

SV15..F

FAST RECOVERY DIODE

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.

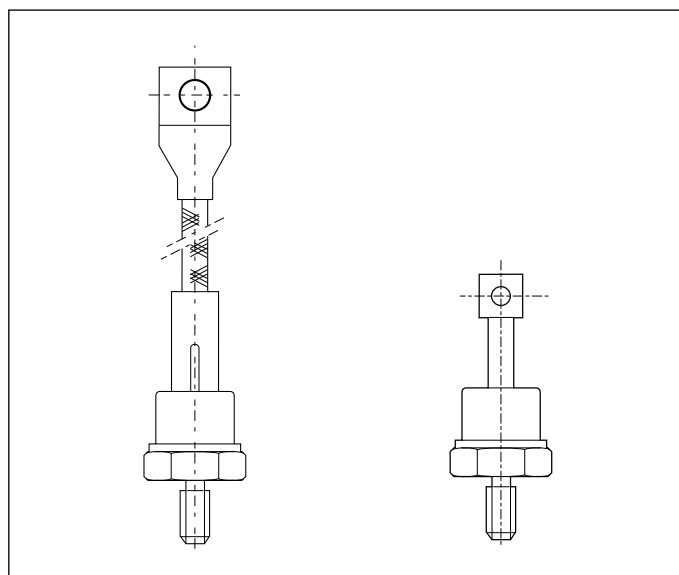
VOLTAGE RATINGS

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	

For 1/2" 20 UNF thread, add suffix K, e.g. SV15 16FK.
 For M12 thread, add suffix M, e.g. SV15 16FM.
 For stud anode add 'R' to type number, e.g. SV15 16FMR.
 For outline DO8C add suffix 'C' to typ number,
 e.g. SV15 16FKC.

KEY PARAMETERS

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



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

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 65^{\circ}C$	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} , $T_j = 150^\circ\text{C}$	3.0	kA
I^2t	I^2t for fusing		45×10^3	A^2s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; with 50% V_{RRM} , $T_j = 150^\circ\text{C}$	-	kA
I^2t	I^2t for fusing		-	A^2s

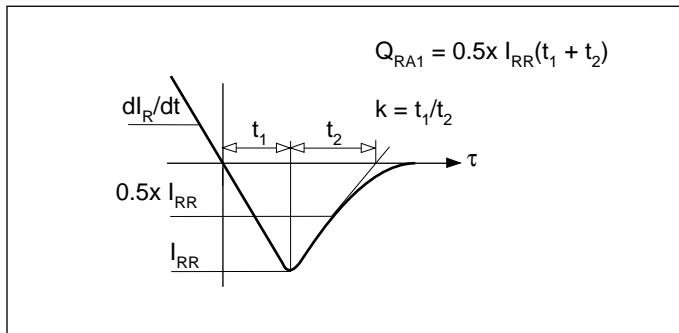
THERMAL AND MECHANICAL DATA

Symbol	Parameter	Conditions	Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance - junction to case	dc	-	0.23	$^\circ\text{C}/\text{W}$
$R_{th(c-h)}$	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	200	$^\circ\text{C}$
-	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
K	Soft factor		-	-	-
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	$m\Omega$
V_{FRM}	Forward recovery voltage	$di/dt = 1000A/\mu s$, $T_j = 125^{\circ}C$	-	-	V

DEFINITION OF K FACTOR AND Q_{RA1}



CURVES

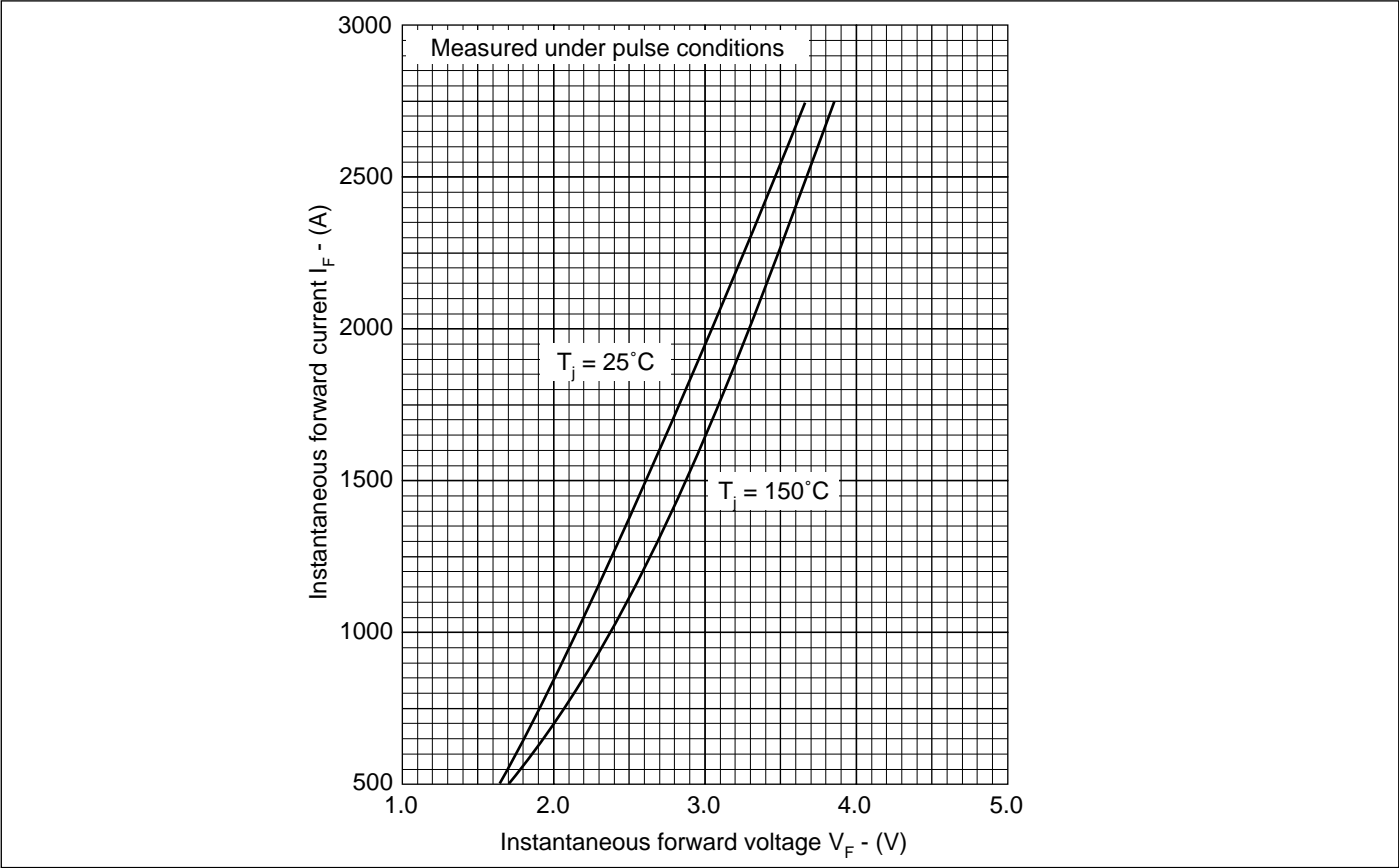


Fig.1 Maximum (limit) forward characteristics

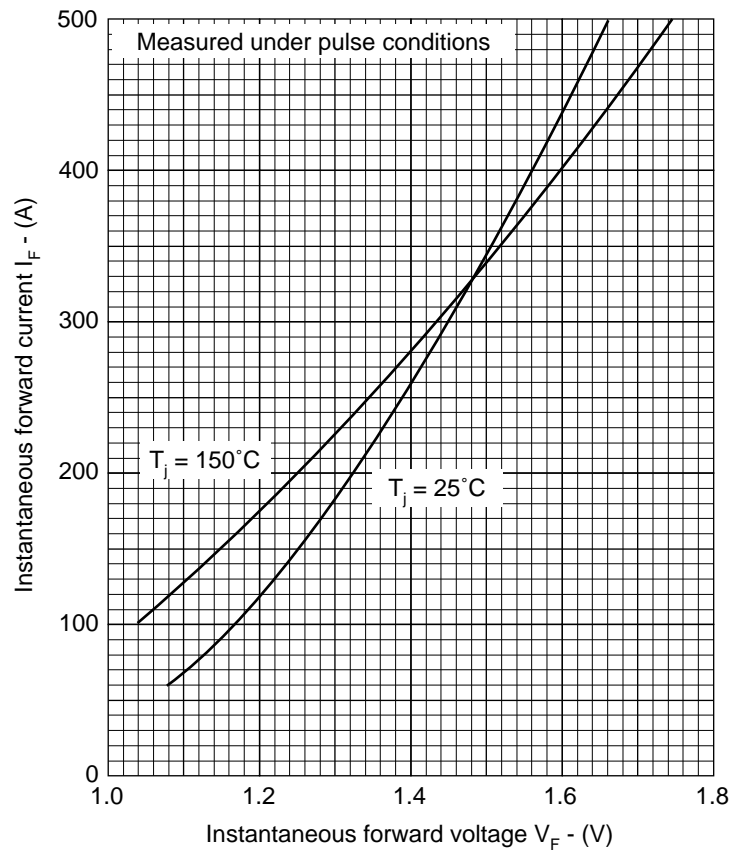


Fig.2 Maximum (limit) forward characteristics

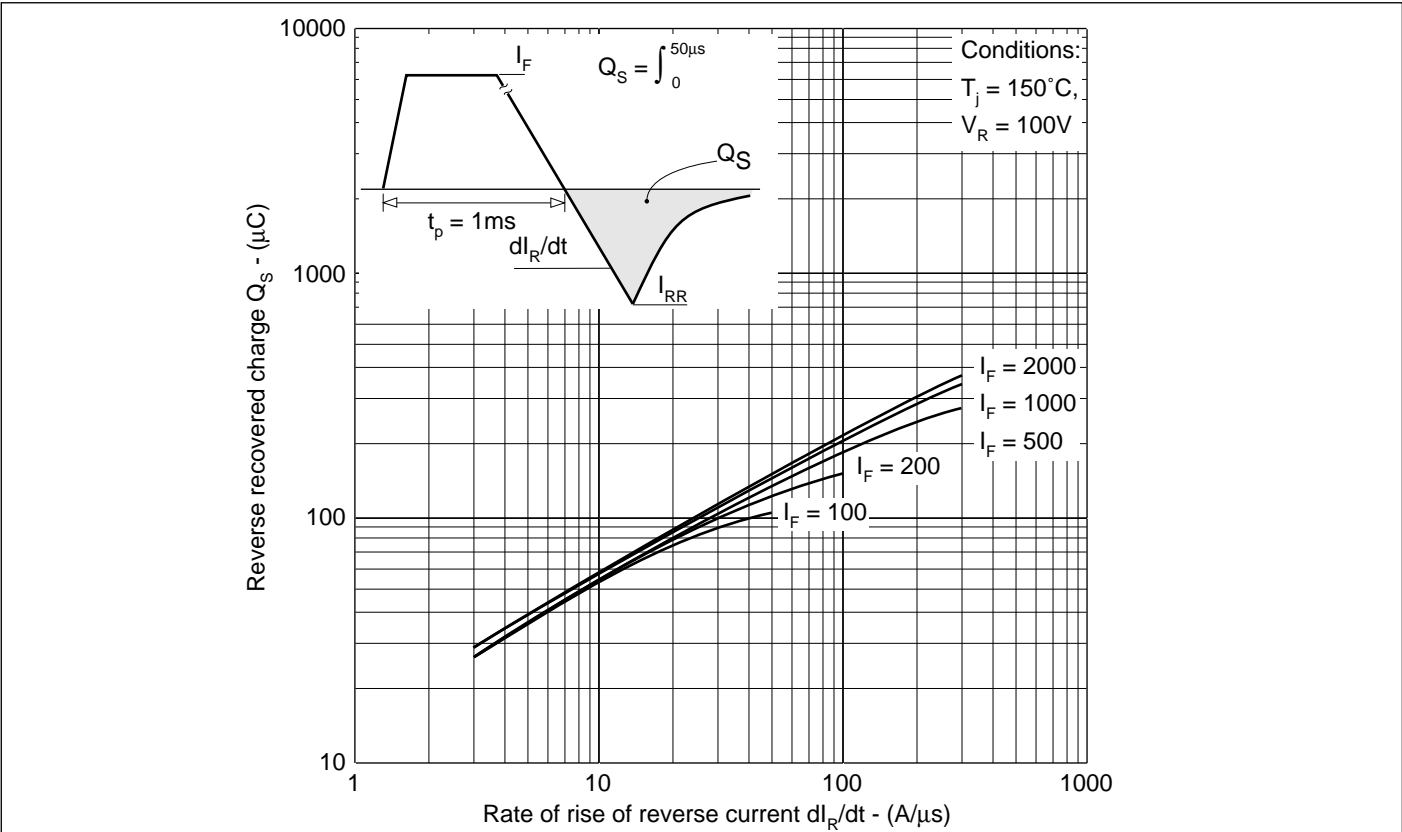


Fig.3 Recovered charge

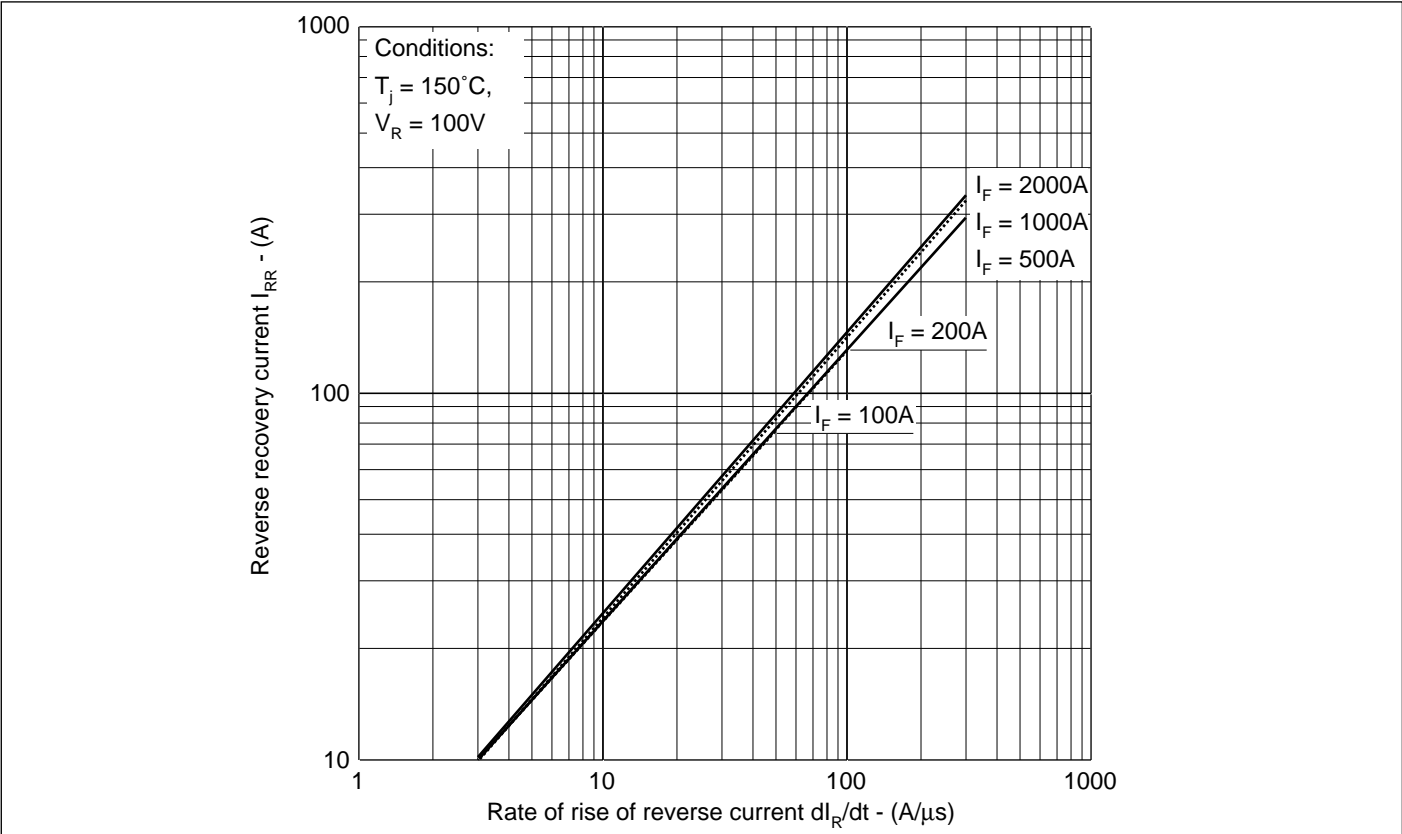


Fig.4 Typical reverse recovery current vs rate of rise of reverse current

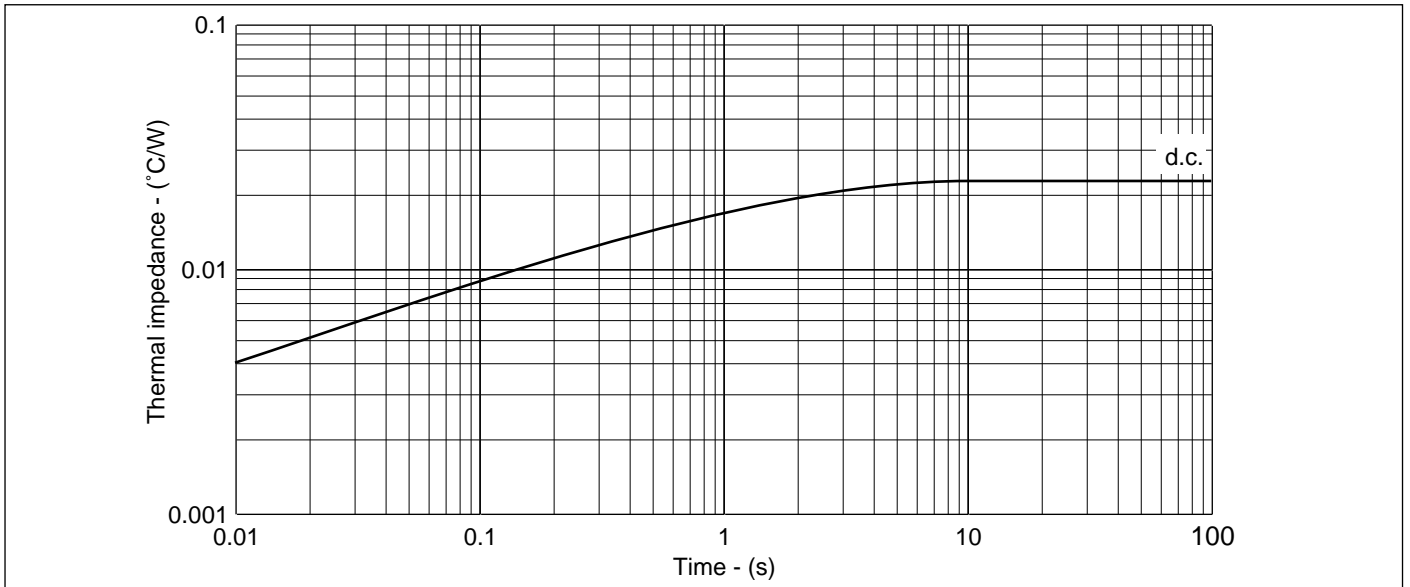
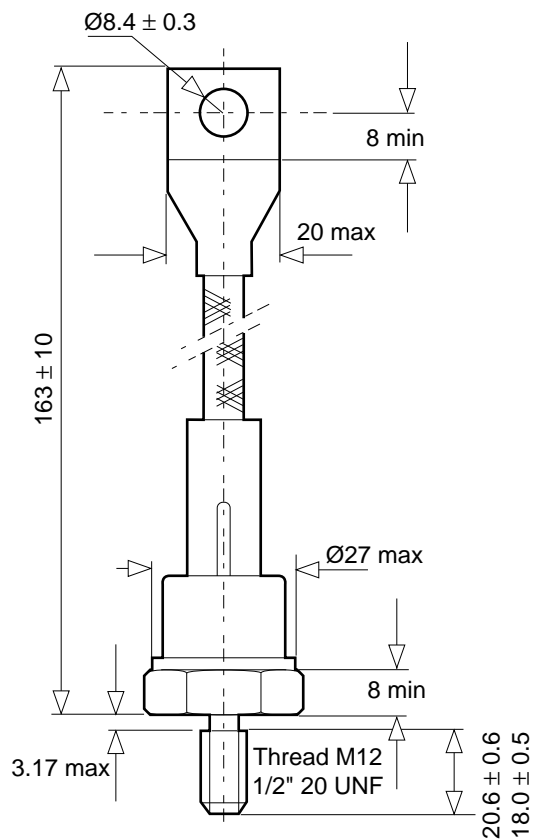


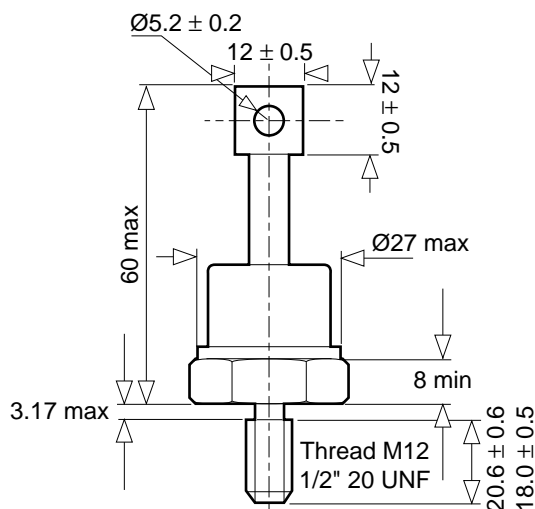
Fig.5 Maximum (limit) transient thermal impedance - junction to case - ($^{\circ}\text{C/W}$)

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.



Weight: 160g



Weight: 120g



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.

© GEC Plessey Semiconductors 1996 Publication No. DS4209-2.1 January 1996

TECHNICAL DOCUMENTATION - NOT FOR RESALE. PRINTED 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.