

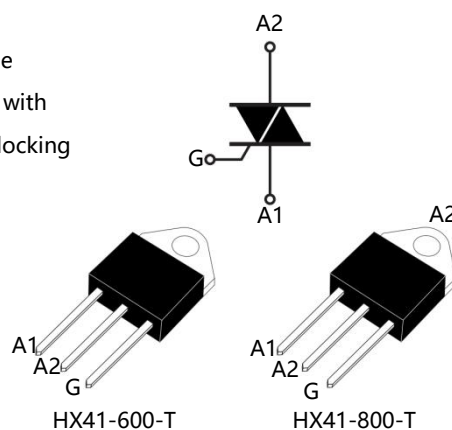
HX41-600-T/HX41-800-T bidirectional thyristor

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

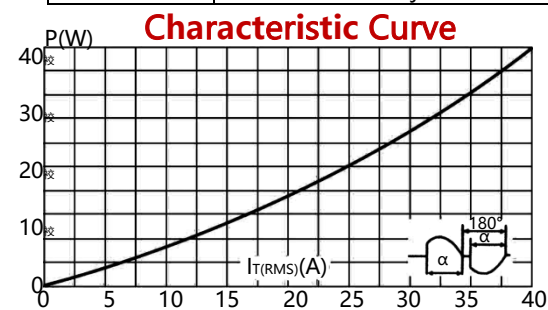
- Vacuum cleaners, power tools and other motor speed control
- Solid-state relay
- Heating controller (temperature control)
- Color light controller
- Other phase controlled circuits



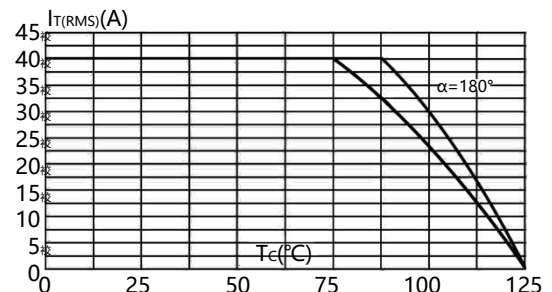
Limit Parameter					
Symbol	Parameter Name			Numerical Value	Unit
$I_{T(RMS)}$	On-state square root current	HX41-600-T	$T_c=80^{\circ}C$	41	A
		HX41-800-T	$T_c=90^{\circ}C$		
I_{TSM}	On-state surge current	F=50HZ	t=20ms	410	A
I^2t	The limit value of I^2t	$t_p=10ms$		880	A^2S
di/dt	Critical rise rate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

Static Parameters					
Symbol	Name and Testing Conditions			Numerical Value	Unit
V_{TM}	On state peak voltage $I_{TM}=82A$	$T_j=25^{\circ}C$	MAX	1.50	V
V_{T0}	Threshold voltage	$T_j=125^{\circ}C$	MAX	0.86	V
R_d	slope resistance	$T_j=125^{\circ}C$	MAX	6.4	m Ω
I_{DRM}	Off state peak current	$T_j=25^{\circ}C$	MAX	10	μA
I_{RRM}	Reverse peak current	$T_j=125^{\circ}C$		2	mA
$R_{th(j-c)}$	junction-to-case thermal resistance	HX41-600-T		0.9	$^{\circ}C/W$
		HX41-800-T		0.6	

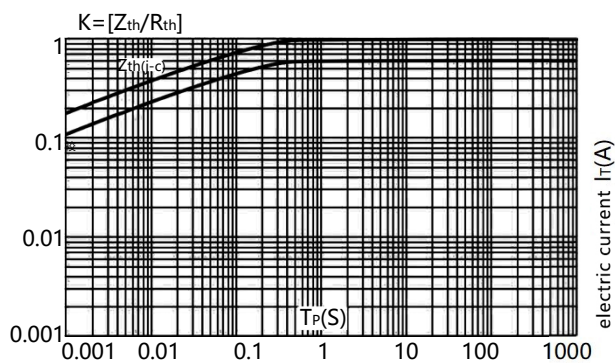
Electrical characteristics (three quadrants)					
Symbol	Name and testing conditions	Quadrant		numerical value	Unit
I_{GT}	trigger current $V_D = 12V$ $R_L = 100\Omega$ trigger voltage	I II III	MAX	≤ 50	mA
V_{GT}			MAX	1.5	V
V_{GD}	Do not trigger voltage $T_j = 125^\circ C$		MIN	0.2	V
I_H	holding current $I_T = 0.5A$		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



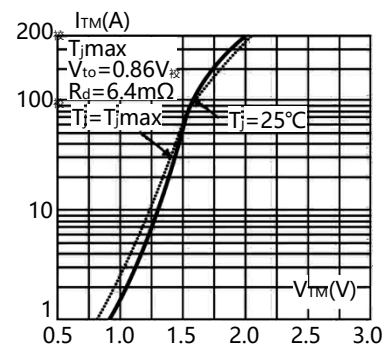
Power consumption and current curve (180 °C)



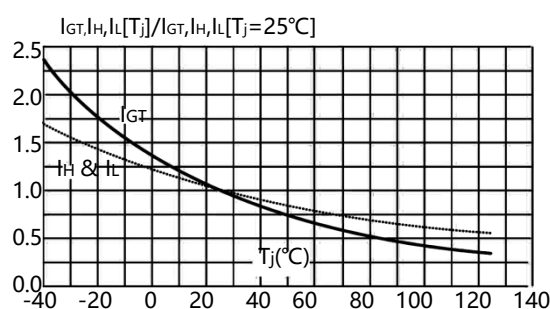
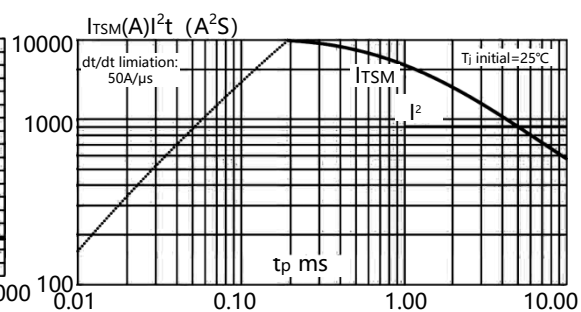
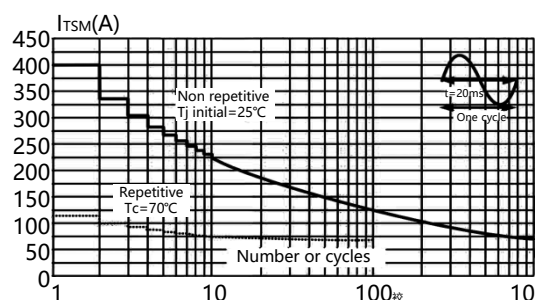
Shell temperature and on state root mean square current curve



Transient Thermal Resistance Curve

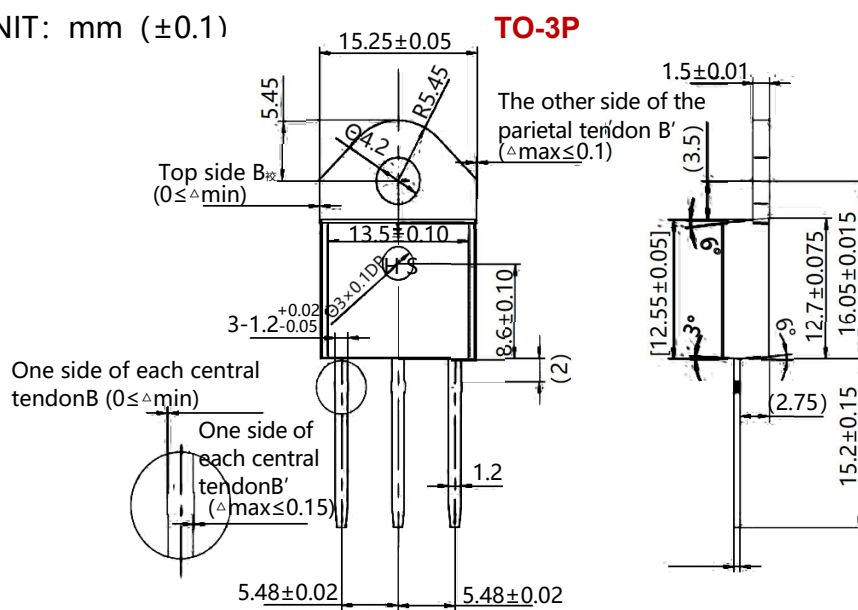


On state volt ampere characteristic curve



Outline dimension diagram

UNIT: mm (± 0.1)



Part Model	Encapsulation	Type	Packaging method	Number
HX41-600-T	TO-3P	Insulation type	Tube Pac 9	500
HX41-800-T	TO-3P	Non insulated type	Tube Pac 9	500