

**APPLICATIONS**

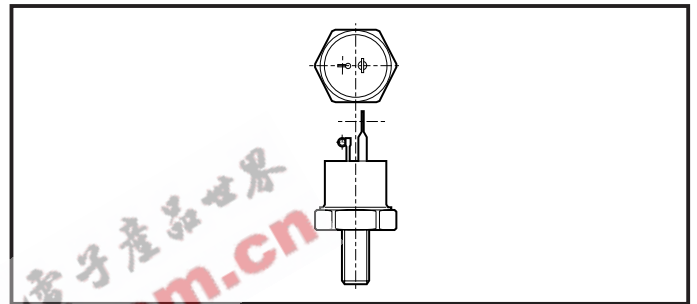
- Pulse Modulators
- Laser Diode Triggering
- Capacitor Discharge Applications

**KEY PARAMETERS**

$V_{DRM}$	<b>1600V</b>
$I_{T(AV)}$	<b>50A</b>
$I_{TSM}$	<b>800A</b>
$dI/dt$	<b>2000A/μs</b>
$dV/dt$	<b>300V/μs</b>
$t_{on}$	<b>350ns</b>

**FEATURES**

- The XT2116 is Asymmetrical Thyristor in which the reverse voltage capability has been sacrificed to enable a high forward blocking characteristic combined with excellent turn-on performance.
- Designed for rapid and efficient switching of high current pulses.



Outline type code: SO28.  
See Package Details for further information.

**VOLTAGE RATINGS**

Type Number	Max. Rise Time $t_r$ ( $T_{case} = 25^\circ C$ ) ns	Repetitive Peak Voltage		Peak Working Voltages	
		$V_{DRM}$ V	$V_{RRM}^*$ V	$V_{DWM}$ V	$V_{RWM}^*$ V
XT2116 - 1601	100	1600	< 2	1600	< 2
XT2116 - 1401	120	1400	< 2	1400	< 2
XT2116 - 1201	120	1200	< 2	1200	< 2
XT2116 - 1001	140	1000	< 2	1000	< 2
XT2116 - 801	160	800	< 2	800	< 2

**CURRENT RATINGS**

Symbol	Parameter	Conditions	Max.	Units
$I_{T(AV)}$	Mean on-state current	Half wave resistive load, $T_{case} = 80^\circ C$	50	A
$I_{T(RMS)}$	RMS value	$T_{case} = 80^\circ C$	79	A
$I_T$	Continuous (direct) on-state current	$T_{case} = 85^\circ C$	68	A

# XT2116

## SURGE RATINGS

Symbol	Parameter	Conditions	Max.	Units
$I_{TSM}$	Surge (non-repetitive) forward current	10ms half sine; $T_{case} = 125^{\circ}C$	800	A
$I^2t$	$I^2t$ for fusing		3200	A <sup>2</sup> s

## THERMAL AND MECHANICAL DATA

Symbol	Parameter	Conditions	Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance - junction to case	d.c.	-	0.35	$^{\circ}C/W$
$R_{th(c-h)}$	Thermal resistance - case to heatsink	Mounting torque 3.5Nm with mounting compound	-	0.25	$^{\circ}C/W$
$T_{vj}$	Virtual junction temperature	On-state (conducting)	-	125	$^{\circ}C$
$T_{stg}$	Storage temperature range		-55	125	$^{\circ}C$
-	Mounting torque		3.5*	4.0	Nm

\* Recommended value.

## DYNAMIC CHARACTERISTICS

$T_{case} = 25^{\circ}C$  unless otherwise stated.

Symbol	Parameter	Conditions	Typ.	Max.	Units
$V_{TM}$	Maximum on-state voltage	At $I_T = 100A$	-	2.0	V
$I_{RRM}/I_{DRM}$	Peak reverse and off-state current	At $V_{RRM}/V_{DRM}$	-	10/10	mA
dV/dt	Maximum linear rate of rise of off-state voltage	$T_j = 125^{\circ}C$ , $T_o V_{DRM}$ , $R_{GK} = 47\Omega$	-	300	V/ $\mu s$
dI/dt	Rate of rise of on-state current	Half sine wave of $2\mu s$ , $T_j = 125^{\circ}C$ Gate source 20V, $10\Omega$ , $t_r = 160ns$	-	2000	A/ $\mu s$
$I_L$	Latching current	-	45	-	mA
$I_H$	Holding current	-	35	-	mA
$t_d$	Delay time	$V_D = 400V$ , gate source = 500mA, $t_r = 50ns$	-	250	ns
$t_q$	Circuit commutated turn-off time	$I_T = 25A$ , $V_{RM} = 0V$ , $V_{DR} = V_{DWM}$ , $T_{case} = 120^{\circ}C$ , $R_{GK} = 47\Omega$ , dV/dt = 100V/ $\mu s$ .	-	120†	$\mu s$

† Available to 10 $\mu s$ .

## GATE TRIGGER CHARACTERISTICS AND RATINGS

$T_{\text{case}} = 25^{\circ}\text{C}$  unless otherwise stated.

Symbol	Parameter	Conditions	Typ.	Max.	Units
$V_{\text{GT}}$	Gate trigger voltage	$V_{\text{DWM}} = 12\text{V}$	0.9	3.0	V
$I_{\text{GT}}$	Gate trigger current	$V_{\text{DWM}} = 12\text{V}$	-	100*	mA
$V_{\text{FGM}}$	Peak forward gate voltage	-	-	40	V
$V_{\text{RGM}}$	Peak reverse gate voltage	-	-	10	V
$I_{\text{FGM}}$	Peak forward gate current	-	-	10	A
$P_{\text{GM}}$	Peak gate power	-	-	40	W
$P_{\text{G(AV)}}$	Average gate power	-	-	10	W

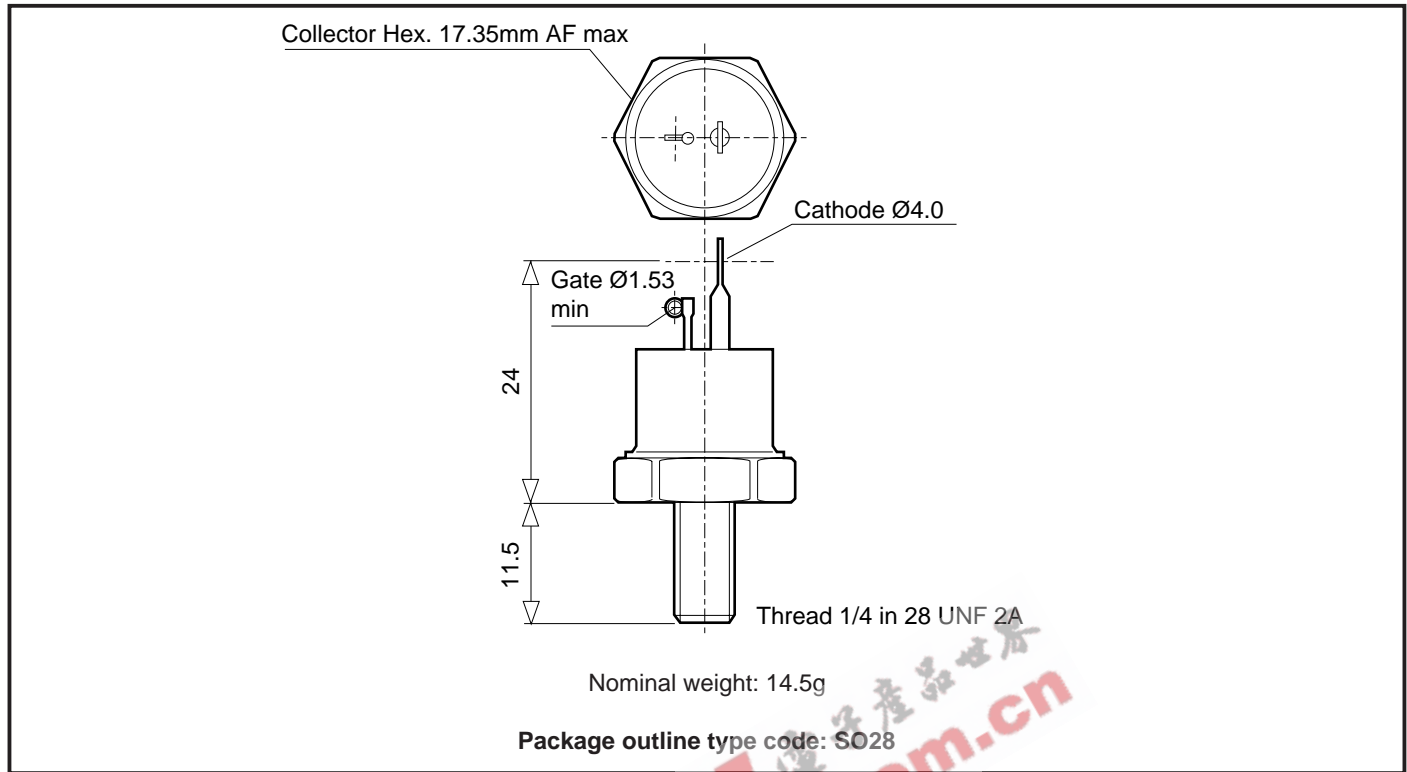
\*Recommended trigger current not less than 500mA,  $t_r < 50\text{ns}$ .

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## XT2116

### PACKAGE DETAILS

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



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**No Annotation:** The product parameters are fixed and the product is available to datasheet specification.

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