



With high ability to withstand the shock loading of large current, TYN12H-800C of silicon controlled rectifiers provides high dV/dt rate with strong resistance to electromagnetic interference. It is especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. Package TO-220C is RoHS compliant.

Symbol	Value	Unit
$I_{T(AV)}$	12	A
V_{DRM}/V_{RRM}	800	V
I_{GT}	15	mA

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	
Operating junction temperature range	T_j	-40-150	
Operating temperature range	T_{op}	-40-125	
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	800	V
Average on-state current ($T_c = 121^\circ\text{C}$)	$I_{T(AV)}$	12	A

RMS on-state $I_{T(AV)}$ 5240 T_c 0 T_w 8.04 0 0 8.04 222.96 235.68 T_m (C) T_j E05 T_c 01e f2/MCID 50

Peak gate current ($t_p=20\text{ s}$, $T_j=150\text{ }^\circ\text{C}$)	I_{GM}	5	A
Average gate power dissipation ($T_j=150\text{ }^\circ\text{C}$)	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	20	W
Peak pulse voltage ($T_j=25\text{ }^\circ\text{C}$; non-repetitive,off-state;FIG.7)	V_{pp}	0.5	kV

($T_j=25\text{ }^\circ\text{C}$ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12V\ R_L=33$	-	-	15	mA
V_{GT}		-	-	1	V
V_{GD}	$V_D=V_{DRM}\ T_j=150\text{ }^\circ\text{C}\ R_L=3.3K$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	55	mA
I_H	$I_T=500mA$	-	-	45	mA
dV/dt	$V_D=540V$ Gate Open $T_j=150\text{ }^\circ\text{C}$	600	-	-	V/s
t_{on}	$I_G=20mA\ I_A=200mA\ I_R=20mA$ $T_j=25\text{ }^\circ\text{C}$	-	4	-	s
t_{off}		-	60	-	

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=32A\ t_p=380\text{ s}$	$T_j=25\text{ }^\circ\text{C}$	1.55	V
V_{TO}	Threshold voltage	$T_j=150\text{ }^\circ\text{C}$	0.74	V
R_D	Dynamic resistance	$T_j=150\text{ }^\circ\text{C}$	25	
I_{DRM}	$V_D=V_{DRM}\ V_R=V_{RRM}$	$T_j=25\text{ }^\circ\text{C}$	5	A
I_{RRM}		$T_j=150\text{ }^\circ\text{C}$	0.3	mA

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(DC)	1.1	/W
$R_{th(j-a)}$	junction to ambient (DC)	50	/W

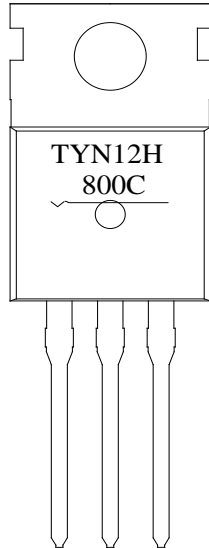
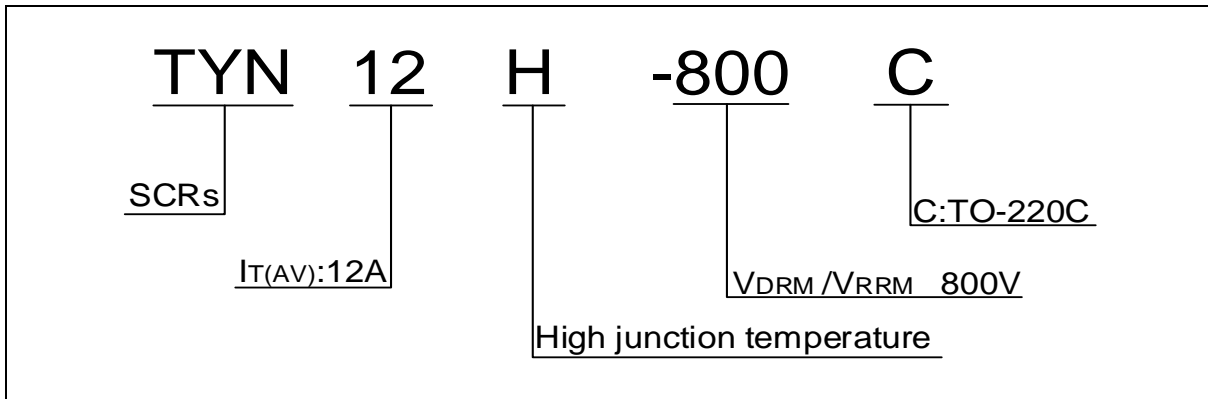


FIG.1 Maximum power dissipation versus RMS on-state current

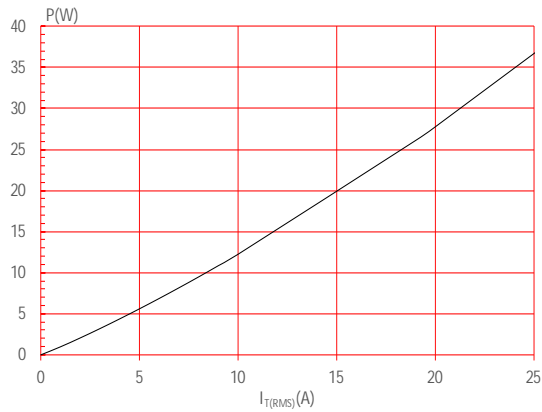


FIG.2: RMS on-state current versus case temperature

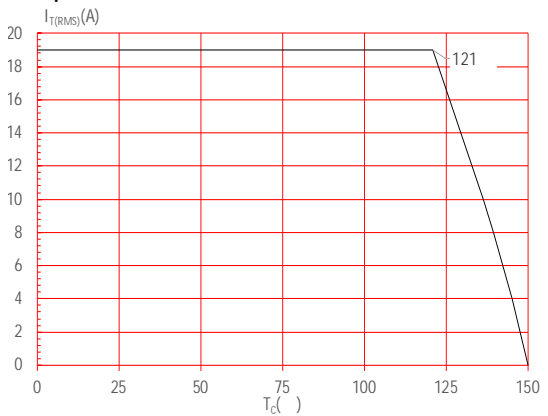


FIG.3: Surge peak on-state current versus number of cycles

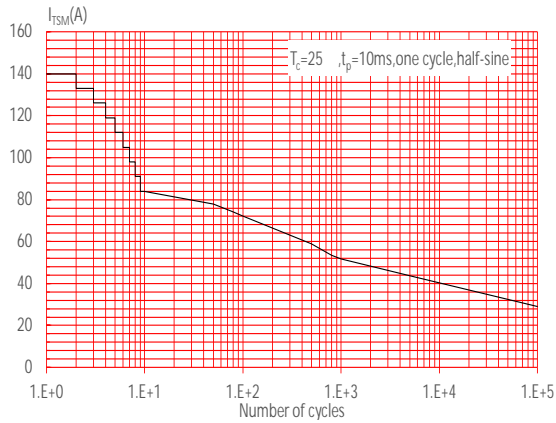


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of I^2t ($di/dt < 15$)

FIG.4: On-state characteristics

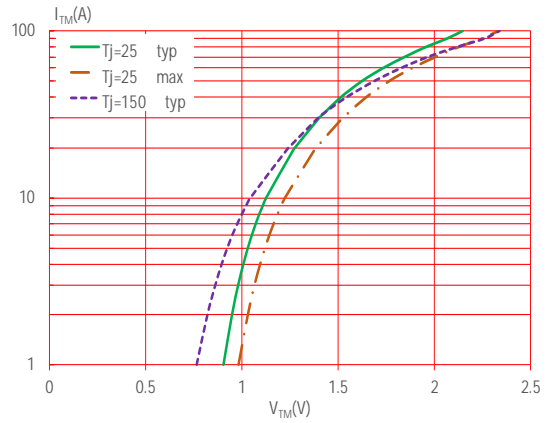
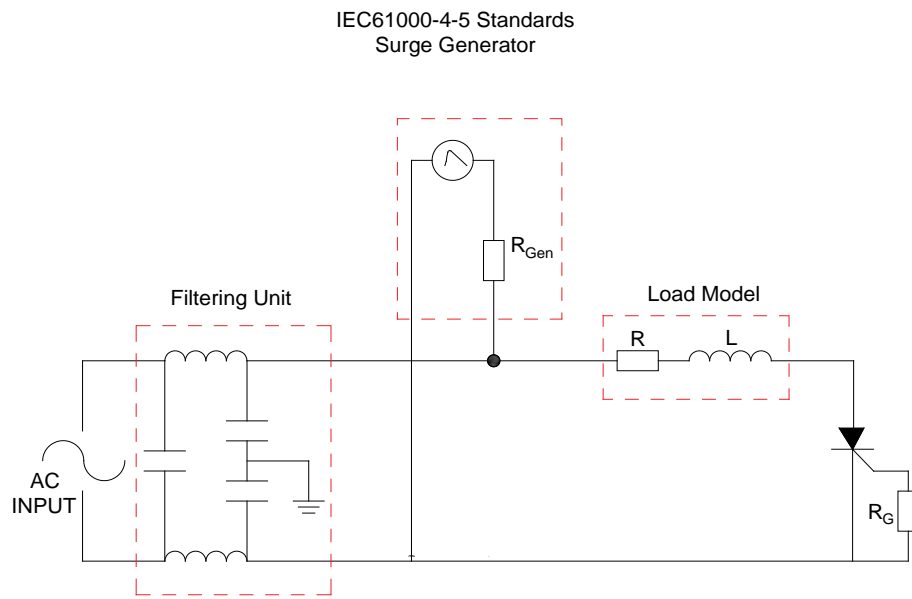



FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



TYN12H-800C

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