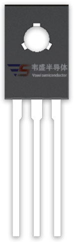
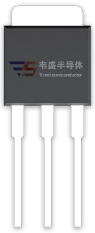
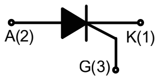
DESCRIPTION:

The TS420-600H SCR provides high dv/dt rate with strong resistance to electromagnetic interface. They are especially recommended for use on residual current circuit breaker, straight hair, igniter etc.


TO-126


TO-220A


TO-251



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
I_{GT}	≤200	μA

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40 - 150	℃
Operating junction temperature range		T_j	-40 - 125①	℃
Repetitive peak off-state voltage		V_{DRM}	600	V
Repetitive peak reverse voltage		V_{RRM}	600	V
RMS on-state current	TO-126/ TO-202-3 (T_C=85℃)	$I_{T(RMS)}$	4	A
	TO-251 (T_C=90℃)			
	TO-220A(Non-Ins) (T_C=105℃)			
Non repetitive surge peak on-state current (tp=10ms)		I_{TSM}	30	A
I^2t value for fusing (tp=10ms)		I^2t	4.5	A^2s
Critical rate of rise of on-state current		dI/dt	50	A/μs
Peak gate current (tp=20μs, T_j=125℃)		I_{GM}	1.2	A
Peak gate power (tp=20μs, T_j=125℃)		P_{GM}	2	W
Average gate power dissipation(T_j=125℃)		$P_{G(AV)}$	0.2	W

NOTE 1: When we parallel connect a ≤1KΩ resistor between Gate and Cathode, the Tj can reach 125℃; if without this resistor, the Tj only can reach 110℃.

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	V_D=12V R_L=33Ω	-	50	200	μA
V_{GT}		-	0.6	0.8	V
V_{GD}	V_D=V_{DRM} T_j=125℃	0.2	-	-	V
I_L	I_G=1.2 I_{GT}	-	-	6	mA
I_H	I_T=0.05A	-	-	5	mA
dV/dt	V_D=2/3V_{DRM} T_j=125℃ R_{GK}=1KΩ	10	-	-	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_T=8A tp=380μs	T_j=25℃	1.5	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	5	μA
I_{RRM}		T_j=125℃	100	μA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case	TO-126	7.2	℃/W
		TO-251	6.5	
		TO-220A(Non-Ins) 3.0		
		TO-202-3	7.6	

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

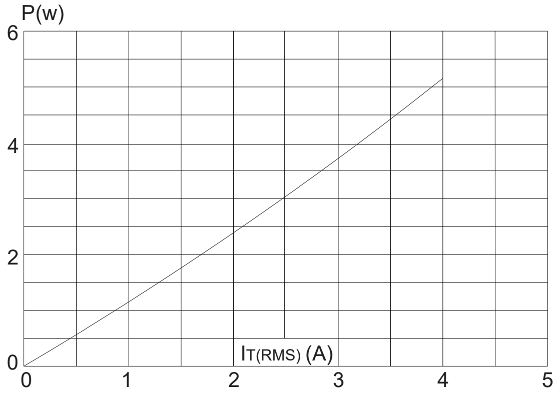


FIG.2: RMS on-state current versus case temperature

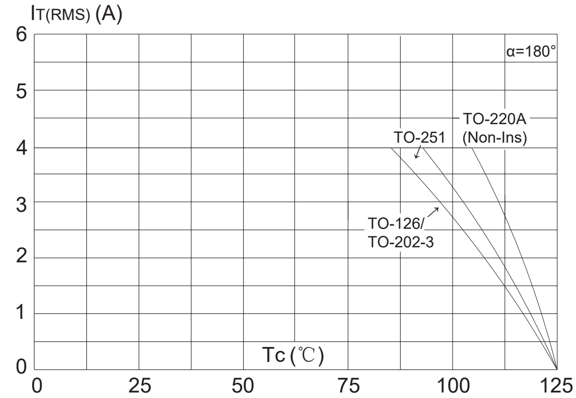


FIG.3: Surge peak on-state current versus number of cycles

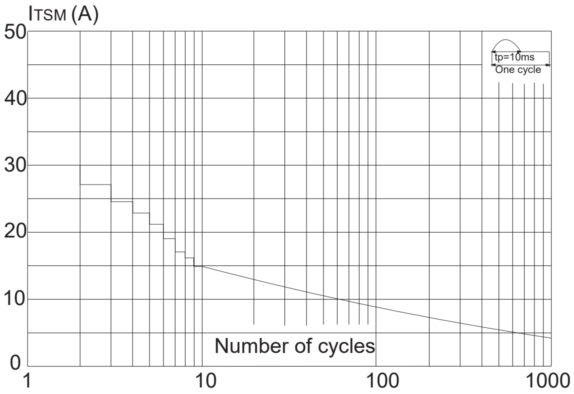


FIG.4: On-state characteristics (maximum values)

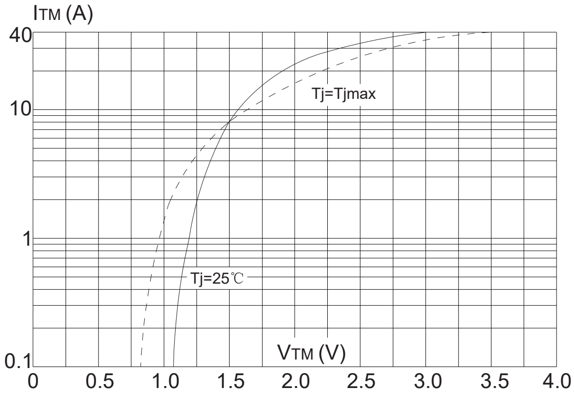


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I^2t (dI/dt < 50A/μs)

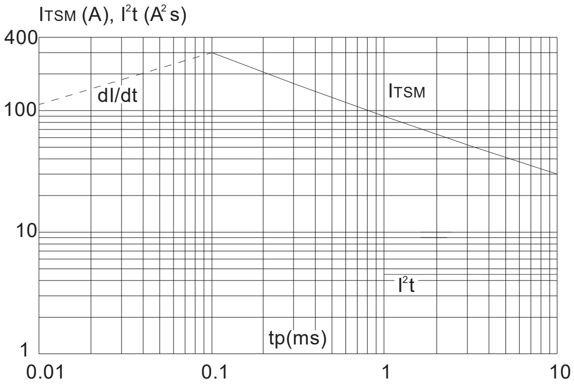


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature