

APPLICATIONS

- Induction Heating
- A.C. Motor Drives
- Inverters And Choppers
- Welding
- High Frequency Rectification
- UPS

KEY PARAMETERS

V_{RRM}	2500V
$I_{F(AV)}$	650A
I_{FSM}	7500A
Q_r	540μC
t_{rr}	5.0μs

FEATURES

- Double side cooling
- High surge capability
- Low recovery charge

VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM} V	Conditions
DSF8025SE25	2500	$V_{RSM} = V_{RRM} + 100V$
DSF8025SG25		
DSF8025SE24	2400	
DSF8025SG24		
DSF8025SE23	2300	
DSF8025SG23		
DSF8025SE22	2200	
DSF8025SG22		
DSF8025SE21	2100	
DSF8025SG21		
DSF8025SE20	2000	
DSF8025SG20		

Lower voltage grades available.

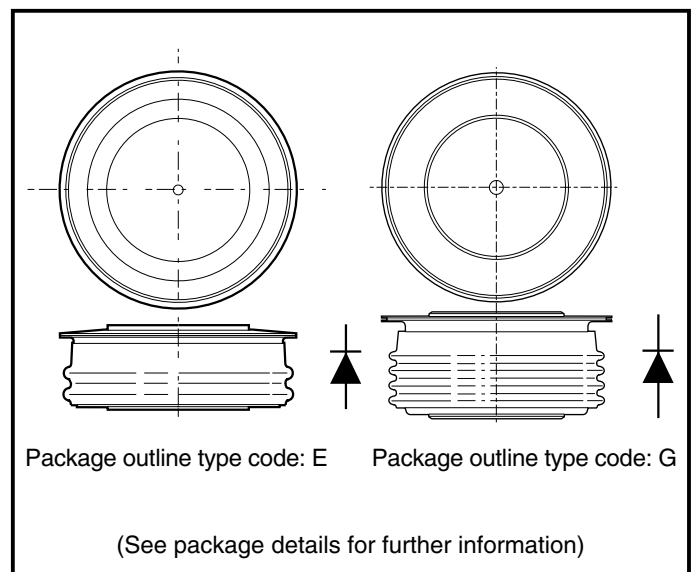


Fig. 1 Package outlines

ORDERING INFORMATION

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

DSF8025SE23 for 2300V product in an 'E' outline,

DSF8025SG23 for 2300V product in an 'G' outline,

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
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 65^{\circ}C$	650	A
$I_{F(RMS)}$	RMS value	$T_{case} = 65^{\circ}C$	1020	A
I_F	Continuous (direct) forward current	$T_{case} = 65^{\circ}C$	785	A
Single Side Cooled (Anode side)				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, $T_{case} = 65^{\circ}C$	385	A
$I_{F(RMS)}$	RMS value	$T_{case} = 65^{\circ}C$	604	A
I_F	Continuous (direct) forward current	$T_{case} = 65^{\circ}C$	465	A

SURGE RATINGS

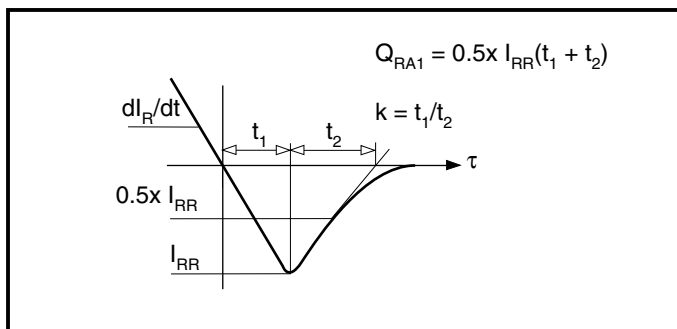
Symbol	Parameter	Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; with 0% V_{RRM} , $T_j = 150^{\circ}C$	7.5	kA
I^2t	I^2t for fusing		281×10^3	A^2s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; with 50% V_{RRM} , $T_j = 150^{\circ}C$	6.0	kA
I^2t	I^2t for fusing		180×10^3	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	-	0.047	$^{\circ}C/W$
		Single side cooled	Anode dc	-	0.094	$^{\circ}C/W$
			Cathode dc	-	0.094	$^{\circ}C/W$
$R_{th(c-h)}$	Thermal resistance - case to heatsink	Clamping force 8.0kN with mounting compound	Double side	-	0.018	$^{\circ}C/W$
			Single side	-	0.036	$^{\circ}C/W$
T_{vj}	Virtual junction temperature	Forward (conducting)	-	150	$^{\circ}C$	
T_{stg}	Storage temperature range		-55	175	$^{\circ}C$	
-	Clamping force		7.0	9.0	kN	

CHARACTERISTICS

Symbol	Parameter	Conditions	Typ.	Max.	Units
V_{FM}	Forward voltage	At 1000A peak, $T_{case} = 25^{\circ}C$	-	2.3	V
I_{RM}	Peak reverse current	At V_{RRM} , $T_{case} = 150^{\circ}C$	-	50	mA
t_{rr}	Reverse recovery time	$I_F = 1000A$, $di_{RR}/dt = 100A/\mu s$ $T_{case} = 150^{\circ}C$, $V_R = 100V$	-	5.0	μs
Q_{RA1}	Recovered charge (50% chord)		-	540	μC
I_{RR}	Reverse recovery current		-	235	A
K	Soft factor		1.8	-	-
V_{TO}	Threshold voltage	At $T_{vj} = 150^{\circ}C$	-	1.48	V
r_T	Slope resistance	At $T_{vj} = 150^{\circ}C$	-	0.8	$m\Omega$
V_{FRP}	Peak forward recovery voltage	$di/dt = 1000A/\mu s$, $T_j = 125^{\circ}C$	70	-	V

DEFINITION OF K FACTOR AND Q_{RA1}


CURVES

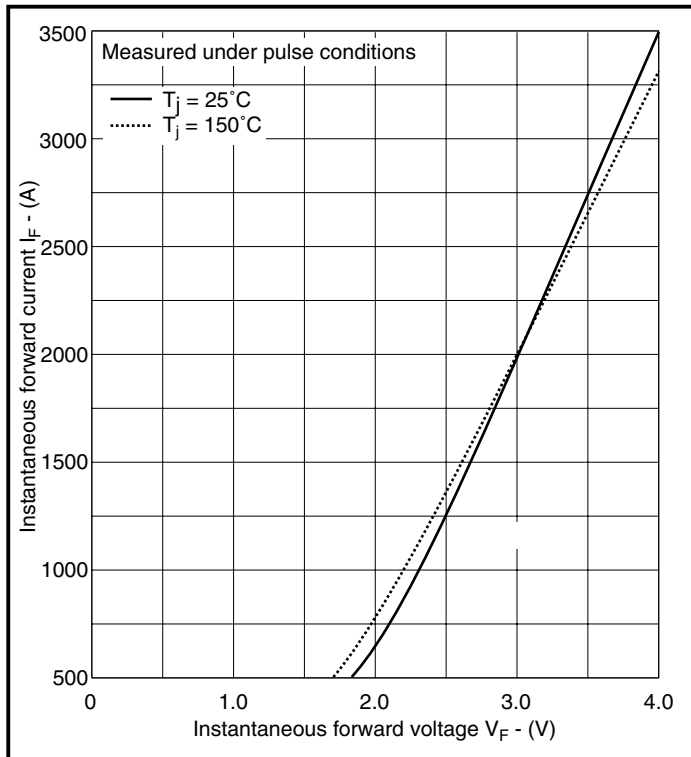


Fig.2 Maximum (limit) forward characteristics

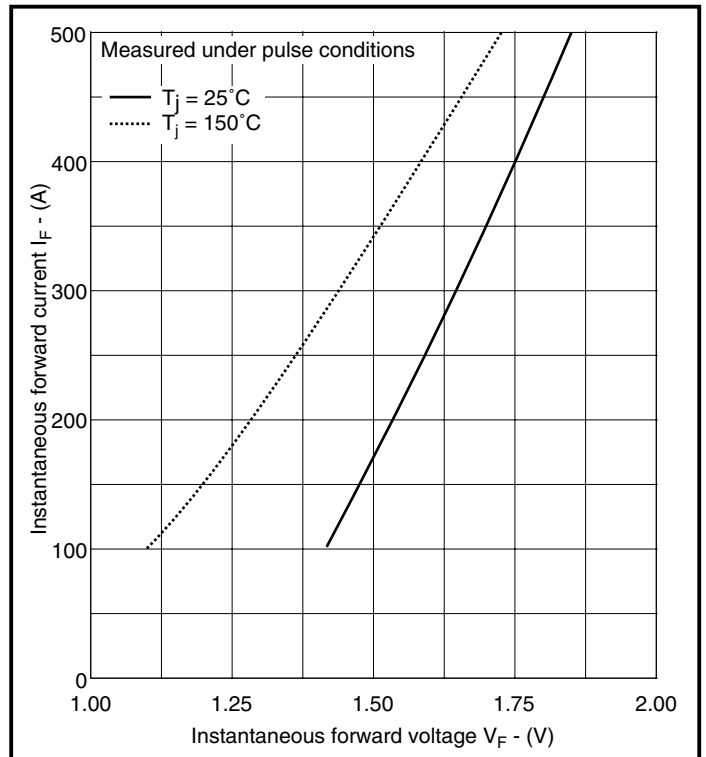


Fig.3 Maximum (limit) forward characteristics

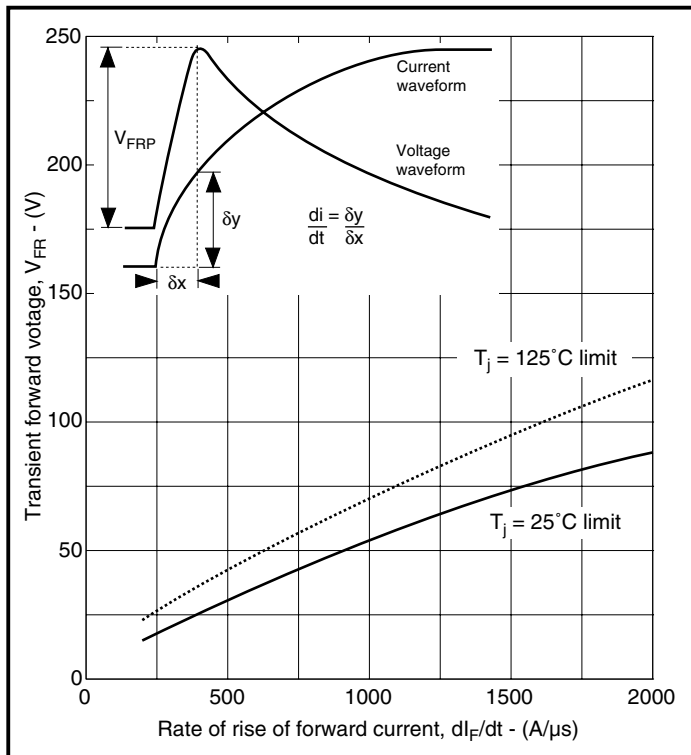


Fig.5 Transient forward voltage vs rate of rise of forward current

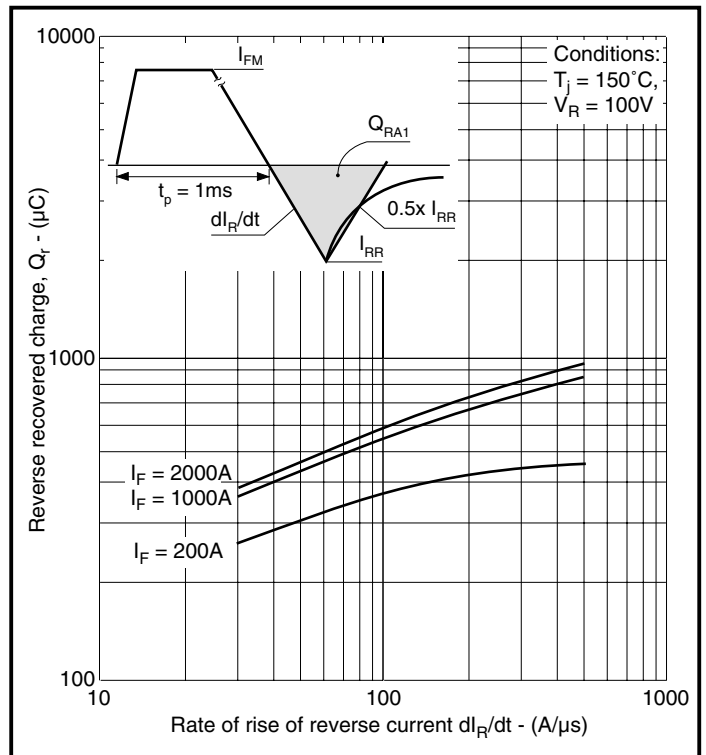


Fig.6 Recovered charge

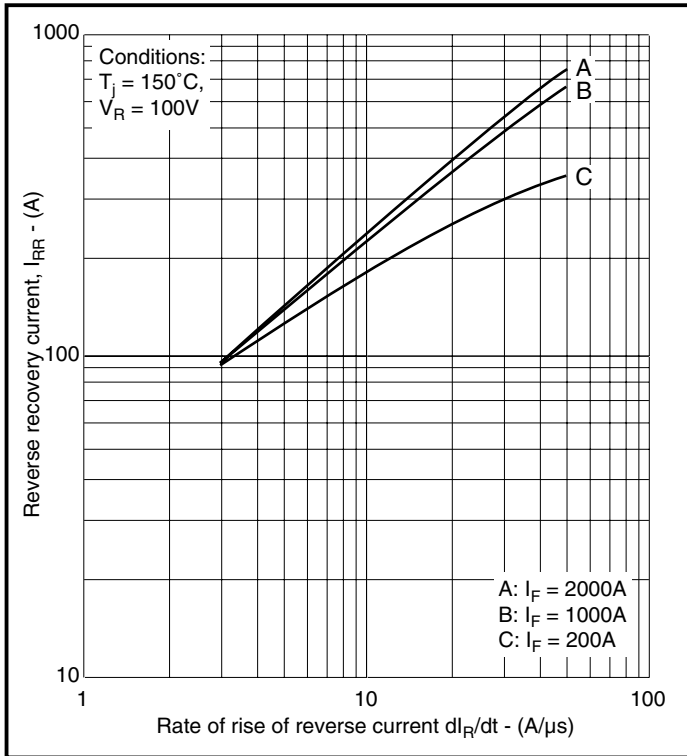


Fig.7 Typical reverse recovery current vs rate of fall of forward current

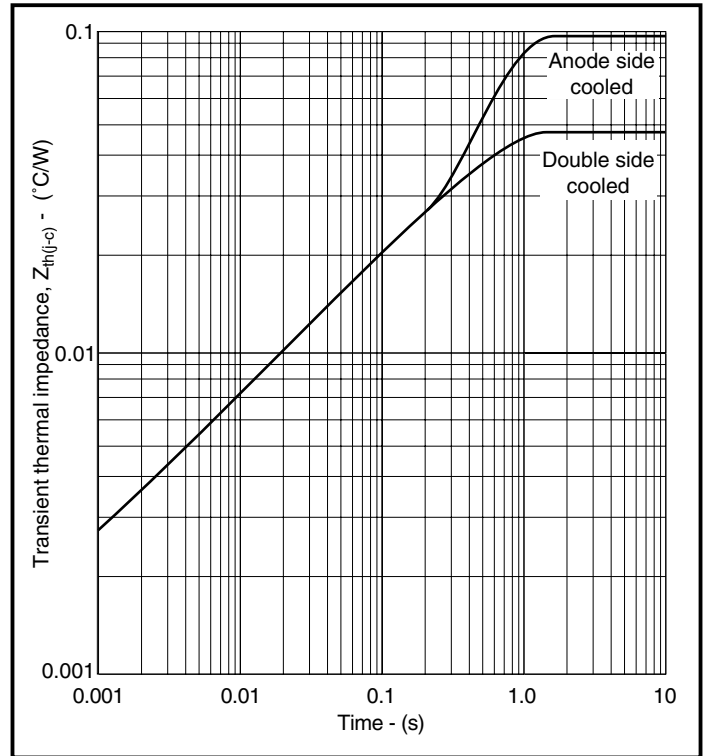


Fig.8 Maximum (limit) transient thermal impedance - junction to case - ($^\circ\text{C/W}$)

PACKAGE DETAILS

For further package information, please visit our website or contact Customer Services. All dimensions in mm, unless stated otherwise. DO NOT SCALE.

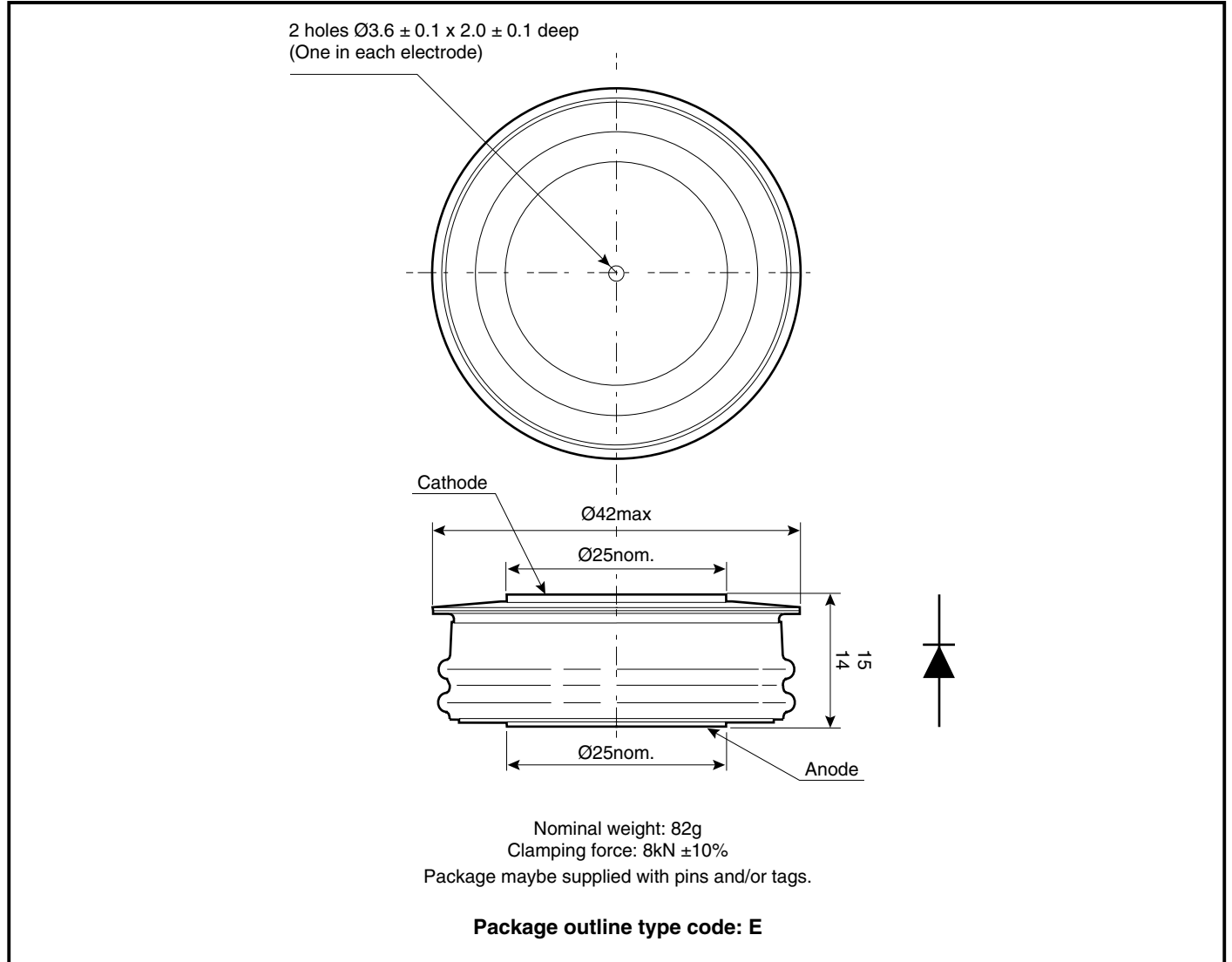
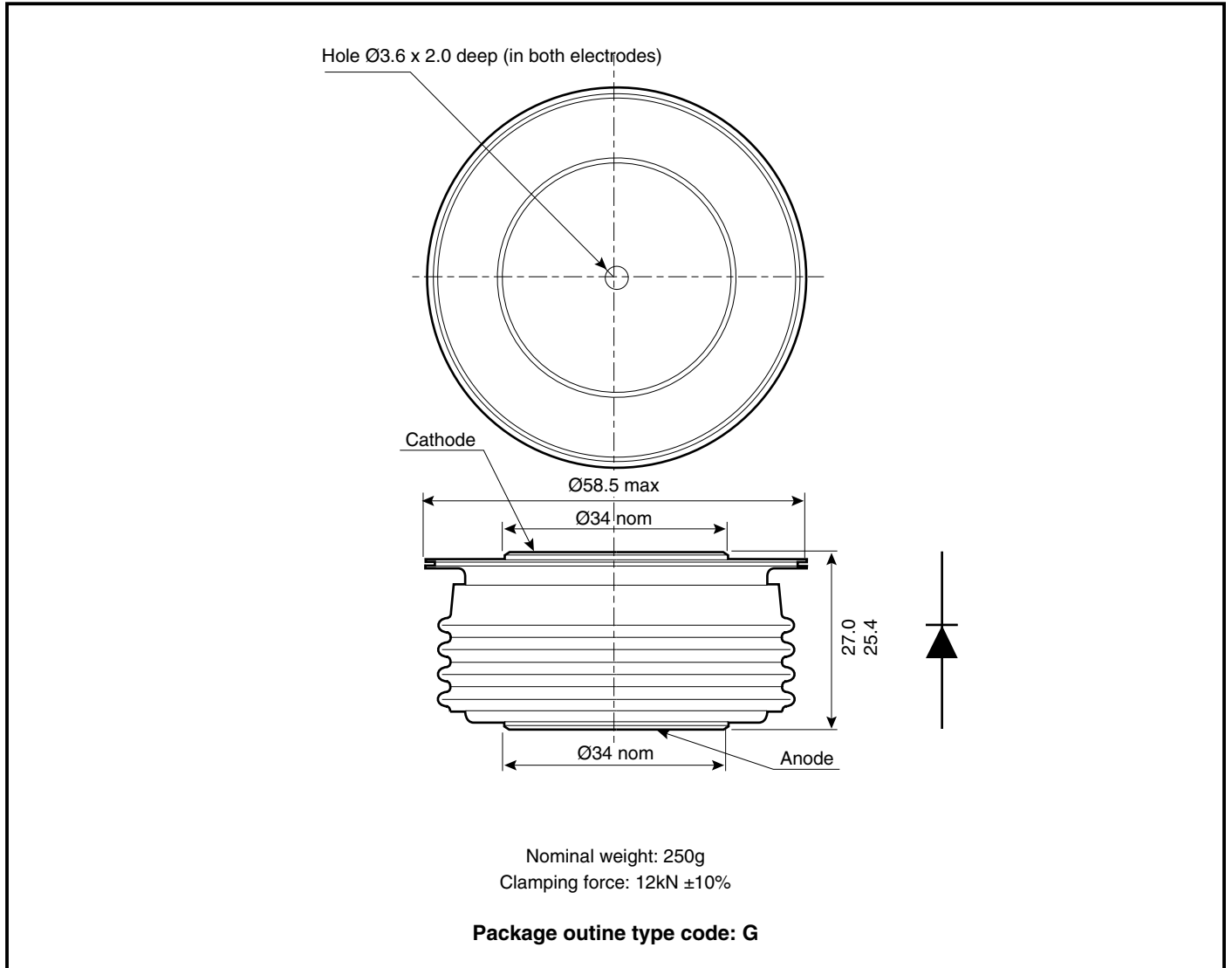


Fig. 9 Package details - E

PACKAGE DETAILS

For further package information, please visit our website or contact Customer Services. All dimensions in mm, unless stated otherwise. DO NOT SCALE.


Fig. 10 Package details - G



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