

FEATURES

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

APPLICATIONS

- Pulse Power
- Crowbars
- Ignitron replacement

VOLTAGE RATINGS

Part and Ordering Number	Repetitive Peak Voltages V_{DRM} and V_{RRM} V	Conditions
PT40QPx45	4500/16	$T_{vj} = 0^{\circ}\text{C}$ to 125°C , $I_{DRM} = I_{RRM} = 50\text{mA}$, $V_{DRM}, V_{RRM} t_p = 10\text{ms}$,

Lower voltage grades available.

ORDERING INFORMATION

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

For example:

PT40QPx45

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

KEY PARAMETERS

V_{DRM}	4500V
$I_{T(AV)}$	760A
I_{TSM}	13000A
di/dt	5000A/μs

* Higher dV/dt selections available

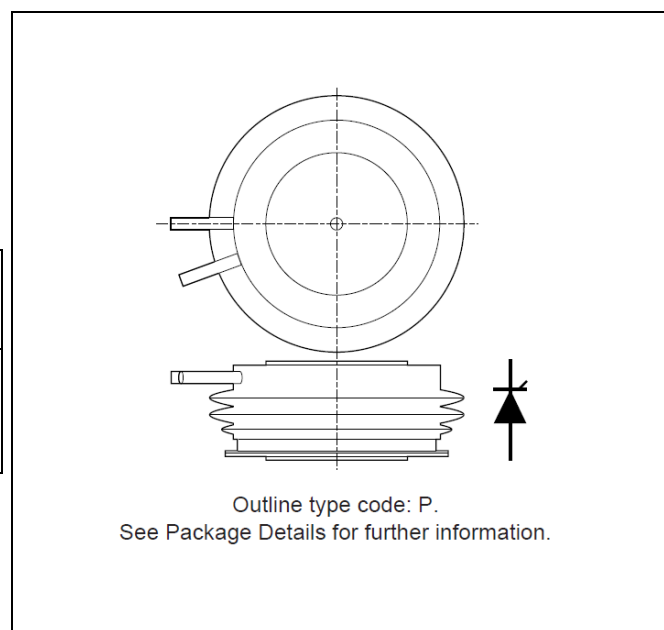


Fig. 1 Package outline

CURRENT RATINGS

Symbol	Parameter	Test Conditions	Max.	Units
Double Side Cooled				
$I_{T(AV)}$	Mean on-state current	Half wave resistive load, $T_{case} = 80^{\circ}C$	760	A
$I_{T(RMS)}$	RMS value	-	1190	A

SURGE RATINGS

Symbol	Parameter	Test Conditions	Max.	Units
I_{TSM}	Surge (non-repetitive) on-state current	10ms half sine, $T_{case} = 125^{\circ}C$ $V_R = 50\% V_{RRM}$	10.4	kA
I^2t	I^2t for fusing		0.541	MA ² s
I_{TSM}	Surge (non-repetitive) on-state current	10ms half sine, $T_{case} = 125^{\circ}C$ $V_R = 0$	13	kA
I^2t	I^2t for fusing		0.845	MA ² s

THERMAL AND MECHANICAL RATINGS

Symbol	Parameter	Test Conditions	Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance – junction to case	Double side cooled	-	0.033	$^{\circ}C/W$
$R_{th(c-h)}$	Thermal resistance – case to heatsink	Clamping force 11kN	-	0.008	$^{\circ}C/W$
T_{vj}	Virtual junction temperature	Blocking V_{DRM} / V_{RRM}	-	125	$^{\circ}C$
		On-state (conducting)	-	135	$^{\circ}C$
T_{stg}	Storage temperature range		-55	125	$^{\circ}C$
F_m	Clamping force		11.0	15.0	kN

DYNAMIC CHARACTERISTICS

Symbol	Parameter	Test Conditions		Min.	Max.	Units
I_{RRM}/I_{DRM}	Peak reverse and off-state current	At V_{RRM}/V_{DRM} , $T_{case} = 125^{\circ}C$		-	50	mA
dV/dt	Max. linear rate of rise of off-state voltage	To 67% V_{DRM} , $T_j = 125^{\circ}C$, $R_{gk} \leq 1.5\Omega$		-	200	V/ μ s
dI/dt	Rate of rise of on-state current	From 67% V_{DRM} to 20kA Gate source 30A $t_r < 1.5\mu$ s, $T_j = 125^{\circ}C$	Non-repetitive	-	5000	A/ μ s
$V_{T(TO)}$	Threshold voltage	$T_{vj} = 125^{\circ}C$		-	1.4	V
r_T	On-state slope resistance – Low level	$T_{case} = 125^{\circ}C$		-	0.152	m Ω

GATE TRIGGER CHARACTERISTICS AND RATINGS

Symbol	Parameter	Test Conditions	Typ.	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

CURVES

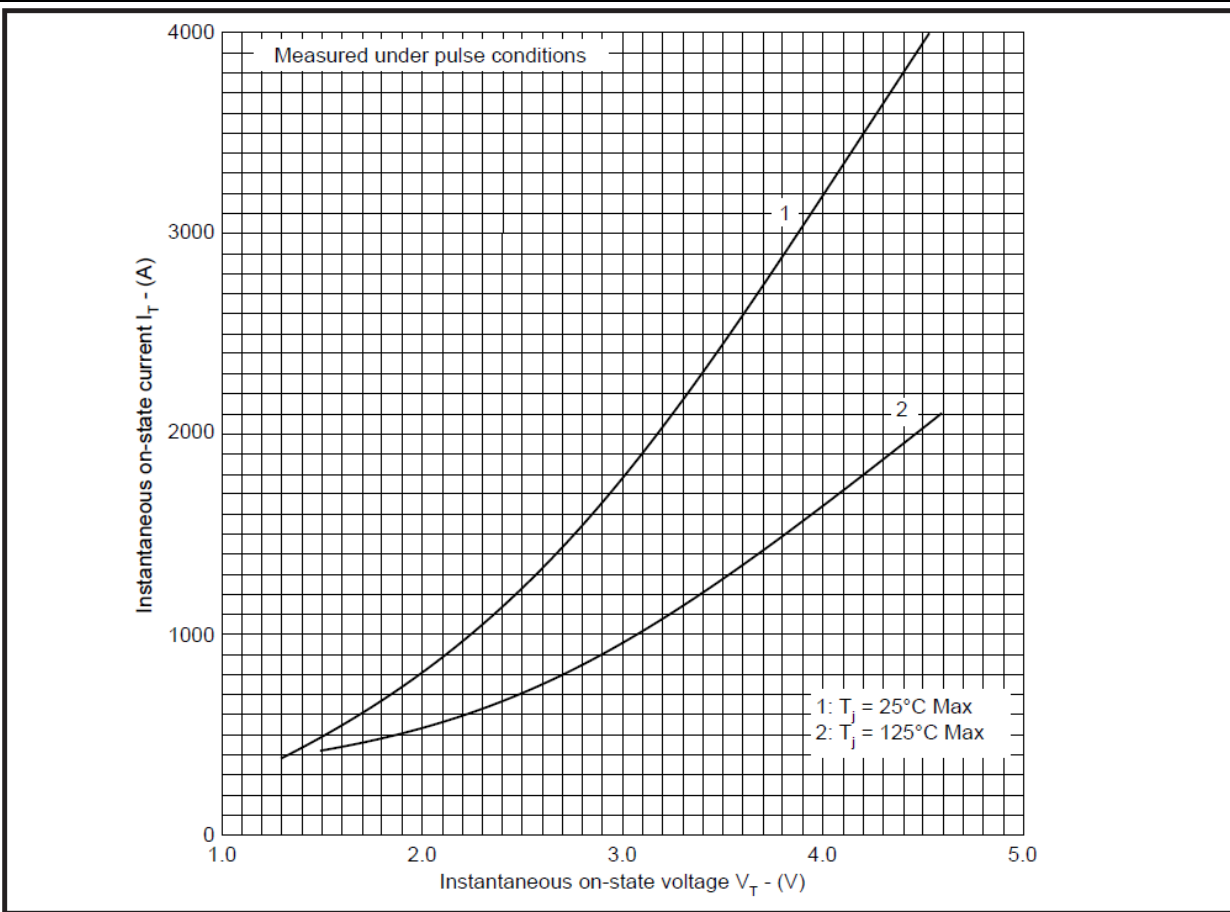


Fig.2 Maximum (limit) on-state characteristics

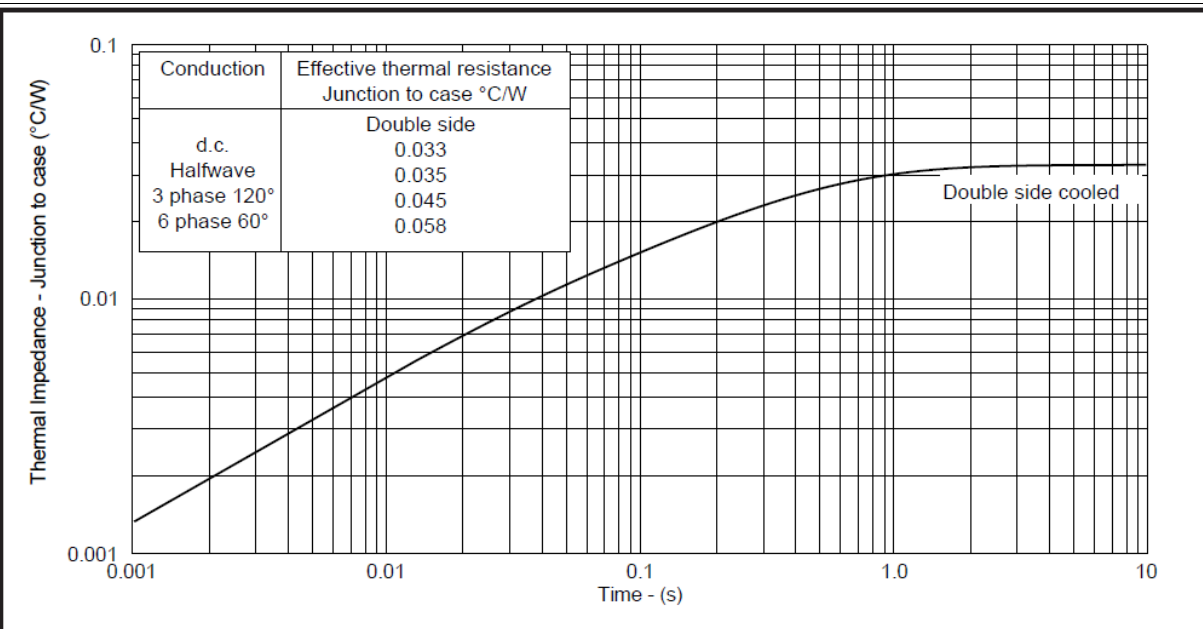


Fig.3 Maximum (limit) transient thermal impedance - junction to case

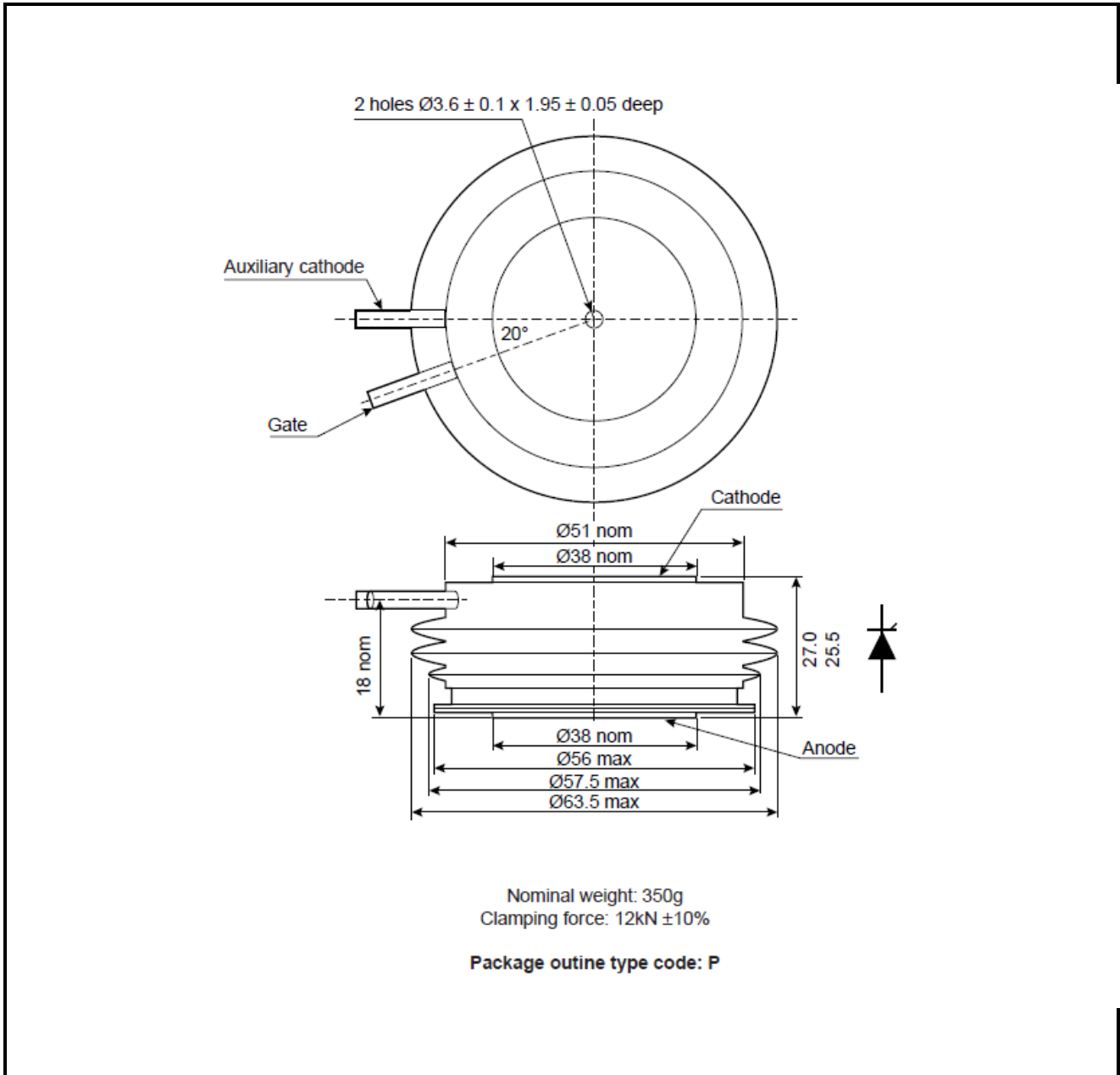
ORDERING INFORMATION

PT Pulse Power Thyristor
40Q Device type
P Package outline type code
x lead length (see table, right)
45 Voltage x100

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

PACKAGE DETAILS

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



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