DSF11060SG

FAST RECOVERY DIODE

APPLICATIONS

- Snubber Diode For GTO Circuits.

KEY PARAMETERS

V_{RRM}	6000V
$I_{F(AV)}$	400A
I_{FSM}	4200A
Q_r	700μC
t_{rr}	6.0μs

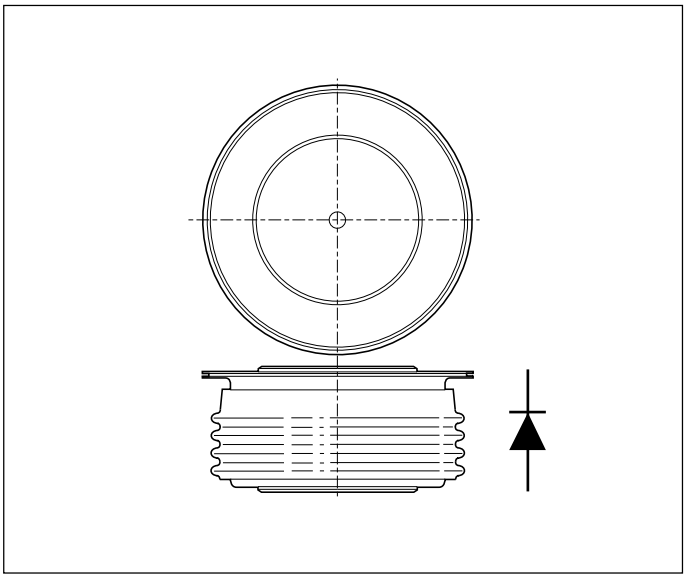
FEATURES

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

VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM} V	Conditions
DSF11060SG60	6000	$V_{RSM} = V_{RRM} + 100V$
DSF11060SG58	5800	
DSF11060SG56	5600	
DSF11060SG55	5500	

Lower voltage grades available.



Outline type code: M779b.
See package outlines for further information.

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, T_{case} = 65°C	400	A
$I_{F(RMS)}$	RMS value	T_{case} = 65°C	631	A
I_F	Continuous (direct) forward current	T_{case} = 65°C	585	A
Single Side Cooled (Anode side)				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, T_{case} = 65°C	265	A
$I_{F(RMS)}$	RMS value	T_{case} = 65°C	420	A
I_F	Continuous (direct) forward current	T_{case} = 65°C	365	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	4.2	kA
I^2t	I^2t for fusing		88×10^3	A^2s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; with 50% $V_{RRM,}$ T_j = 150°C	3.4	kA
I^2t	I^2t for fusing		57.8×10^3	A^2s

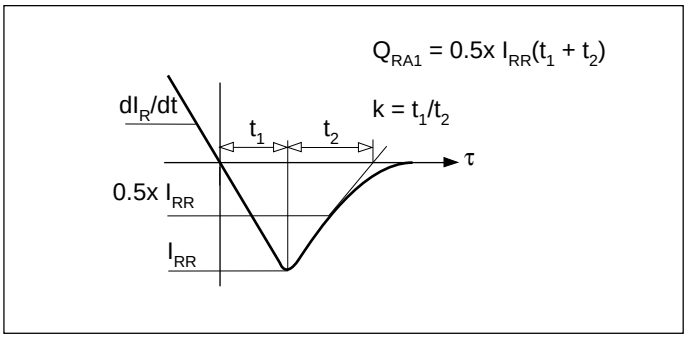
THERMAL AND MECHANICAL DATA

Symbol	Parameter	Conditions		Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance - junction to case	Double side cooled	dc	-	0.032	°C/W
		Single side cooled	Anode dc	-	0.064	°C/W
			Cathode dc	-	0.064	°C/W
$R_{th(c-h)}$	Thermal resistance - case to heatsink	Clamping force 12kN with mounting compound	Double side	-	0.008	°C/W
			Single side	-	0.016	°C/W
T_{vj}	Virtual junction temperature	Forward (conducting)		-	135	°C
T_{stg}	Storage temperature range			-55	125	°C
-	Clamping force			10.8	13.2	kN

CHARACTERISTICS

Symbol	Parameter	Conditions	Typ.	Max.	Units
V_{FM}	Forward voltage	At 600A peak, T_{case} = 25°C	-	3.8	V
I_{RRM}	Peak reverse current	At V_{RRM}, T_{case} = 125°C	-	70	mA
t_{rr}	Reverse recovery time	I_F = 1000A, di_{RR}/dt = 100A/µs T_{case} = 125°C, V_R = 100V	6.0	-	µs
Q_{RA1}	Recovered charge (50% chord)		-	1000	µC
I_{RM}	Reverse recovery current		350	-	A
K	Soft factor		1.7	-	-
V_{TO}	Threshold voltage	At T_{vj} = 125°C	-	1.5	V
r_T	Slope resistance	At T_{vj} = 125°C	-	2.9	mΩ
V_{FRM}	Forward recovery voltage	di/dt = 1000A/µs, T_j = 100°C	-	400	V

DEFINITION OF K FACTOR AND Q_{RA1}



CURVES

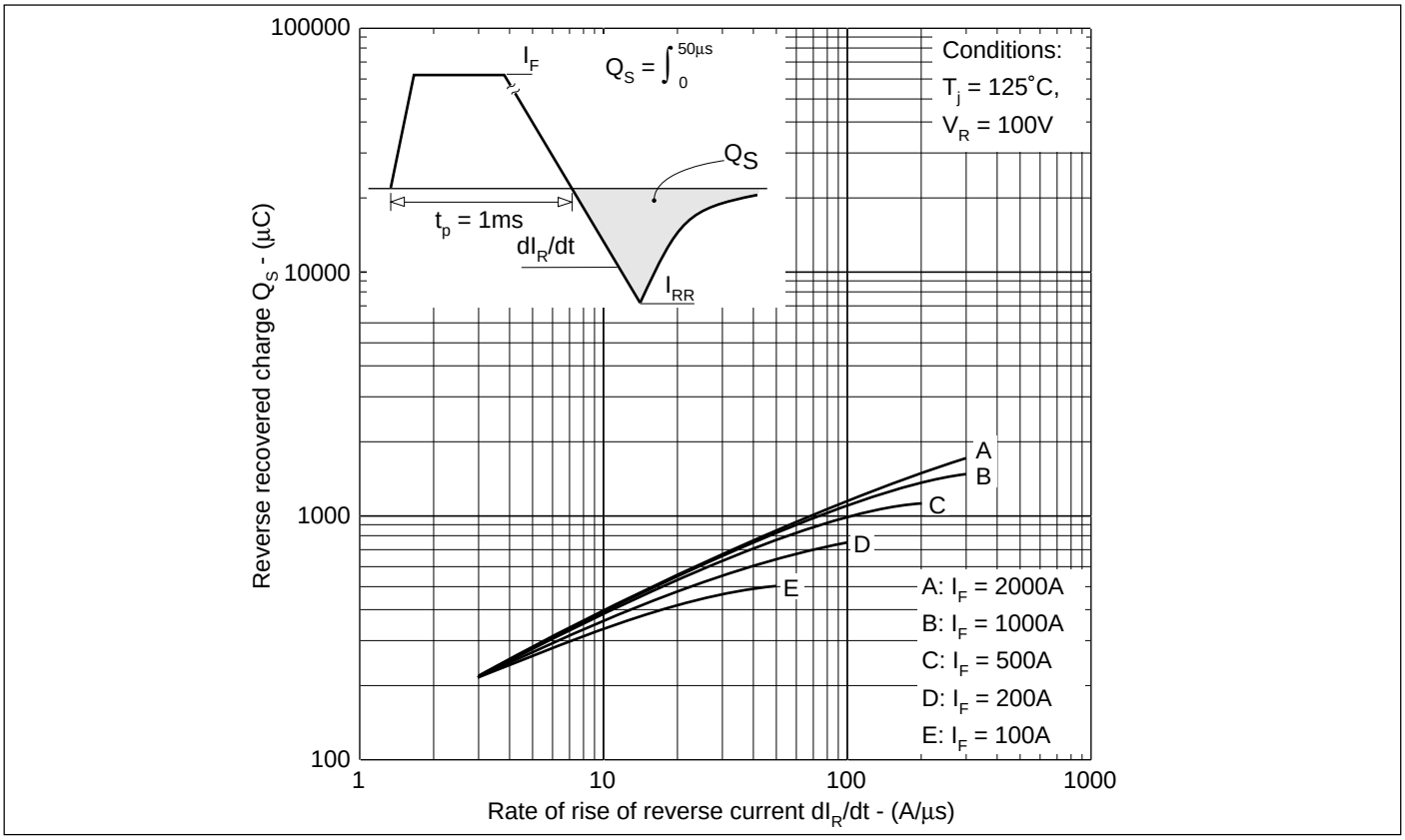


Fig. 1 Recovered charge

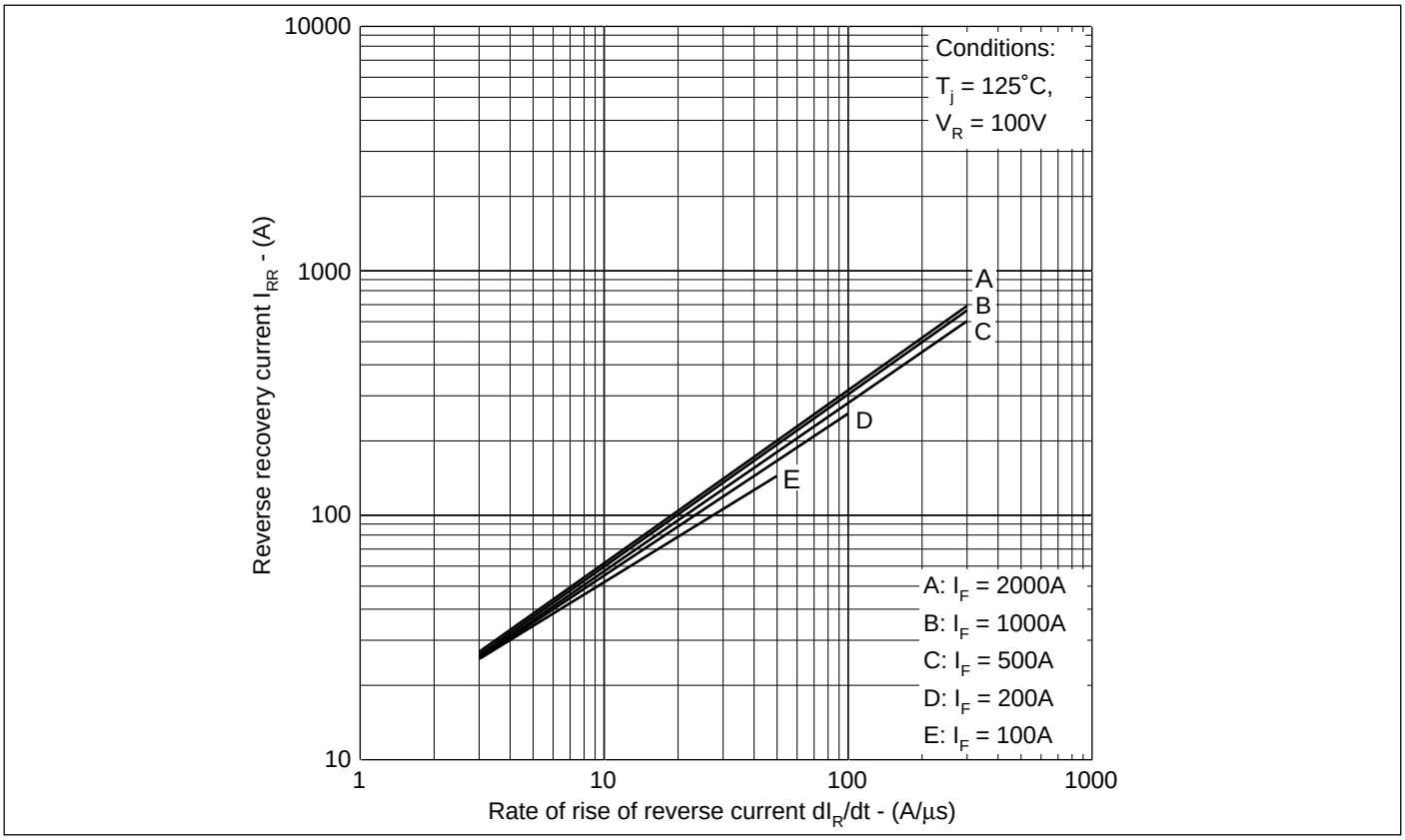


Fig. 5 typical reverse recovery current vs rate of rise of reverse current

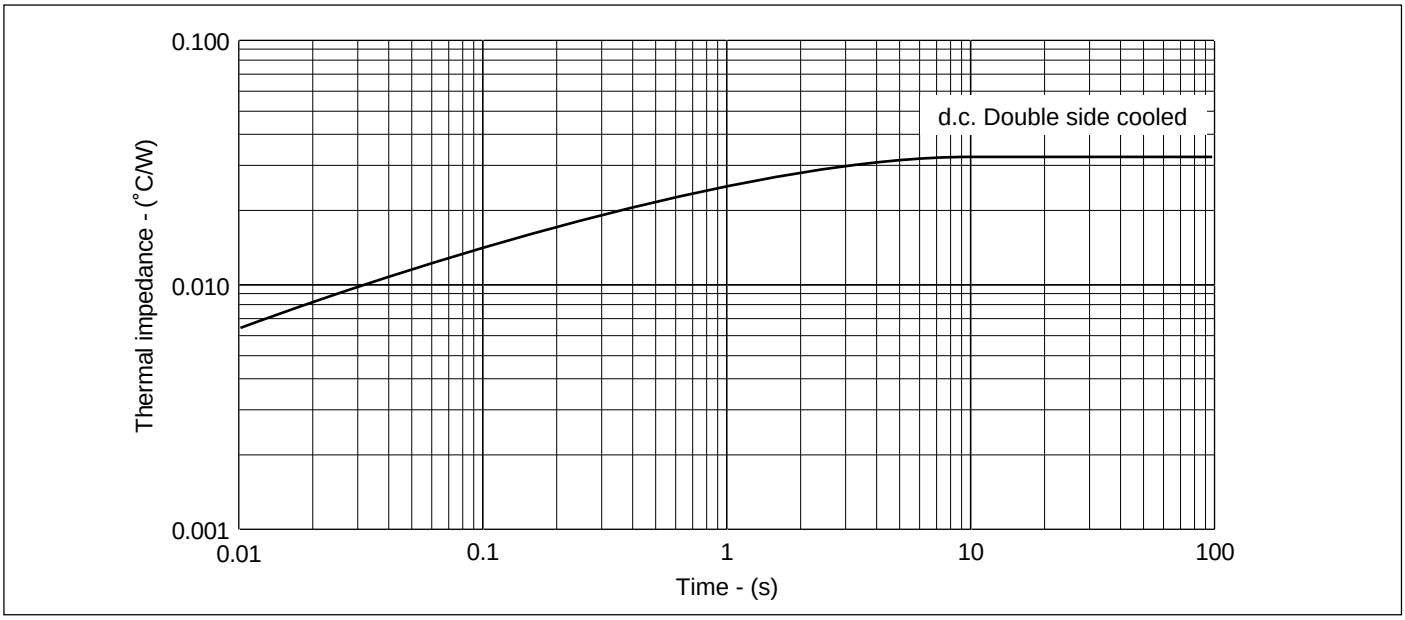
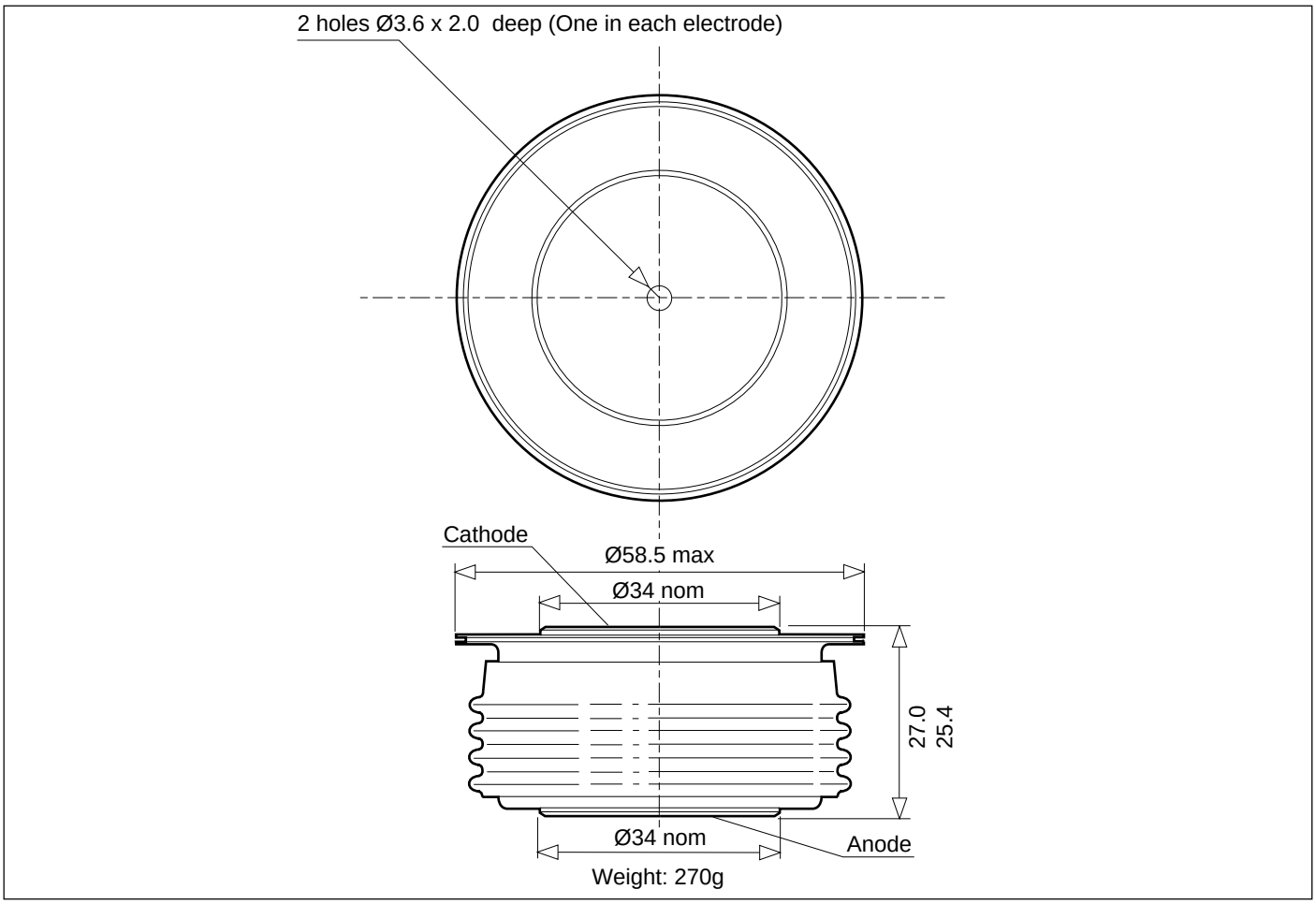


Fig. 3 Maximum (limit) transient thermal impedance - junction to case - (˚CW)

DSF11060SG

PACKAGE DETAILS - M779b

(Alternative outline G includes gate connections, all other details are the same as M779b).
For further package information, please contact your local Customer Service Centre. All dimensions in mm, unless stated otherwise. DO NOT SCALE.



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.

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