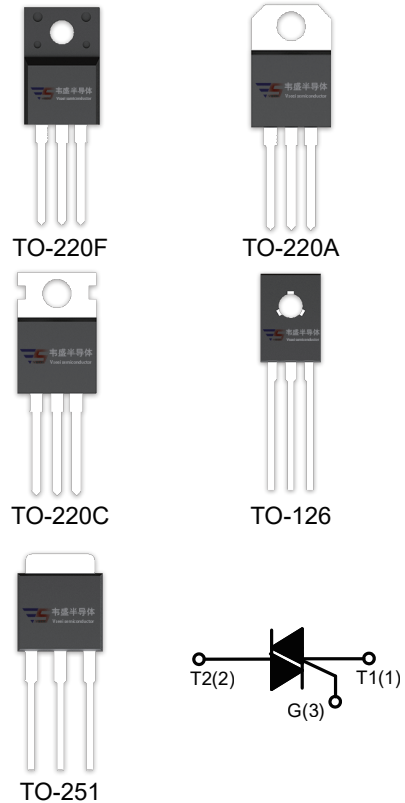


DESCRIPTION:

The T405Q-600H SCR series with the parallel resistor between Gate and Cathode are especially recommended for use on straight hair, igniter, anion generator, etc.


MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600/800	V

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	°C
Operating junction temperature range		T_j	-40-125	°C
Repetitive peak off-state voltage($T_j=25^\circ\text{C}$)		V_{DRM}	600/800	V
Repetitive peak reverse voltage($T_j=25^\circ\text{C}$)		V_{RRM}	600/800	V
Non repetitive surge peak Off-state voltage		V_{DSM}	$V_{DRM} + 100$	V
Non repetitive peak reverse voltage		V_{RSM}	$V_{RRM} + 100$	V
RMS on-state current	TO-251/ TO-220A(Non-Ins) /TO-220C ($T_c=105^\circ\text{C}$)	$I_{T(RMS)}$	4	A
	TO-220A(Ins)/ TO-220F(Ins) ($T_c=100^\circ\text{C}$)			
	TO-202-3/ TO-126/SOT-82 ($T_c=95^\circ\text{C}$)			

Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	35	A
I^2t value for fusing ($t_p=10ms$)	I^2t	6.1	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	I - II -III	50	A/ μs
	IV		
Peak gate current	I_{GM}	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	5	W

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

Symbol	Test Condition	Quadrant		Value				Unit
				T	D	E	F	
I_{GT}	$V_D=12V$	I - II -III	MAX	5	5	10	25	mA
		IV		5	10	25	70	
V_{GT}		ALL	MAX	1.3				V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ C$ $R_L=3.3K\Omega$	ALL	MIN	0.2				V
I_L	$I_G=1.2I_{GT}$	I -III	MAX	10	20	30	40	mA
		II -IV		15	35	45	60	
I_H	$I_T=100mA$		MAX	5	15	25	30	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ C$		MIN	20	50	100	150	V/ μs
(dV/dt) _c	(dI/dt) _c =1.7A/ms $T_j=125^\circ C$		MIN	0.1	0.1	0.5	5	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=5.5A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.6	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	5	μA
I_{RRM}		$T_j=125^\circ C$	0.5	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251	2.8	°C/W
		TO-220A(Ins)	3.5	
		TO-220A(Non-Ins)/ TO-220C	2.5	
		TO-220F(Ins)	3.3	
		TO-126/SOT-82	3.7	
		TO-202-3	3.9	

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

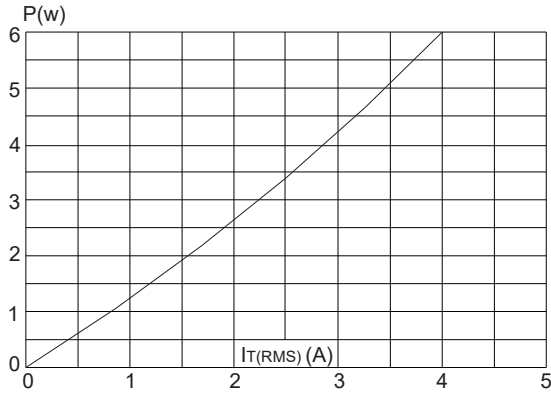


FIG.2: RMS on-state current versus case temperature

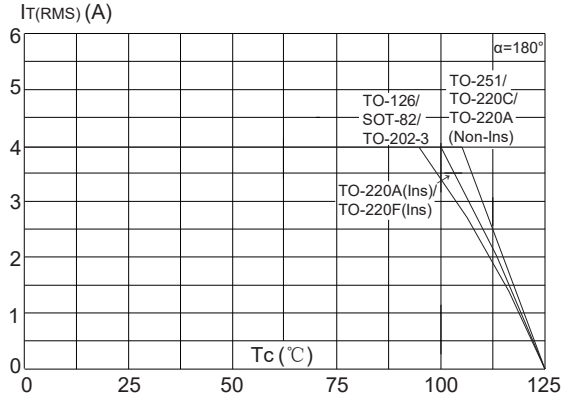


FIG.3: Surge peak on-state current versus number of cycles

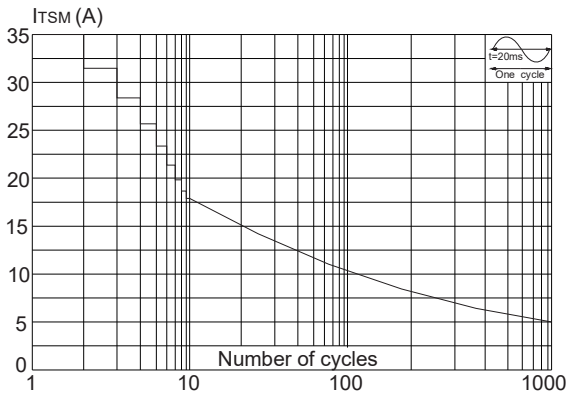


FIG.4: On-state characteristics (maximum values)

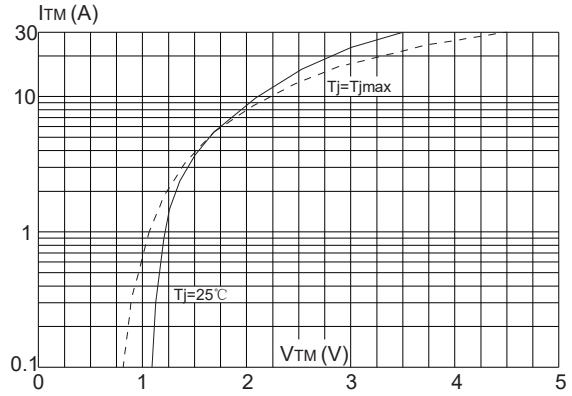


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t (I - II -III: $di/dt < 50\text{A}/\mu\text{s}$; IV: $di/dt < 10\text{A}/\mu\text{s}$)

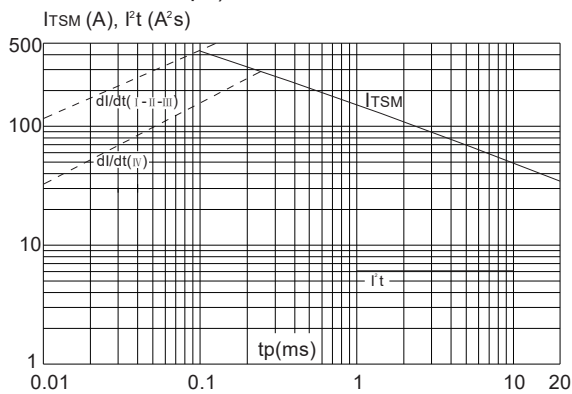


FIG.6: Relative variations of gate trigger current versus junction temperature

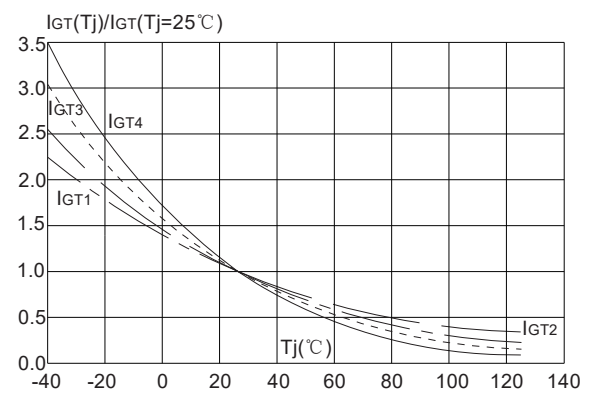


FIG.7: Relative variations of holding current versus junction temperature

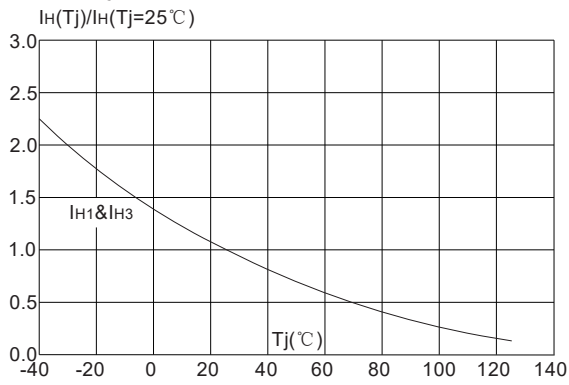


FIG.8: Relative variations of latching current versus junction temperature

