

TYNx40 Series

Tables 4: Electrical Characteristics ($T_j = 25^\circ\text{C}$, unless otherwise specified)

Symbol	Test Conditions			Value	Unit
I _{GT}	V _D = 12 V R _L = 33 Ω		MIN.	3.5	mA
			MAX.	35	
V _{GT}			MAX.	1.3	V
V _{GD}	V _D = V _{DRM} R _L = 3.3 kΩ	T _j = 125°C	MIN.	0.2	V
I _H	I _T = 500 mA Gate open		MAX.	75	mA
I _L	I _G = 1.2 x I _{GT}		MAX.	150	mA
dV/dt	V _D = 67 % V _{DRM} Gate open	T _j = 125°C	MIN.	1000	V/μs
V _{TM}	I _{TM} = 80 A tp = 380 μs	T _j = 25°C	MAX.	1.6	V
V _{t0}	Threshold voltage	T _j = 125°C	MAX.	0.85	V
R _d	Dynamic resistance	T _j = 125°C	MAX.	10	mΩ
I _{DRM} I _{RRM}	V _{DRM} = V _{RRM}	T _j = 25°C	MAX.	5	μA
		T _j = 125°C		4	mA

Table 5: Thermal resistance

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case (DC)	0.8	$^\circ\text{C/W}$
$R_{th(j-a)}$	Junction to ambient (DC)	60	$^\circ\text{C/W}$

Figure 1: Maximum average power dissipation versus average on-state current

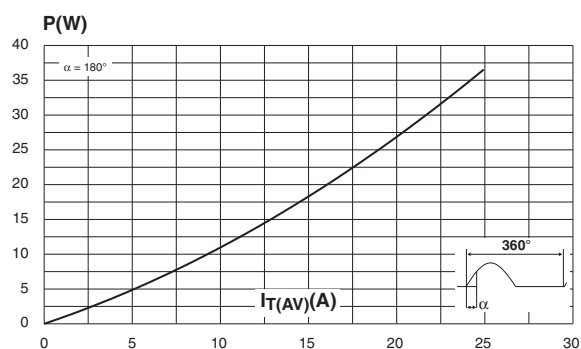


Figure 2: Average and D.C. on-state current versus case temperature

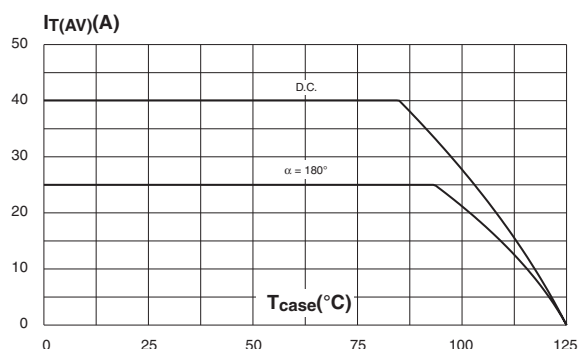


Figure 3: Relative variation of thermal impedance versus pulse duration

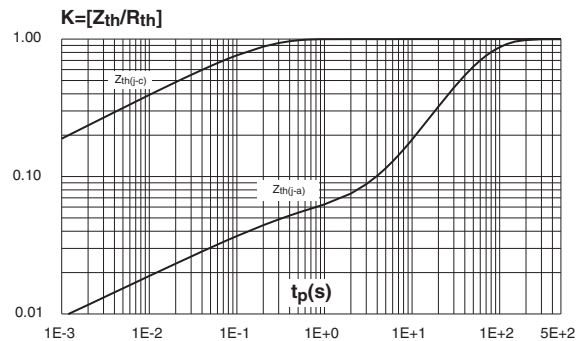


Figure 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature

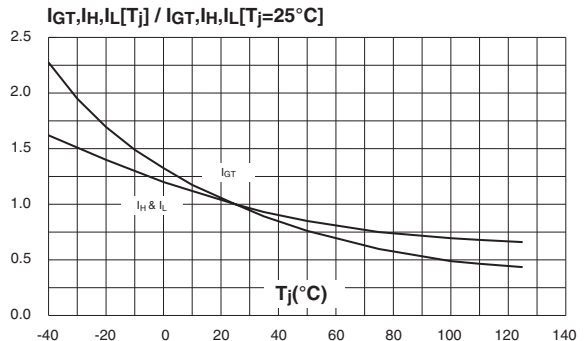


Figure 5: Surge peak on-state current versus number of cycles

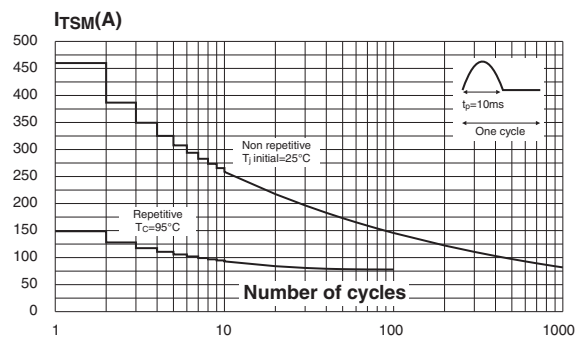


Figure 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10 ms, and corresponding values of I²t

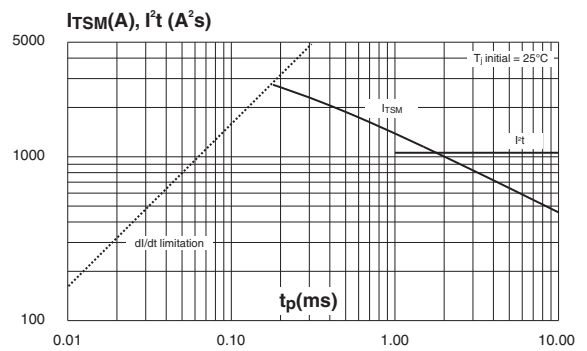
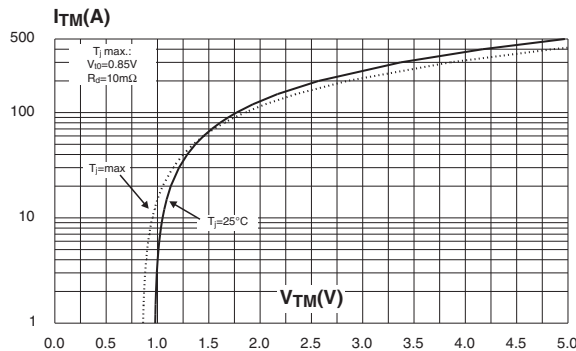


Figure 7: On-state characteristics (maximum values)



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Figure 8: Ordering Information Scheme

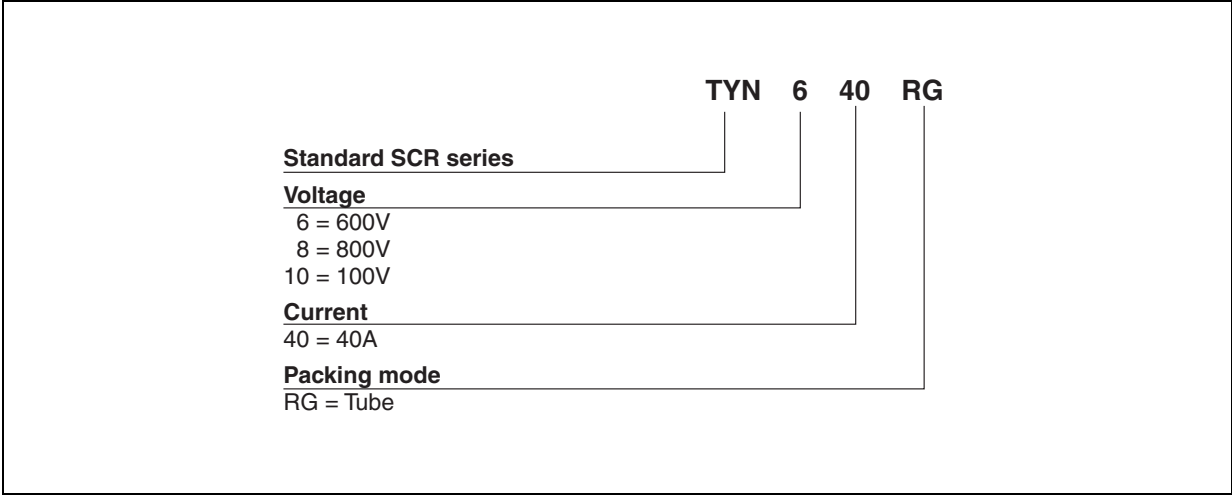
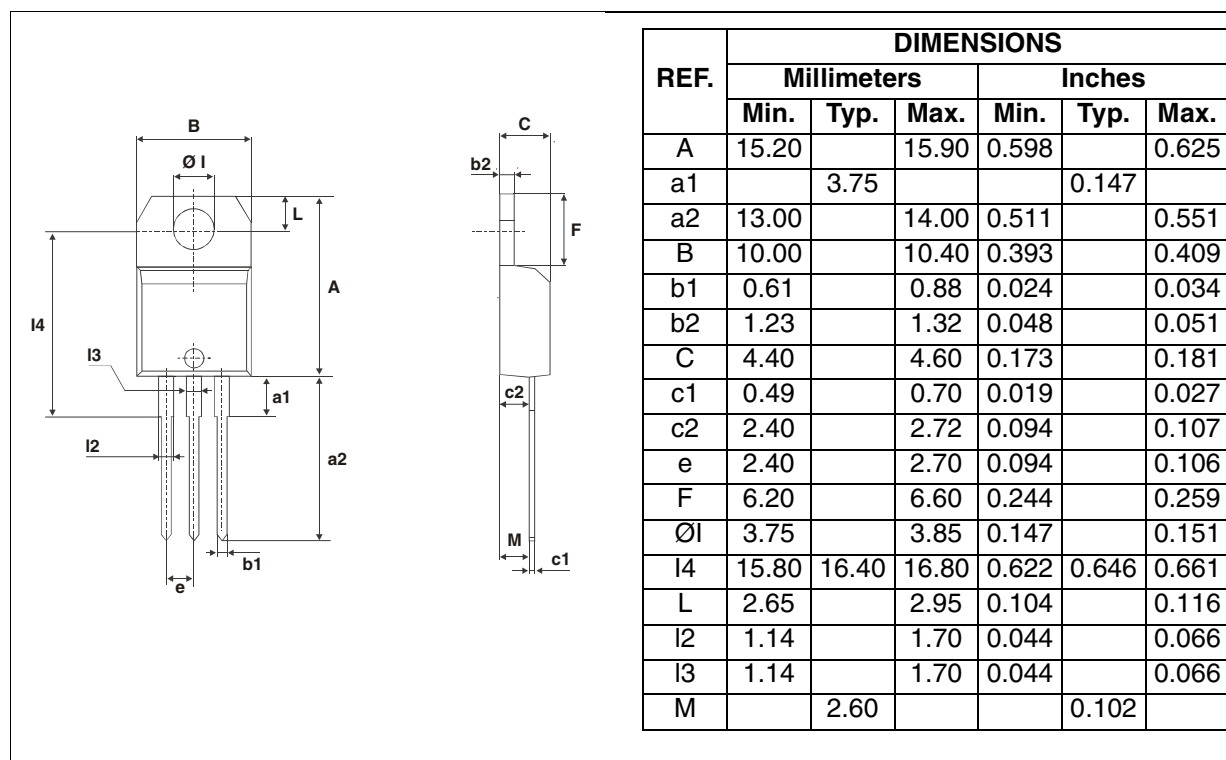


Table 6: Product Selector

Part Numbers	Voltage (xxx)			Sensitivity	Package
	600 V	800 V	1000 V		
TYNx40	X	X	X	35 mA	TO-220AB

Figure 9: TO-220AB Package Mechanical Data



In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect . The category of second level interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com.

Table 7: Ordering Information

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
TYN640RG	TYN640	TO-220AB	2.3 g	50	Tube
TYN840RG	TYN840				
TYN1040RG	TYN1040				

Table 8: Revision History

Date	Revision	Description of Changes
Apr-2002	4A	Last update.
13-Feb-2006	5	TO-220AB delivery mode changed from bulk to tube. ECOPACK statement added.

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