

APPLICATIONS

- Rectification.
- Freewheel Diode.
- DC Motor Control.
- Power Supplies.
- Welding.
- Battery Chargers.

FEATURES

- Double Side Cooling.
- High Surge Capability.

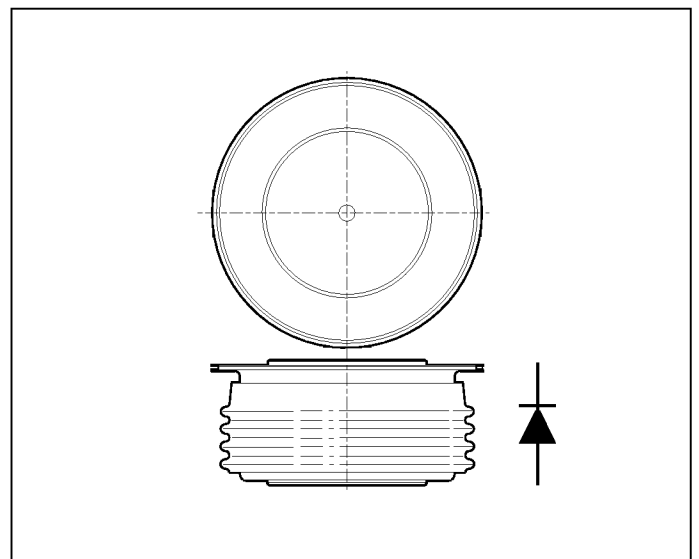
VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM}	Conditions
DS1107SG40 DS1107SG39 DS1107SG38 DS1107SG37 DS1107SG36 DS1107SG35	4000 3900 3800 3700 3600 3500	$V_{RSM} = V_{RRM} + 100V$

Lower voltage grades available.

KEY PARAMETERS

V_{RRM}	4000V
$I_{F(AV)}$	870A
I_{FSM}	15000A



Outline type code: G. Turn to page 7 for further information.

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 100^{\circ}C$	870	A
$I_{F(RMS)}$	RMS value	$T_{case} = 100^{\circ}C$	1366	A
I_F	Continuous (direct) forward current	$T_{case} = 100^{\circ}C$	1280	A
Single Side Cooled (Anode side)				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 100^{\circ}C$	550	A
$I_{F(RMS)}$	RMS value	$T_{case} = 100^{\circ}C$	863	A
I_F	Continuous (direct) forward current	$T_{case} = 100^{\circ}C$	740	A

SURGE RATINGS

Symbol	Parameter	Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; $T_{case} = 150^{\circ}C$ $V_R = 50\% V_{RRM} - 1/4$ sine	12.0	kA
I^2t	I^2t for fusing		0.72×10^6	A ² s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; $T_{case} = 150^{\circ}C$ $V_R = 0$	15.0	kA
I^2t	I^2t for fusing		1.125×10^6	A ² s

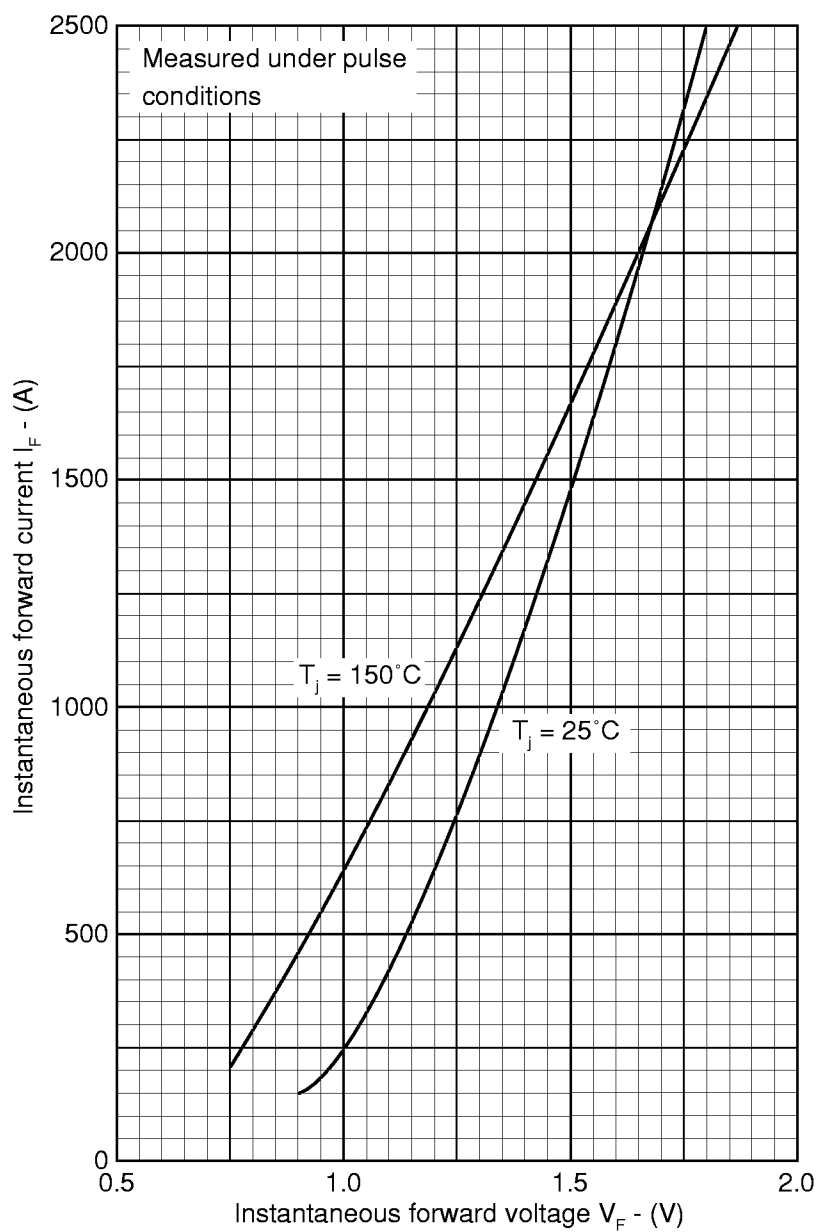
THERMAL AND MECHANICAL DATA

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 12.0kN with mounting compound	Double side	-	0.008	°C/W
			Single side	-	0.016	°C/W
T_{vj}	Virtual junction temperature	Forward (conducting)		-	160	°C
		Reverse (blocking)		-	150	°C
T_{stg}	Storage temperature range			-55	175	°C
-	Clamping force			11.5	13.5	kN

CHARACTERISTICS

Symbol	Parameter	Conditions	Min.	Max.	Units
V_{FM}	Forward voltage	At 1800A peak, $T_{case} = 25^{\circ}C$	-	1.6	V
I_{RRM}	Peak reverse current	At V_{RRM} , $T_{case} = 150^{\circ}C$	-	50	mA
Q_S	Total stored charge	$I_F = 1000A, dI_{RR}/dt = 3A/\mu s$ $T_{case} = 150^{\circ}C, V_R = 100V$	-	2000	μC
I_{RR}	Peak recovery current		-	80	A
V_{TO}	Threshold voltage	At $T_{vj} = 150^{\circ}C$	-	0.75	V
r_T	Slope resistance	At $T_{vj} = 150^{\circ}C$	-	0.44	m Ω

CURVES

**FIG. 1 MAXIMUM (LIMIT) FORWARD CHARACTERISTICS**

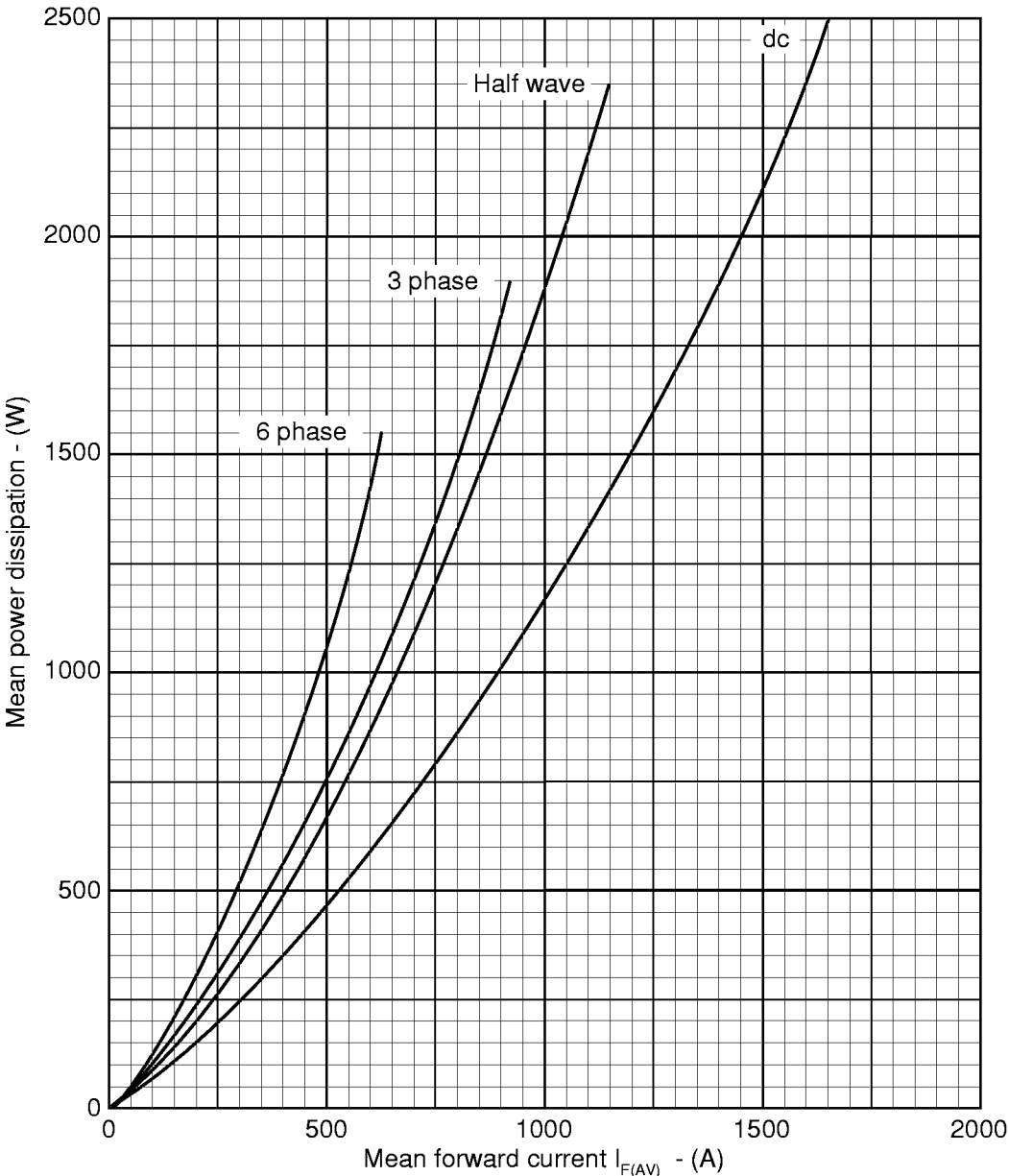
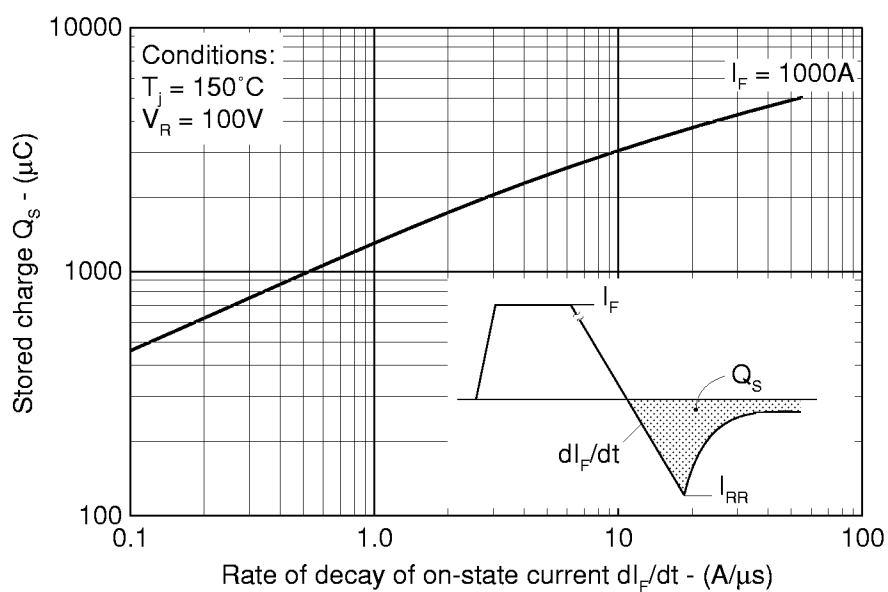
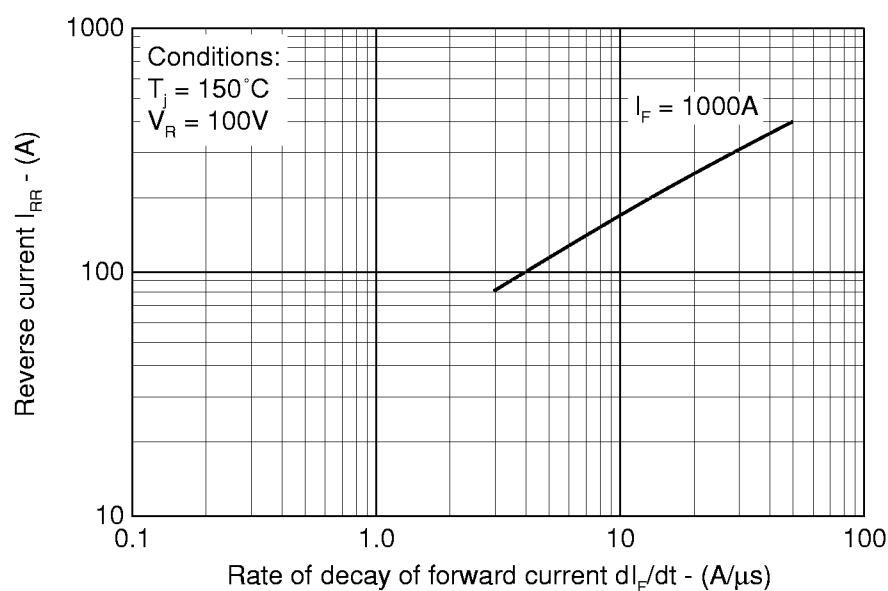


FIG. 2 DISSIPATION CURVES

**FIG. 3 MAXIMUM TOTAL STORED CHARGE****FIG. 4 MAXIMUM REVERSE RECOVERY CURRENT**

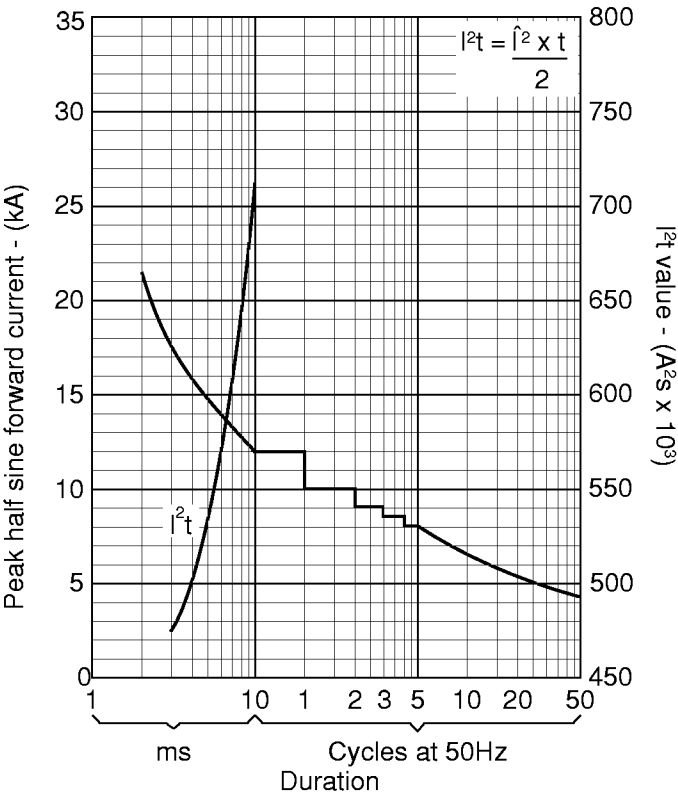


FIG. 5 SURGE (NON-REPETITIVE) FORWARD CURRENT vs TIME (WITH 50% V_{RRM} $T_{case} = 150^{\circ}C$)

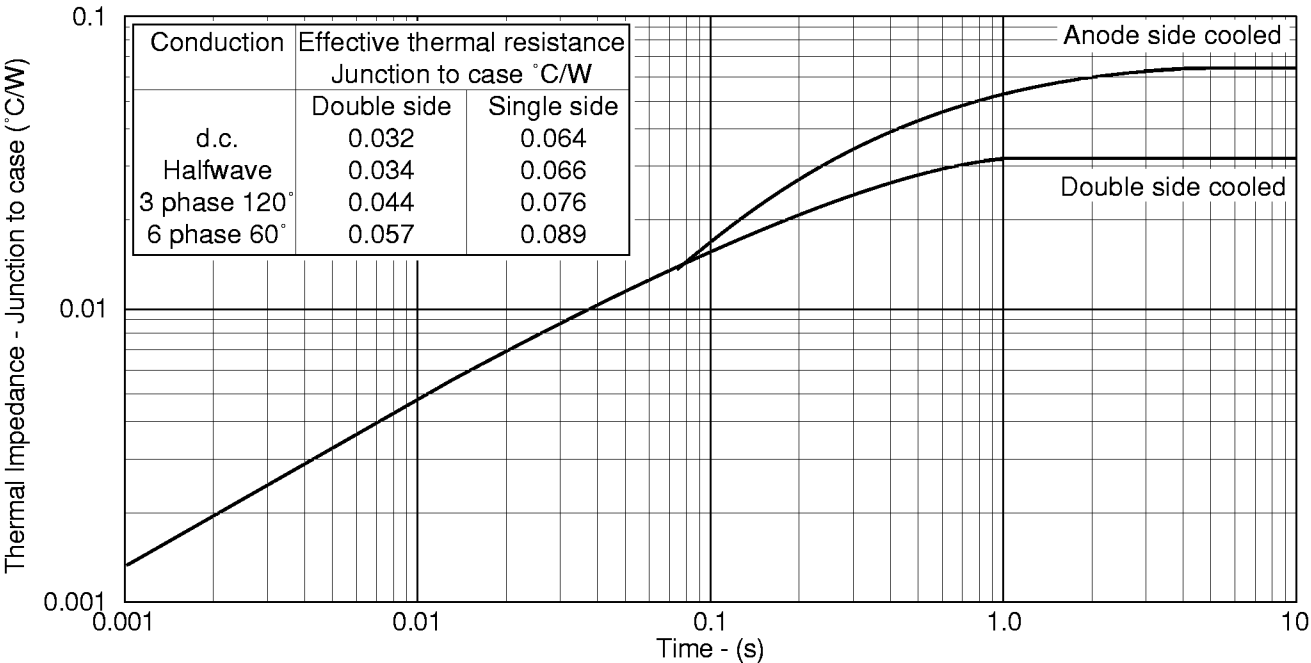
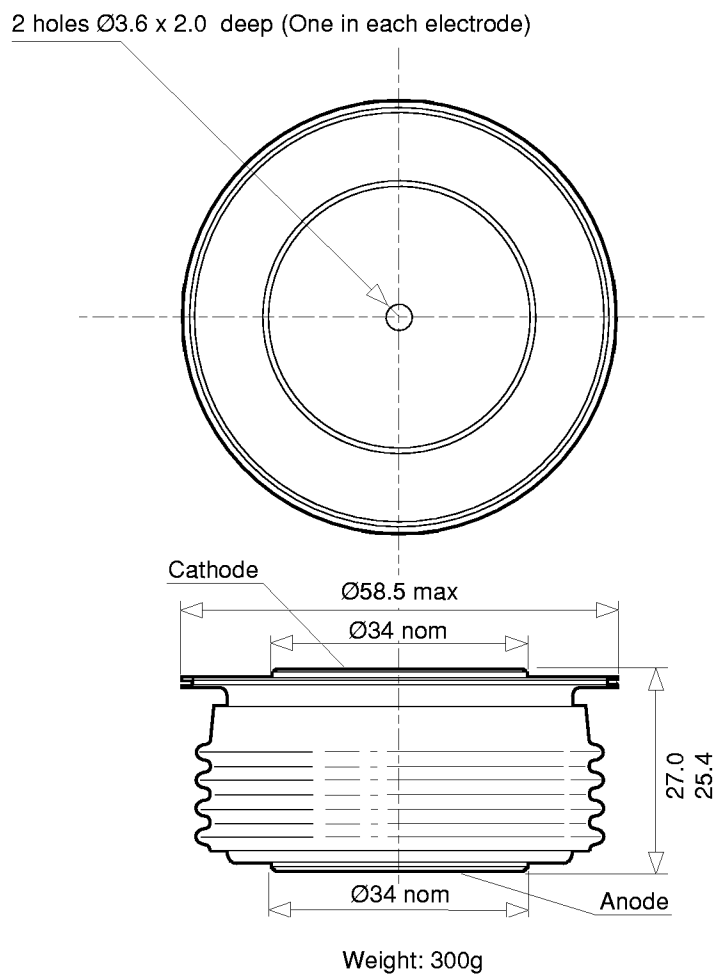


FIG. 6 TRANSIENT THERMAL IMPEDANCE - JUNCTION TO CASE - ($^{\circ}C/W$)

PACKAGE DETAILS - G

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





HEADQUARTERS OPERATIONS
MITEL SEMICONDUCTOR
Cheney Manor, Swindon,
Wiltshire SN2 2QW, United Kingdom.
Tel: (01793) 518000
Fax: (01793) 518411

MITEL SEMICONDUCTOR
1500 Green Hills Road,
Scotts Valley, California 95066-4922
United States of America.
Tel (408) 438 2900
Fax: (408) 438 5576/6231

Internet: <http://www.gpsemi.com>

POWER PRODUCT CUSTOMER SERVICE CENTRES

- **FRANCE, BENELUX & SPAIN** Les Ulis Cedex Tel: (1) 69 18 90 00 Fax : (1) 64 46 54 50
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