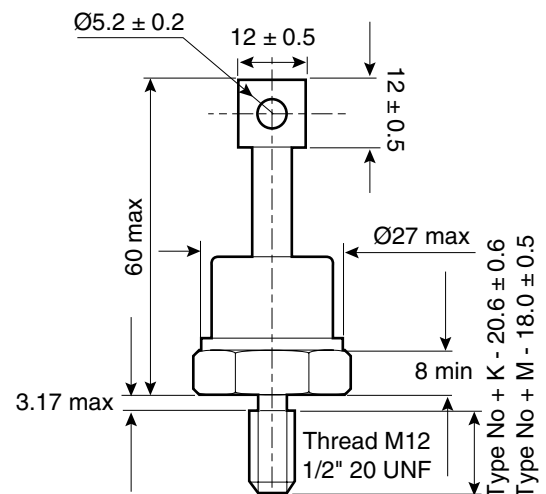
PACKAGE DETAILS - DO8 and DO8C

For further package information, please contact Customer Services. 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 and clamping systems in line with advances in device voltages 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 offers high quality engineering support dedicated to designing new units to satisfy the growing needs of our customers.

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

HEATSINKS

The Power Assembly group has its own proprietary range of extruded aluminium heatsinks which have been designed to optimise the performance of Dynex 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 Customer Services.

Stresses above those listed in this data sheet may cause permanent damage to the device. In extreme conditions, as with all semiconductors, this may include potentially hazardous rupture of the package. Appropriate safety precautions should always be followed.



<http://www.dynexsemi.com>

e-mail: power_solutions@dynexsemi.com

HEADQUARTERS OPERATIONS

DYNEX SEMICONDUCTOR LTD

Doddington Road, Lincoln.
Lincolnshire. LN6 3LF. United Kingdom.
Tel: +44-(0)1522-500500
Fax: +44-(0)1522-500550

CUSTOMER SERVICE

Tel: +44 (0)1522 502753 / 502901. Fax: +44 (0)1522 500020

SALES OFFICES

Benelux, Italy & Switzerland: Tel: +33 (0)1 60 69 32 36. Fax: +33 (0)1 60 69 31 97.

France: Tel: +33 (0)2 47 55 75 53. Fax: +33 (0)2 47 55 75 59. Tel: +33 (0)1 60 69 32 36. Fax: +33 (0)1 60 69 31 97

Germany, Northern Europe, Spain & Rest Of World: Tel: +44 (0)1522 502753 / 502901.

Fax: +44 (0)1522 500020

North America: Tel: (440) 259-2060. Fax: (440) 259-2059. Tel: (949) 733-3005. Fax: (949) 733-2986.

These offices are supported by Representatives and Distributors in many countries world-wide.

© Dynex Semiconductor 2003 TECHNICAL DOCUMENTATION – NOT FOR RESALE. PRODUCED IN UNITED KINGDOM

This publication is issued to provide information only which (unless agreed by the Company in writing) may not be used, applied or reproduced for any purpose nor form part of any order or contract nor to be regarded as a representation relating to the products or services concerned. No warranty or guarantee express or implied is made regarding the capability, performance or suitability of any product or service. The Company reserves the right to alter without prior notice the specification, design or price of any product or service. Information concerning possible methods of use is provided as a guide only and does not constitute any guarantee that such methods of use will be satisfactory in a specific piece of equipment. It is the user's responsibility to fully determine the performance and suitability of any equipment using such information and to ensure that any publication or data used is up to date and has not been superseded. These products are not suitable for use in any medical products whose failure to perform may result in significant injury or death to the user. All products and materials are sold and services provided subject to the Company's conditions of sale, which are available on request.

All brand names and product names used in this publication are trademarks, registered trademarks or trade names of their respective owners.