

KEY PARAMETERS

V_{DRM}	4500V
$I_{T(AV)}$	1670A
I_{TSM}	37000A
di_T/dt	22000A/ μ s

APPLICATIONS

- Pulse Power
- Crowbars
- Ignitron Replacement

FEATURES

- Double Side Cooling
- Fast Turn-on
- Low Turn-on Losses

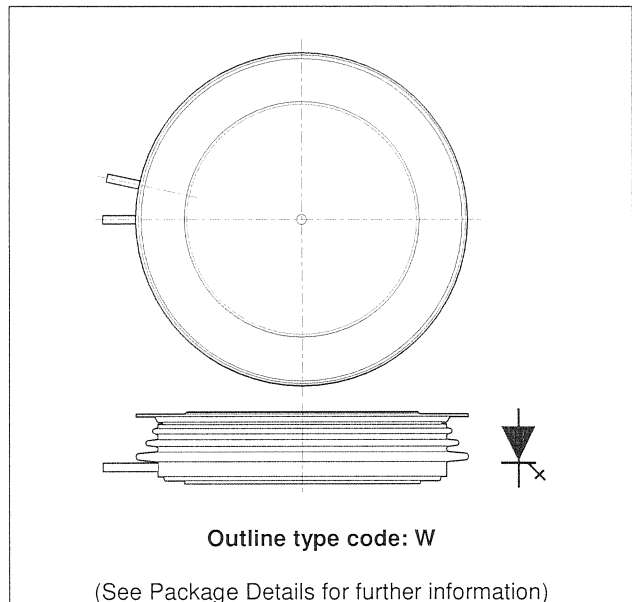


Fig. 1 Package outline

VOLTAGE RATINGS

Type Number	Repetitive Peak Off-state Voltage V_{DRM} (V)	Repetitive Peak Reverse Voltage V_{RRM} (V)	Conditions
PT85QWx45	4500	16	$T_{vj} = 0^\circ$ to 125° C, $I_{DRM} = I_{RRM} = 50$ mA, $V_{DRM}, V_{RRM} t_p = 10$ ms

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
Double Side Cooled				
$I_{T(AV)}$	Mean on-state current	$T_{case} = 80^\circ$ C, Half sine 50Hz resistive load	1670	A
$I_{T(RMS)}$	RMS on-state current	$T_{HS} = 80^\circ$ C	1225	A

SURGE RATINGS

Symbol	Parameter	Test Conditions	Max.	Units
I_{TSM}	Surge (non repetitive) on-state current	10ms half sine. $T_{case} = 125^{\circ}C$	29.6	kA
I^2t	I^2t for fusing	$V_R = 50\% V_{RRM} - 1/4$ sine	4.38	MA ² s
I_{TSM}	Surge (non repetitive) on-state current	10ms half sine; $T_{case} = 125^{\circ}C$	37	kA
I^2t	I^2t for fusing	$V_R = 0$	6.85	MA ² s

THERMAL AND MECHANICAL RATINGS

Symbol	Parameter	Conditions	Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance – junction to case	Double side cooled	-	0.01	$^{\circ}C/W$
$R_{th(c-h)}$	Thermal resistance – case to heatsink	Clamping force 40kN with mounting compound	-	0.001	$^{\circ}C/W$
T_{vj}	Virtual junction temperature	On-state (conducting)	-	135	$^{\circ}C$
		Reverse (blocking)	-	125	$^{\circ}C$
T_{stg}	Rate of rise of reverse gate current		-55	125	$^{\circ}C$
-	Clamping force		36.0	44.0	kN

DYNAMIC CHARACTERISTICS

Symbol	Parameter	Conditions	Min.	Max.	Units
I_{RRM}/I_{DRM}	Peak reverse and off-state current	At V_{RRM}/V_{DRM} $T_{case} = 125^{\circ}C$, $V_{RG} = 0V$	-	250	mA
dV/dt	Maximum linear rate of rise of off-state voltage	To 66% V_{DRM} ; $R_{GK} \leq 1.5\Omega$, $T_j = 125^{\circ}C$	-	200	V/ μ s
dI/dt	Rate of rise of on-state current	From 67% V_{DRM} to 90kA Gate source 130A $t_r = 1.5\mu$ s, $T_j = 125^{\circ}C$	-	22	kA/ μ s
$V_{T(TO)}$	Threshold voltage	At $T_{vj} = 125^{\circ}C$	-	1.45	V
r_T	On-state slope resistance	At $T_{vj} = 125^{\circ}C$	-	0.3	m Ω

GATE TRIGGER CHARACTERISTICS AND RATINGS

Symbol	Parameter	Conditions	Min.	Max.	Units
V_{GT}	Gate trigger voltage	$V_{DRM} = 5V$, $T_{case} = 25^{\circ}C$	1.0	4.0	V
I_{GT}	Gate trigger current	$V_{DRM} = 5V$, $T_{case} = 25^{\circ}C$	-	1.5	A

ORDERING INFORMATION

PT Pulse Power Thyristor
 85Q Device type
 W package outline type code
 x lead length (see table, right)
 45 Voltage x 100

Lead length (x)		
O	No lead	
C	8"	200mm
D	10"	250mm
E	12"	300mm
F	16"	400mm
G	18"	450mm
H	20"	500mm
J	24"	600mm
K	30"	750mm
L	40"	1000mm

CURVES

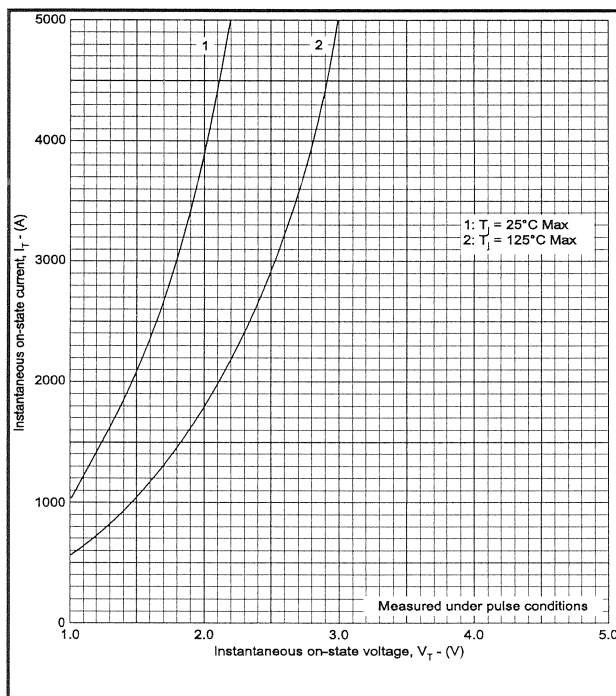


Fig.2 Maximum (limit) on-state characteristics

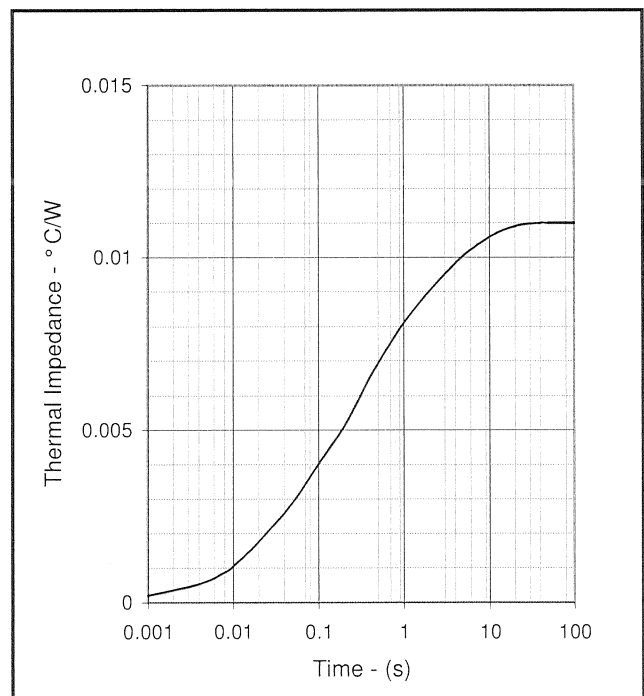


Fig.3 Maximum (limit) transient thermal impedance-double side cooled

PACKAGE DETAILS

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

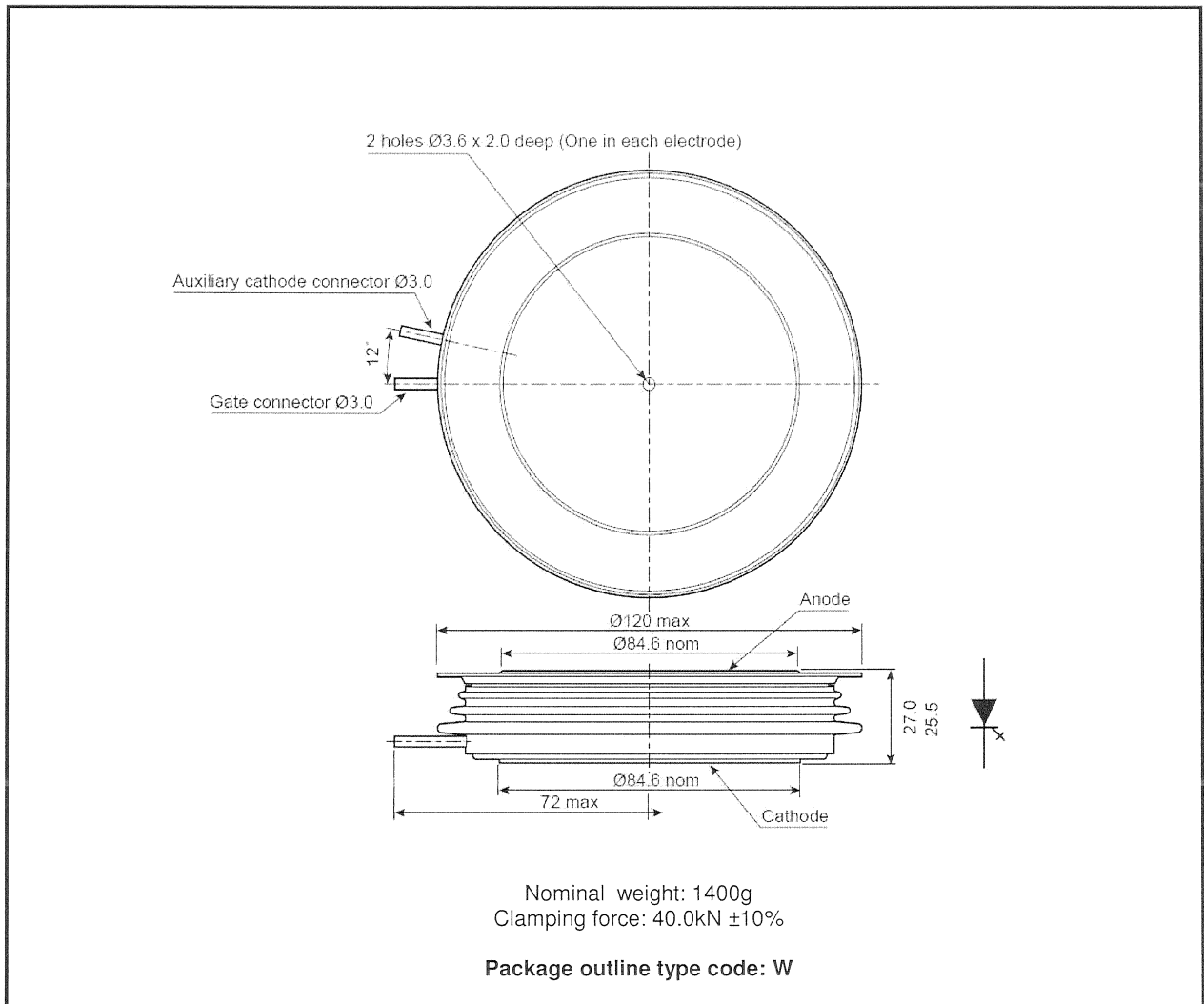


Fig.4 Package outline

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