

FEATURES

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

APPLICATIONS

- Induction Heating
- High Frequency Rectification
- Snubber, Antiparallel and FWD for GTO

VOLTAGE RATINGS

Part and Ordering Number	Repetitive Peak Voltages 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.

ORDERING INFORMATION

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

For example:

DSF8025SE20 for a 2000V device in an “E” outline

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

KEY PARAMETERS

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

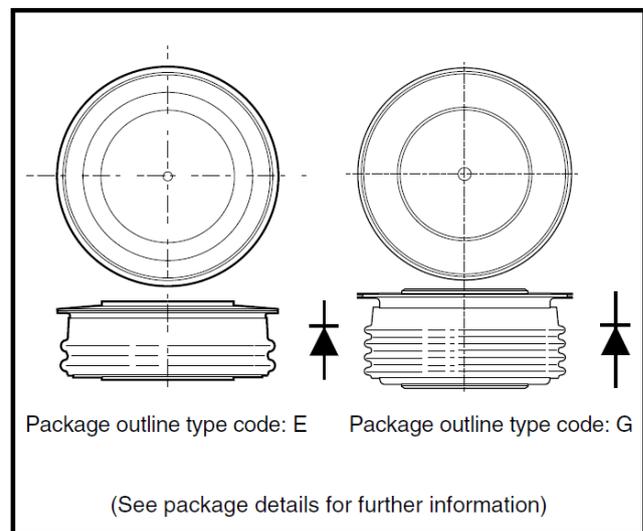


Fig. 1 Package outline

CURRENT RATINGS

Symbol	Parameter	Test 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) on-state 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) on-state current	$T_{case} = 65^{\circ}C$ --	465	A

SURGE RATINGS

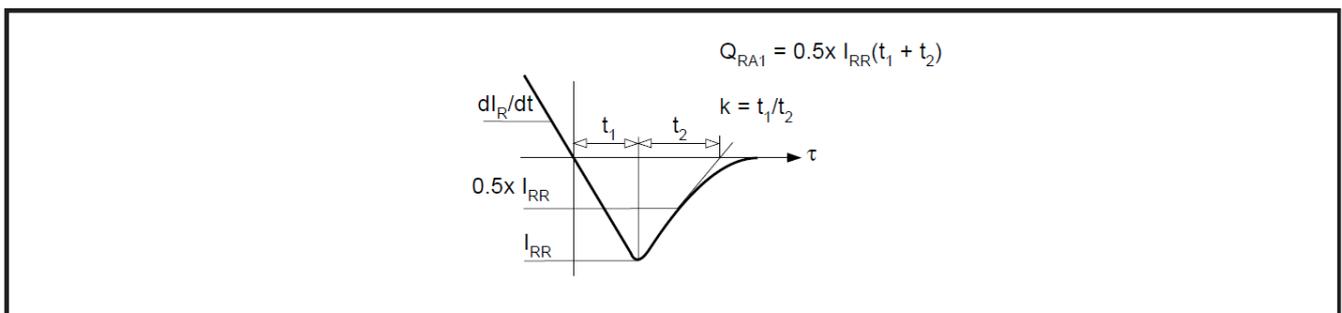
Symbol	Parameter	Test Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) on-state current	10ms half sine, $T_{case} = 150^{\circ}C$ $V_R = 50\% V_{RRM}$	6.0	kA
I^2t	I^2t for fusing		180	kA^2s
I_{FSM}	Surge (non-repetitive) on-state current	10ms half sine, $T_{case} = 150^{\circ}C$ $V_R = 0$	7.5	kA
I^2t	I^2t for fusing		281	kA^2s

THERMAL AND MECHANICAL RATINGS

Symbol	Parameter	Test 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	On-state (conducting)		-	150	$^{\circ}C$
		Reverse (blocking)		-	150	$^{\circ}C$
T_{stg}	Storage temperature range		-55	175	$^{\circ}C$	
F_m	Clamping force		7.0	9.0	kN	

CHARACTERISTICS

Symbol	Parameter	Test 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_{DRM} , $T_{case} = 150^{\circ}C$	-	50	mA
t_{rr}	Reverse recovery time	$I_F = 750A$, $dI_{RR}/dt = 100A/\mu s$ $T_{case} = 125^{\circ}C$, $V_R = 100V$		5.0	μs
Q_S	Total stored charge		-	540	μC
I_{rr}	Peak reverse recovery current			235	A
K	Softness 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_{FRM}	Forward recovery voltage	$Di/dt = 1000A/\mu s$, $T_j = 125^{\circ}C$	70		V

DEFINITION OF K FACTOR AND Q_{RA1}


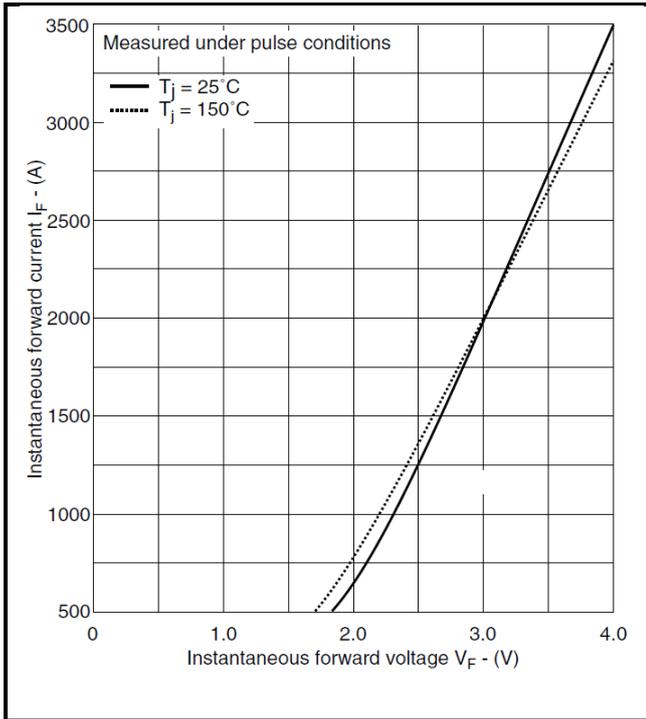


Fig.2 Maximum (limit) on-state characteristics

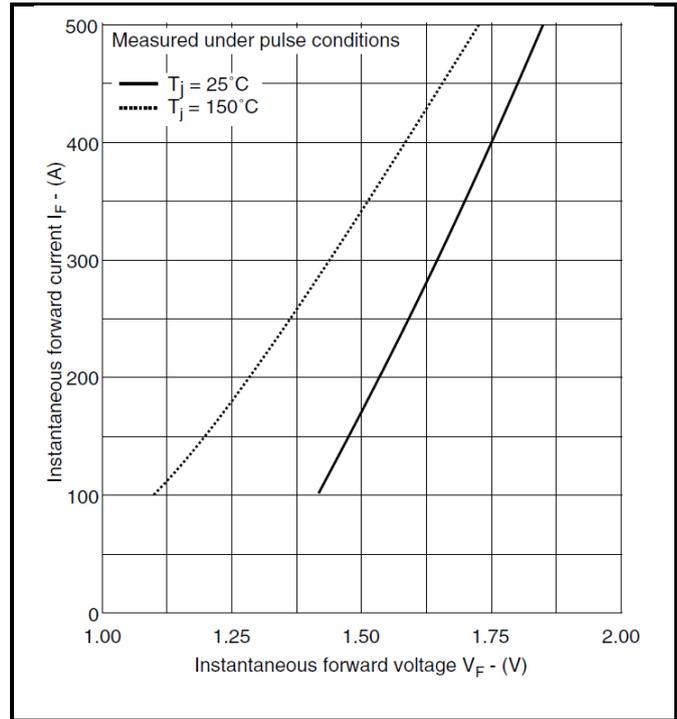


Fig.3 Maximum (limit) on-state characteristics

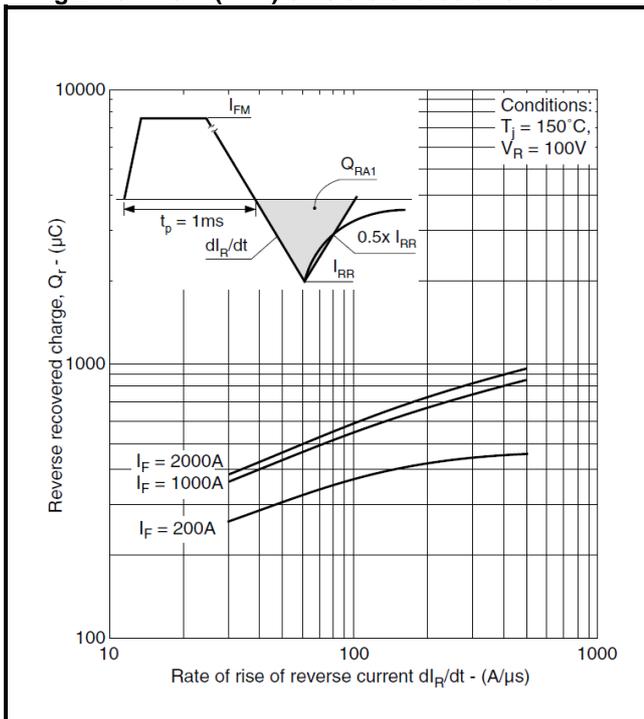


Fig.4 Recovered charge

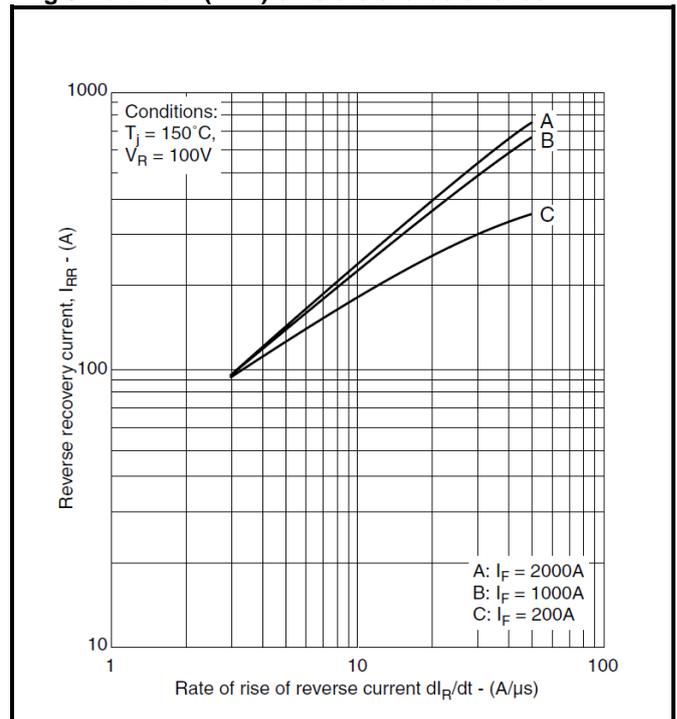


Fig.5 Typical reverse recovery current

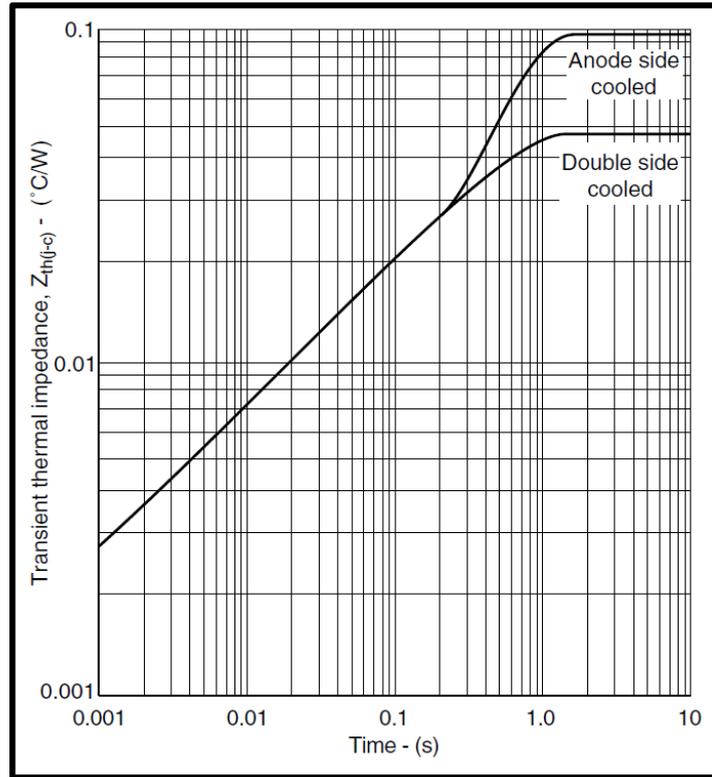


Fig.6 Maximum (limit) transient thermal impedance- junction to case

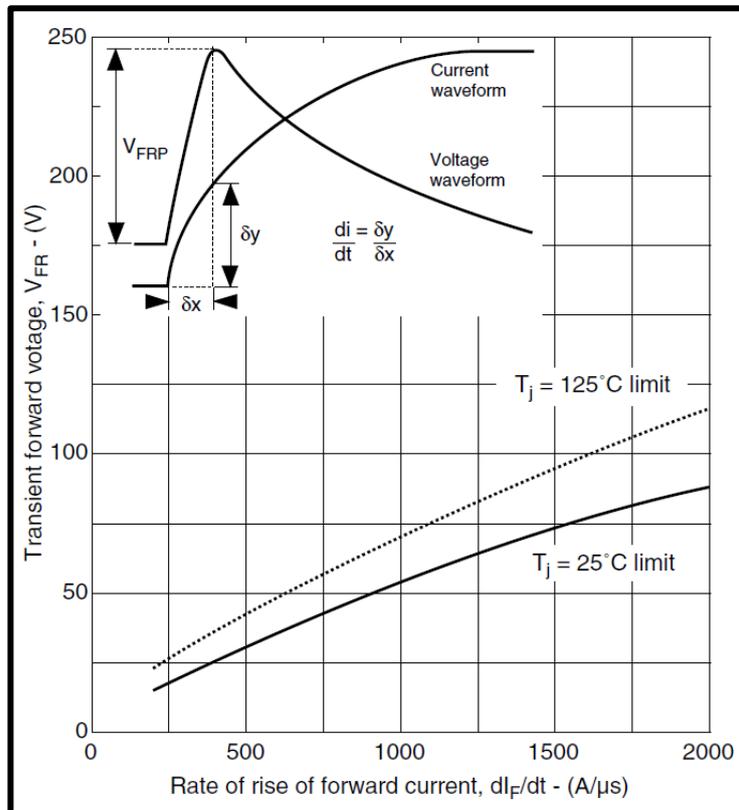
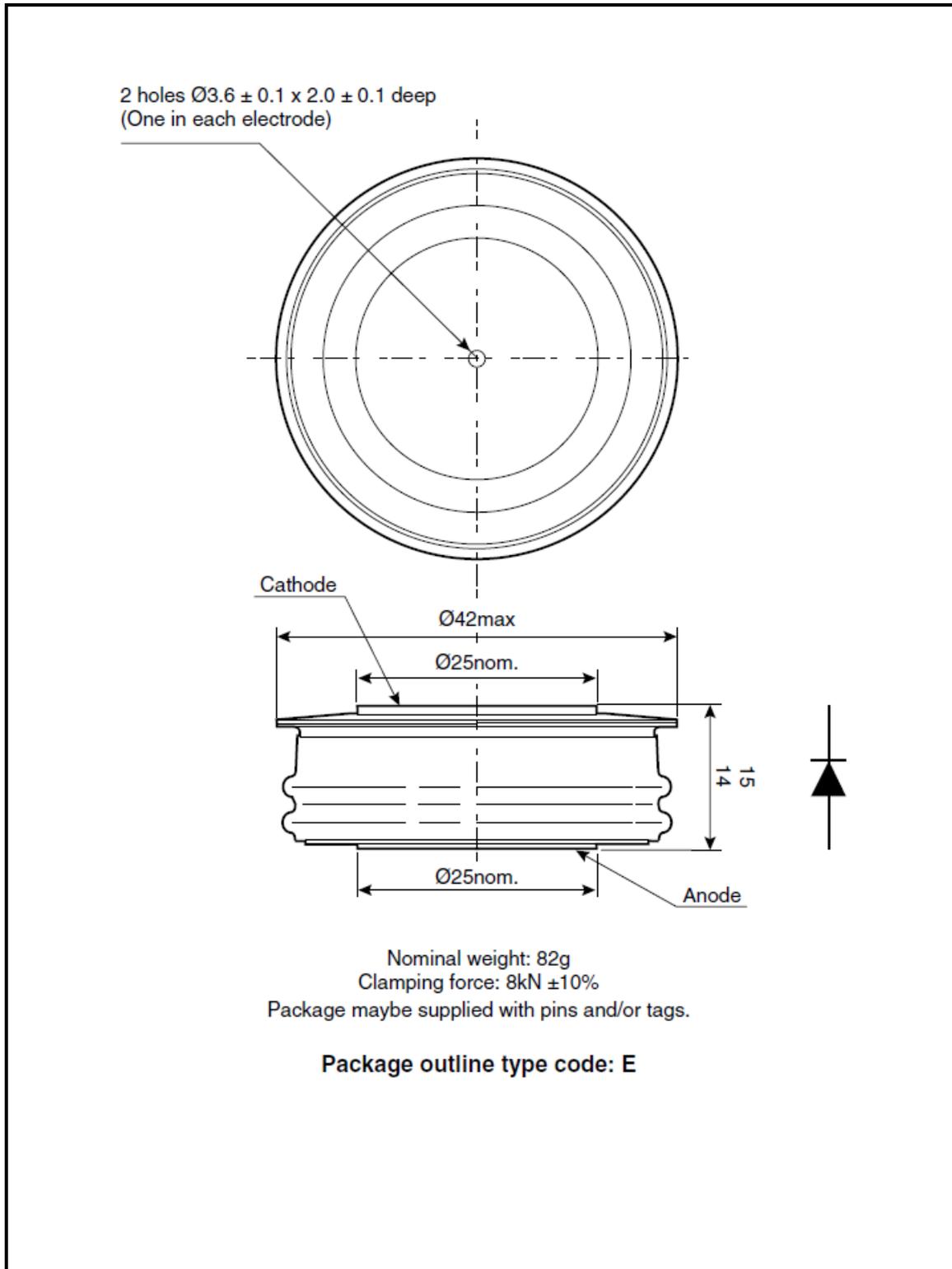


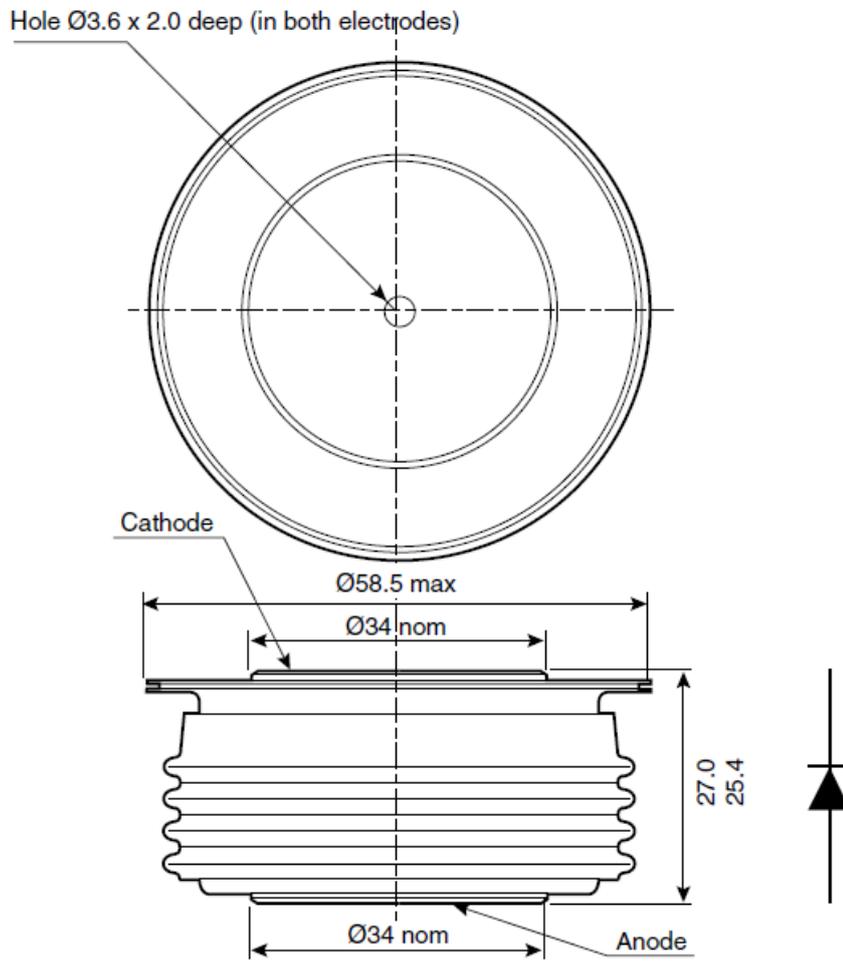
Fig.7 Transient forward voltage

PACKAGE DETAILS

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



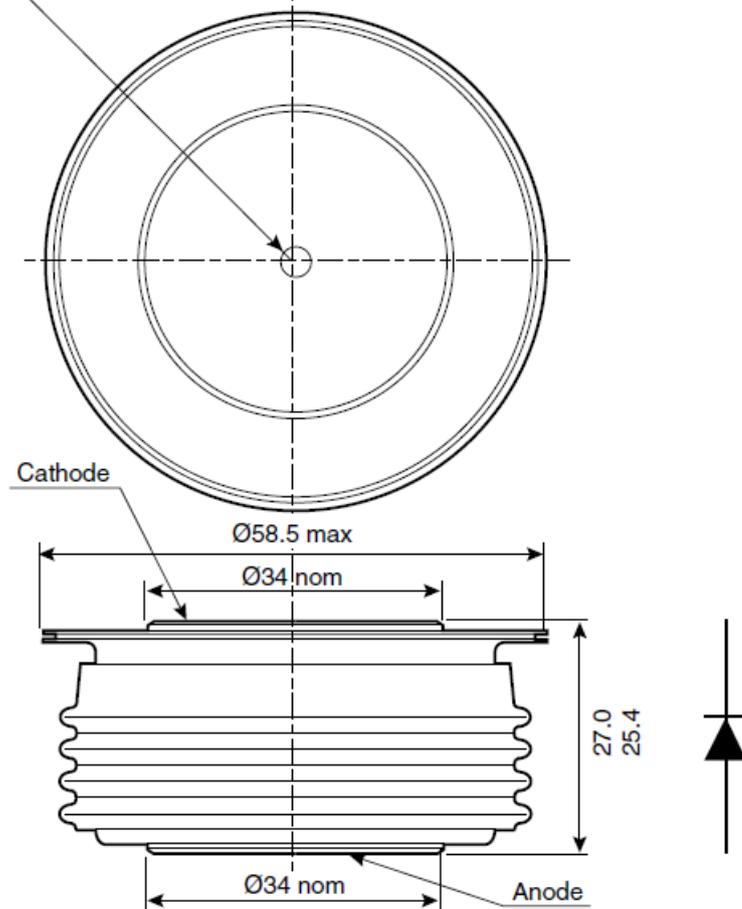
Note: Some packages may be supplied with gate and or tags.



Nominal weight: 250g
Clamping force: 12kN ±10%

Package outline type code: G

Hole $\varnothing 3.6 \times 2.0$ deep (in both electrodes)



Nominal weight: 250g
Clamping force: 12kN $\pm 10\%$

Package outline type code: G

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The products must not be touched when operating because there is a danger of electrocution or severe burning. Always use protective safety equipment such as appropriate shields for the product and wear safety glasses. Even when disconnected any electric charge remaining in the product must be discharged and allowed to cool before safe handling using protective gloves.

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We annotate datasheets in the top right hand corner of the front page, to indicate product status if it is not yet fully approved for production. The annotations are as follows:-

Target Information:	This is the most tentative form of information and represents a very preliminary specification. No actual design work on the product has been started.
Preliminary Information:	The product design is complete and final characterisation for volume production is in progress. The datasheet represents the product as it is now understood but details may change.
No Annotation:	The product has been approved for production and unless otherwise notified by Dynex any product ordered will be supplied to the current version of the data sheet prevailing at the time of our order acknowledgement.

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HEADQUARTERS OPERATIONS

DYNEX SEMICONDUCTOR LIMITED
Doddington Road, Lincoln, Lincolnshire, LN6 3LF
United Kingdom.
Phone: +44 (0) 1522 500500
Fax: +44 (0) 1522 500550
Web: <http://www.dynexsemi.com>

CUSTOMER SERVICE

Phone: +44 (0) 1522 502753 / 502901
Fax: +44 (0) 1522 500020
e-mail: power_solutions@dynexsemi.com