

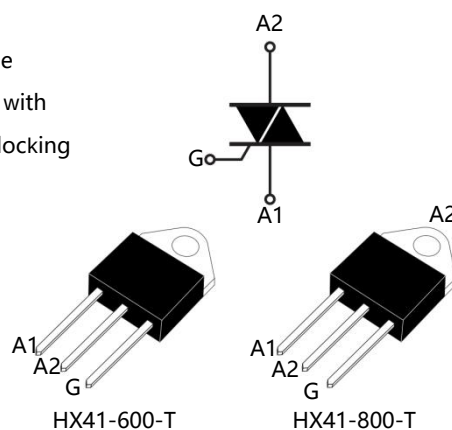
HX41-600-T/HX41-800-T bidirectional thyristor

Trait

The NPNPN five-layer silicon bidirectional device adopts single-side grooving process and countertop glass blunt process, and is equipped with multi-layer metal electrodes on the back. This device offers excellent blocking voltage and temperature stability for high reliability.

Apply

- Vacuum cleaners, power tools and other motor speed control
- Solid-state relay
- Heating controller (temperature control)
- Color light controller
- Other phase controlled circuits



Limit Parameter					
Symbol	Parameter Name			Numerical Value	Unit
I _{T(RMS)}	On-state square root current	HX41-600-T	T _c =80°C	41	A
		HX41-800-T	T _c =90°C		
I _{TSM}	On-state surge current	F=50HZ	t=20ms	410	A
I ² t	The limit value of I ² t	t _p = 10ms		880	A ² S
di/dt	Critical rise rate of on-state current		T _j =125°C	50	A/us
V _{DRM} /V _{RRM}	Off state repetitive peak voltage/ reverse repetitive peak voltage		T _j =25°C	800/1000/1200	V
I _{GM}	Peak gate current	tp=20us	T _j =125°C	8	A
P _{G(AV)}	Average gate dissipated power		T _j =125°C	1	W
T _{stg}	Storage temperature			-40to+150	°C
T _j	Effective junction temperature			-40to+125	

Static Parameters					
Symbol	Name and Testing Conditions			Numerical Value	Unit
V _{TM}	On state peak voltage I _{TM} = 82A	T _j =25°C	MAX	1.50	V
V _{T0}	Threshold voltage	T _j =125°C	MAX	0.86	V
R _d	slope resistance	T _j =125°C	MAX	6.4	mΩ
I _{DRM}	Off state peak current	T _j =25°C	MAX	10	uA
I _{RRM}	Reverse peak current	T _j =125°C		2	mA
R _{th(j-c)}	junction-to-case thermal resistance	HX41-600-T		0.9	°C/W
		HX41-800-T		0.6	

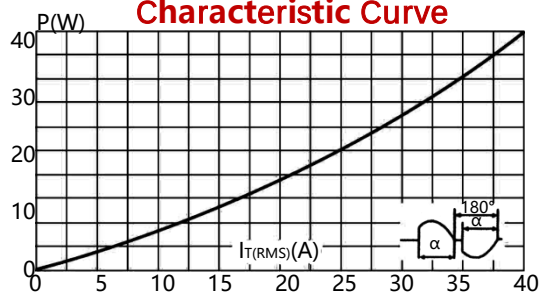
Electrical characteristics (three quadrants)

Symbol	Name and testing conditions	Quadrant		numerical value	Unit
I_{GT}	trigger current $V_D = 12V$ $R_L = 100\Omega$	I II III	MAX	≤ 50	mA
V_{GT}	trigger voltage		MAX	1.5	V
V_{GD}	Do not trigger voltage $T_j = 125^\circ C$		MIN	0.2	V
I_H	holding current $I_T = 0.5A$		MAX	60	mA
I_L	latching current $I_G = 1.2I_{GT}$		MAX	60	mA
				100	
dv/dt	Critical rise rate of off state voltage $V_D = 2/3V_{DRM}$ $T_j = 125^\circ C$		MIN	500	V/us
$(dv/dt)_c$	Critical rise rate of commutation voltage $T_j = 125^\circ C$		MIN	10	V/us

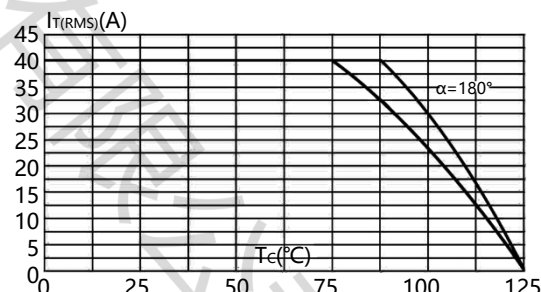
Electrical characteristics (four quadrants)

I_{GT}	trigger current $V_D = 12V$ $R_L = 100\Omega$	I II III	MAX	≤ 50	mA
		IV		≤ 120	
V_{GT}	trigger voltage		MAX	1.5	V
V_{GD}	Do not trigger voltage $T_j = 125^\circ C$		MIN	0.2	V
I_H	holding current $I_T = 0.5A$		MAX	80	mA
I_L	latching current $I_G = 1.2I_{GT}$	I II III	MAX	70	mA
		IV		160	
dv/dt	Critical rise rate of off state voltage $V_D = 2/3V_{DRM}$ $T_j = 125^\circ C$		MIN	500	V/us
$(dv/dt)_c$	Critical rise rate of commutation voltage $T_j = 125^\circ C$		MIN	10	V/us

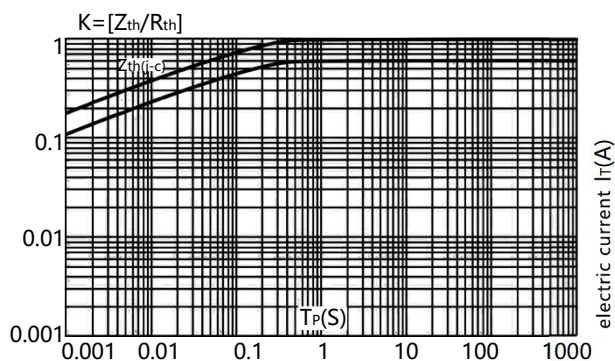
Characteristic Curve



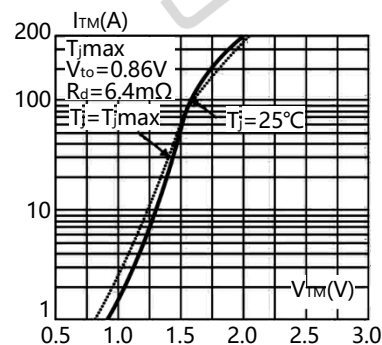
Power consumption and current curve (180°)



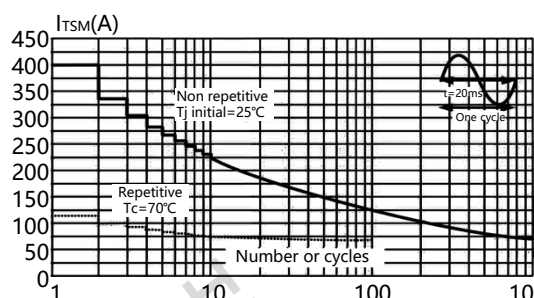
Shell temperature and on state root mean square current curve



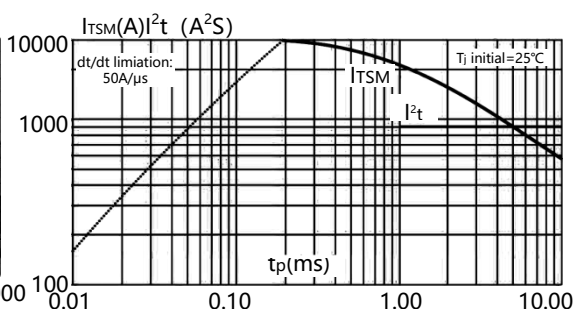
Transient Thermal Resistance Curve



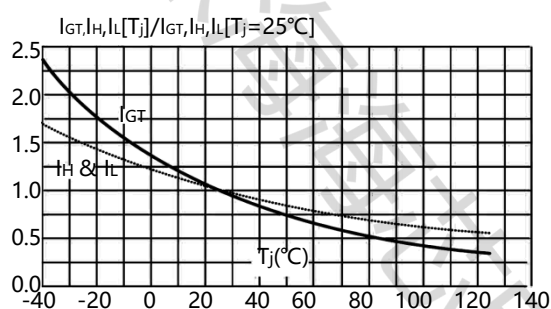
On state volt ampere characteristic curve



Surge current versus frequency curve



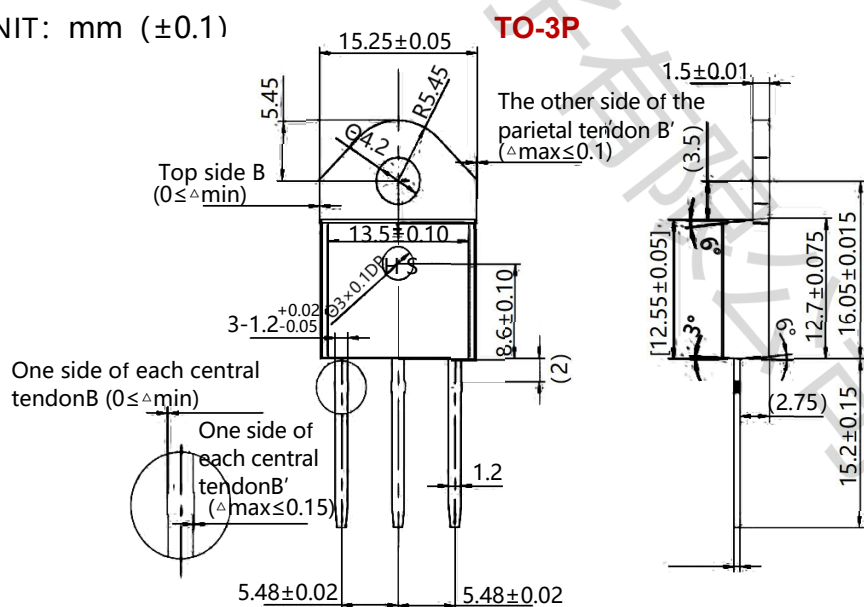
$I_{TSM}-t, I^2t-t$ curve



Gate trigger characteristic curve

Outline dimension diagram

UNIT: mm (± 0.1)



Part Model	Encapsulation	Type	Packaging method	Number
HX41-600-T	TO-3P	Insulation type	Tube Pack	500
HX41-800-T	TO-3P	Non insulated type	Tube Pack	500