

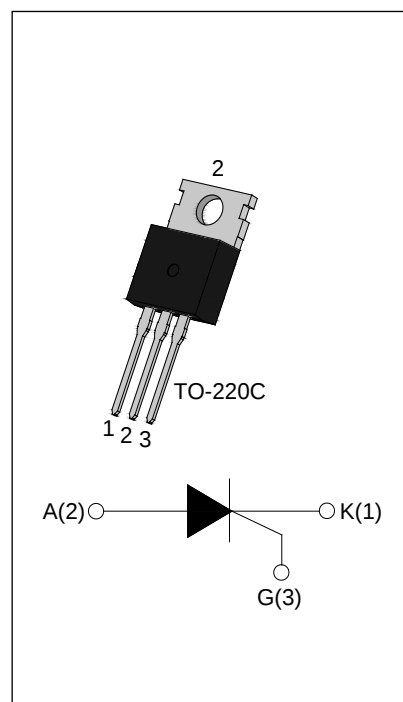


DESCRIPTION:

With high ability to withstand the shock loading of large current, TYN30H-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.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(AV)}$	30	A
V_{DRM}/V_{RRM}	800	V
I_{GT}	≤ 40	mA



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range	T_j	-40-150	$^{\circ}C$
Operating temperature range	T_{op}	-40-125	$^{\circ}C$
Repetitive peak off-state voltage ($T_j=25^{\circ}C$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}	800	V
Average on-state current ($T_c \leq 118^{\circ}C$)	$I_{T(AV)}$	30	A
RMS on-state current ($T_c \leq 118^{\circ}C$)	$I_{T(RMS)}$	47	A
Non repetitive surge peak on-state current ($t_p=10ms$, $T_j=25^{\circ}C$)	I_{TSM}	450	A
Non repetitive surge peak on-state current ($t_p=8.3ms$, $T_j=25^{\circ}C$)		495	
I^2t value for fusing ($t_p=10ms$, $T_j=25^{\circ}C$)	I^2t	1013	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100Hz$, $T_j=150^{\circ}C$)	di/dt	150	$A/\mu s$

Peak gate current ($t_p=20\mu s$, $T_j=150^\circ C$)	I_{GM}	10	A
Average gate power dissipation ($T_j=150^\circ C$)	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	20	W
Peak pulse voltage ($T_j=25^\circ C$; non-repetitive, off-state; FIG.7)	V_{pp}	0.5	kV

ELECTRICAL CHARACTERISTICS ($T_j=25^\circ C$ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12V$ $R_L=33\Omega$	-	-	40	mA
V_{GT}		-	-	1	V
V_{GD}	$V_D=V_{DRM}$ $T_j=150^\circ C$ $R_L=3.3k\Omega$	0.2	-	-	V
I_L	$I_G=1.2I_{GT}$	-	-	80	mA
I_H	$I_T=500mA$	-	-	70	mA
dV/dt	$V_D=540V$ Gate Open $T_j=150^\circ C$	500	-	-	V/ μs
t_{on}	$I_G=40mA$ $I_A=400mA$ $I_R=40mA$ $T_j=25^\circ C$	-	2	-	μs
t_{off}		-	60	-	

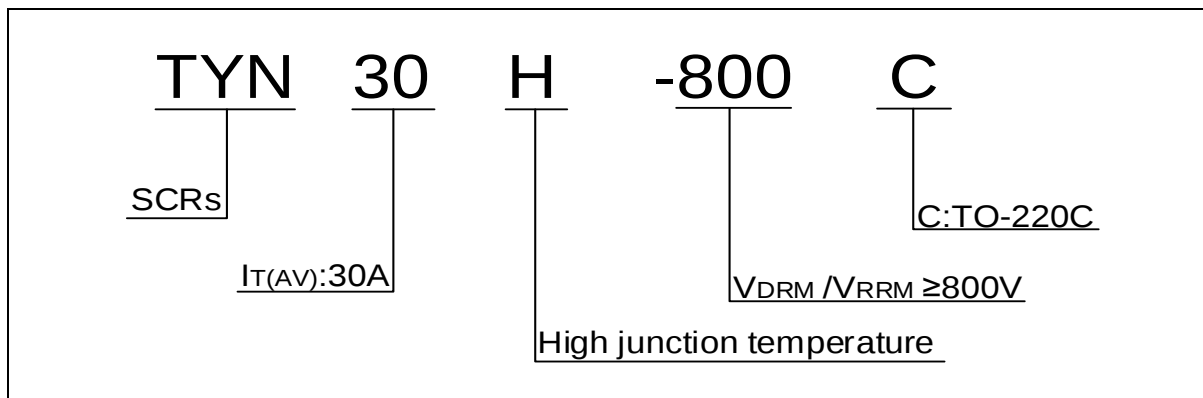
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=80A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.55	V
V_{TO}	Threshold voltage	$T_j=150^\circ C$	0.65	V
R_D	Dynamic resistance	$T_j=150^\circ C$	14	m Ω
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	5	μA
I_{RRM}		$T_j=150^\circ C$	3	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	0.5	$^\circ C/W$
$R_{th(j-a)}$	junction to ambient (DC)	55	$^\circ C/W$

ORDERING INFORMATION



MARKING

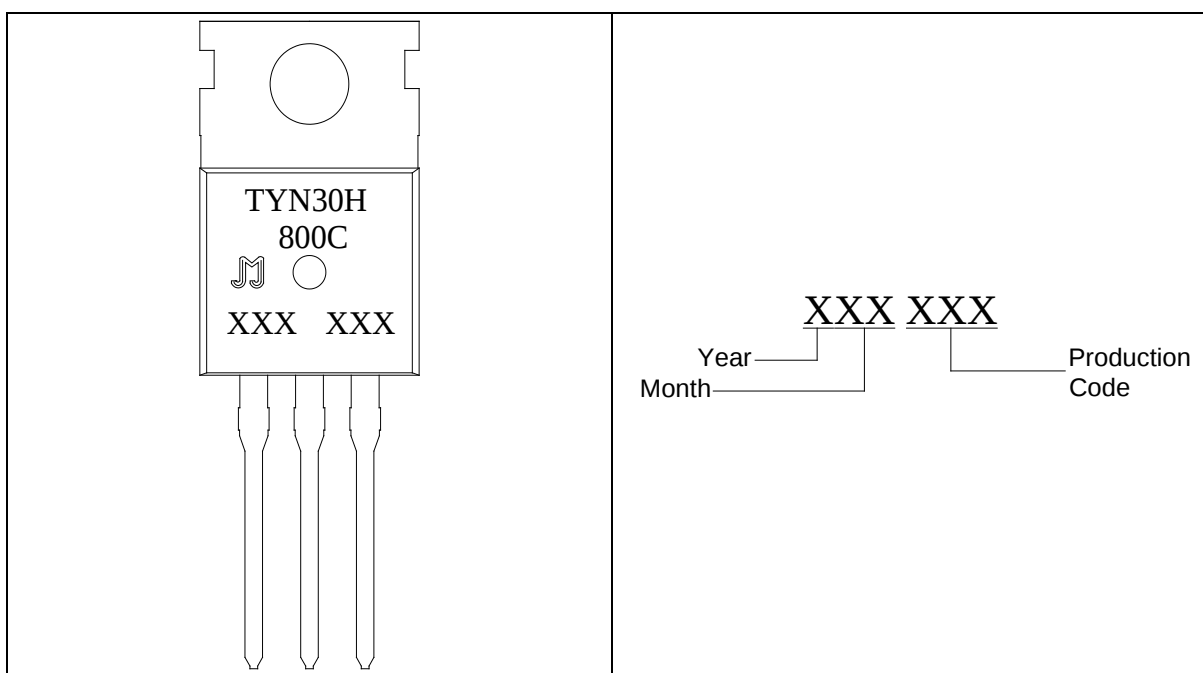


FIG.1: Maximum power dissipation versus RMS on-state current

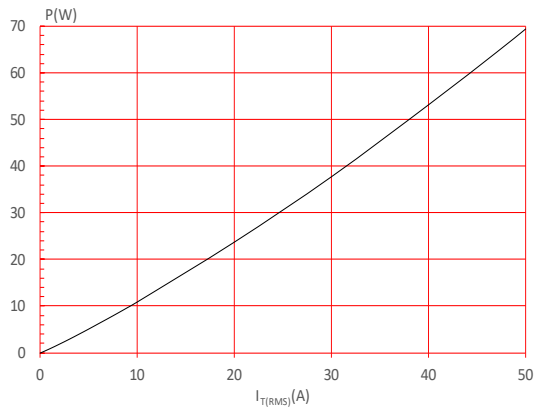


FIG.3: Surge peak on-state current versus number of cycles

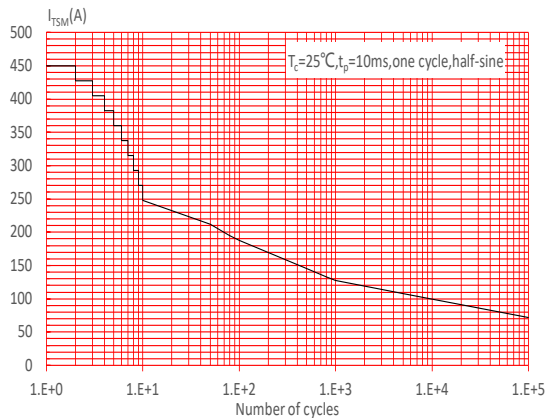


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 150\text{A}/\mu\text{s}$)

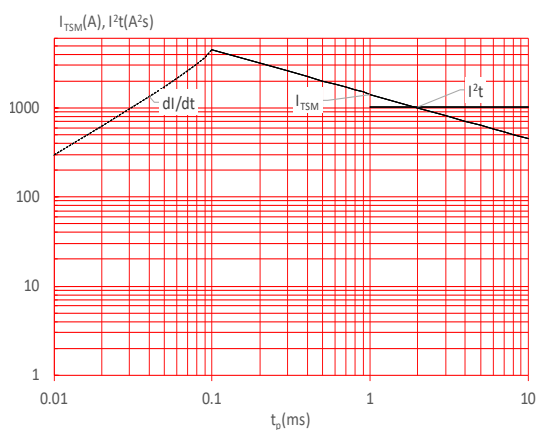


FIG.2: RMS on-state current versus case temperature

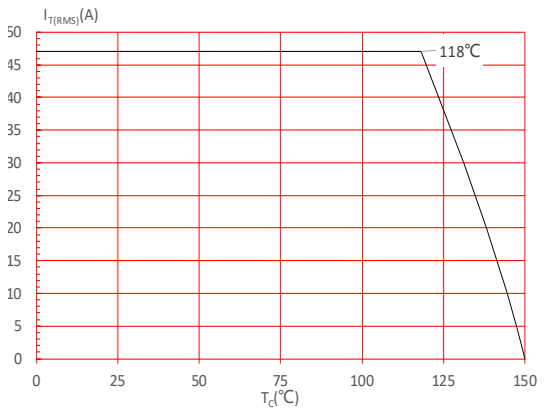


FIG.4: On-state characteristics

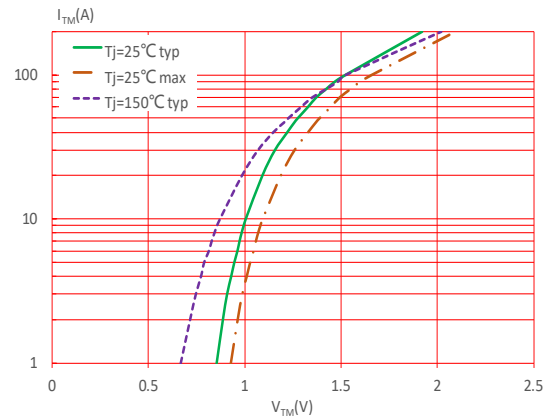


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

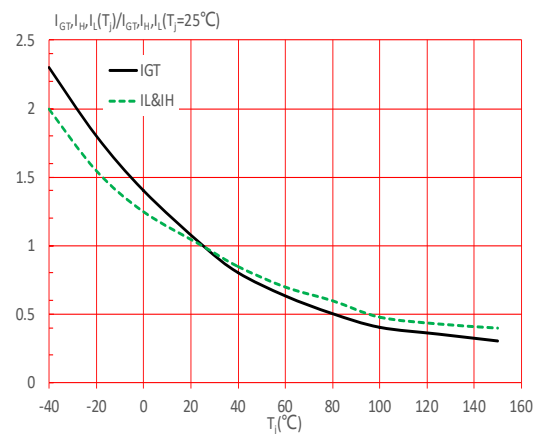
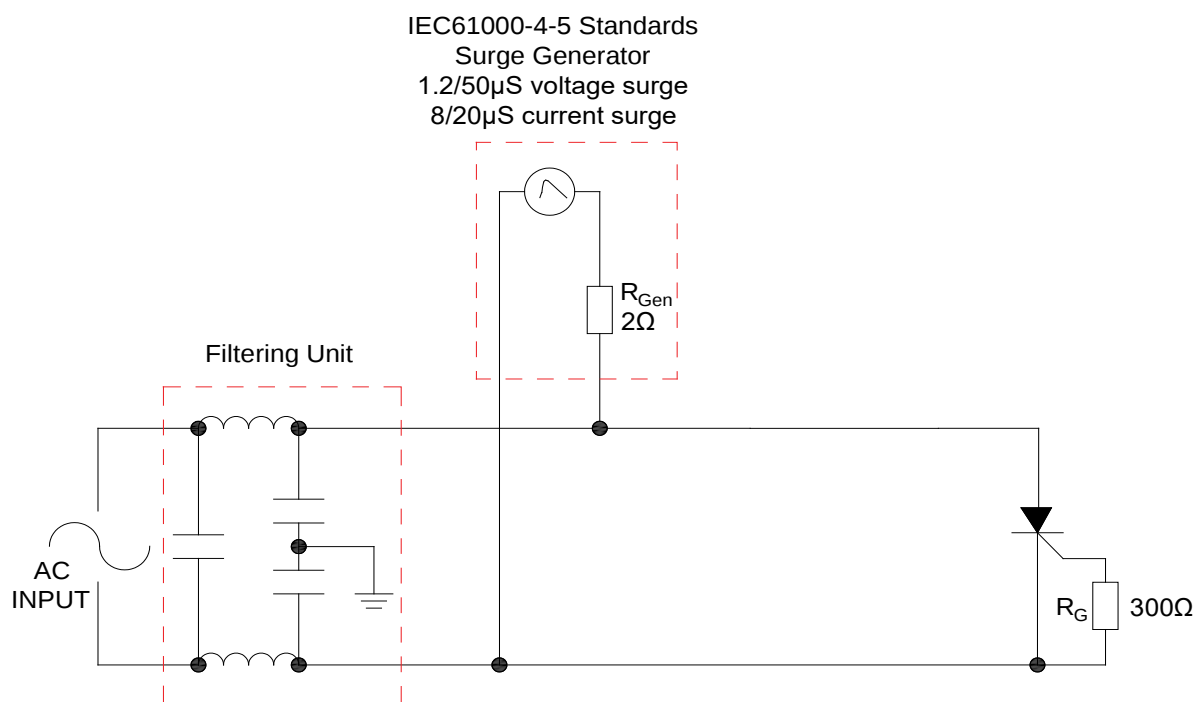


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



LEAD FORMING AND SOLDERING

Refer to the application note "Assembly Instructions for Thyristors in Through-hole Package" released by JieJie Microelectronics

ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
TYN30H-800C	800	40	TO-220C	50	Tube

Document Revision History

Date	Revision	Changes
Apr.13, 2023	A.1.0	Last update
Oct.14, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a 4-pin connector. The drawing includes three views: a top view, a front view, and a side view. The top view shows a rectangular body with a central circular hole and four pins extending downwards. The front view shows the side profile of the connector with dimensions labeled. The side view shows the cross-section of the connector with dimensions labeled. The dimensions are as follows:

- Top View:**
 - $\varnothing 3.45 \pm 0.05 \text{ mm}$ (Central hole diameter)
 - E (Total width)
 - L (Distance from center to pin center)
 - $L3$ (Distance from top edge to pin start)
- Front View:**
 - H (Total height)
 - $L1$ (Pin length)
 - K (Distance from top edge to pin start)
 - $L2$ (Pin length)
 - B (Pin diameter)
 - G (Pin spacing)
 - M (Total pin width)
- Side View:**
 - A (Top flange thickness)
 - $C2$ (Top flange width)
 - E (Total width)
 - D (Main body height)
 - $C3$ (Main body width)
 - C (Pin diameter)

The drawing also includes a detail view of the top flange and a detail view of the main body.

Technical drawing of a 3D printed part, showing top, front, and side views with dimensions in millimeters.

Top View:

- Overall width: 520 ± 0.5
- Overall height: 530 ± 0.5
- Left side features a circular hole and a rectangular feature with three vertical slots.
- Right side features a "printing area" label, a circular hole with diameter $\varnothing 4.5 \pm 0.05$, and a circular hole with diameter $\varnothing 3 \pm 0.05$.
- Dimensions on the right side: 3, 5, 80, 5.5, 5.5.

Front View:

- Overall height: 18
- Left side features a circular hole and a rectangular feature with three vertical slots.
- Right side features a circular hole with diameter $\varnothing 3 \pm 0.05$.
- Dimensions on the right side: 5.5, 5.5.

Side View:

- Overall width: 7 ± 0.2
- Overall height: 33
- Left side features a circular hole and a rectangular feature with three vertical slots.
- Right side features a circular hole with diameter $\varnothing 3 \pm 0.05$.
- Dimensions on the right side: 2.4, 3.8, 3.8, 0.6, 18.

7

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