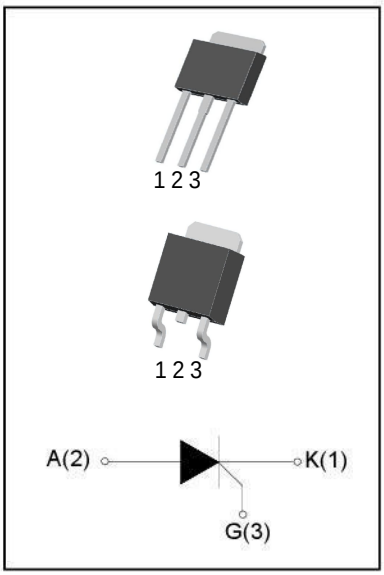
DESCRIPTION:

0405 TO-251/252

The HS0405 SCR series provide high dv/dt rate with strong resistance to electromagnetic interface. They are especially recommended for use on straight hair, igniter etc.



MAIN FEATURES

Symbol	Value	Unit
V_{DRM}/ V_{RRM}	600	V
$I_{T(RMS)}$	4	A
I_{GT}	≤ 60	μA

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40 - 150	℃
Operating junction temperature range		T_j	-40 - 110	℃
Repetitive peak off-state voltage		V_{DRM}	600	V
Repetitive peak reverse voltage		V_{RRM}	600	V
RMS on-state current	TO-126 (T_C=85℃)	$I_{T(RMS)}$	4	A
	TO-251 TO-252			
	TO-220B (T_C=97℃)			
	TO-202 (T_C=80℃)			
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=110℃)		I_{GM}	1.2	A
Peak gate power (tp=20μs, T_j=110℃)		P_{GM}	2	W
Average gate power dissipation(T_j=110℃)		$P_{G(AV)}$	0.2	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	V_D=12V R_L=33Ω	-	30	60	μA
V_{GT}		-	0.6	0.8	V
V_{GD}	V_D=V_{DRM} T_j=110℃	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=110℃ 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=110℃	100	μA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case	TO-126	7.2	℃/W
		TO-251 TO-252	6.5	
		TO-220B	3.0	
		TO-202	7.6	

Fig. 2-2: Average and D.C. on-state current versus ambient temperature (device mounted on FR4 with recommended pad layout).

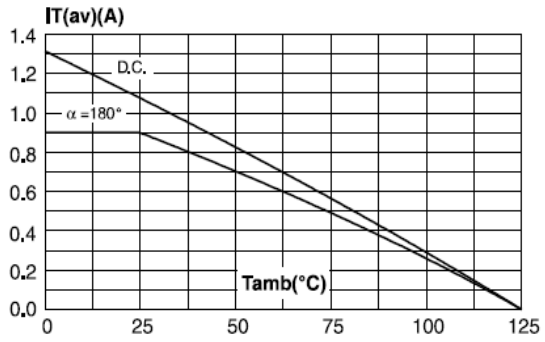


Fig. 3: Relative variation of thermal impedance junction to ambient versus pulse duration.

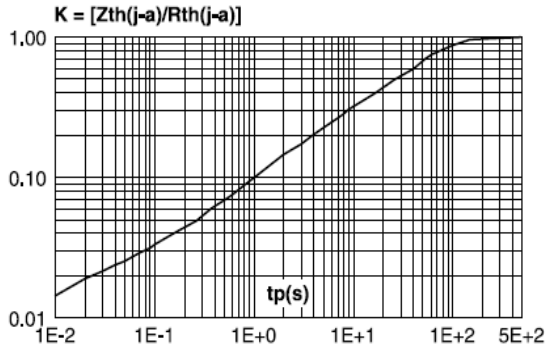


Fig. 4: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

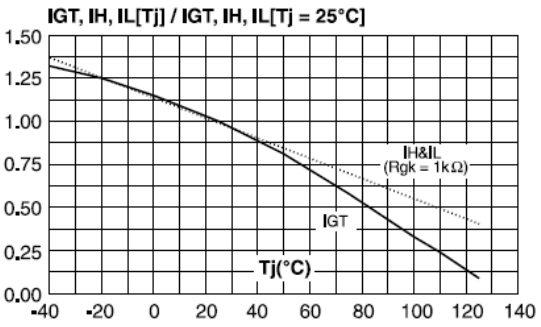


Fig. 5: Relative variation of holding current versus gate-cathode resistance (typical values).

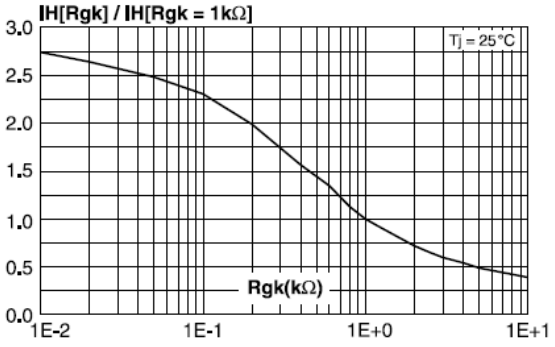


Fig. 6: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).

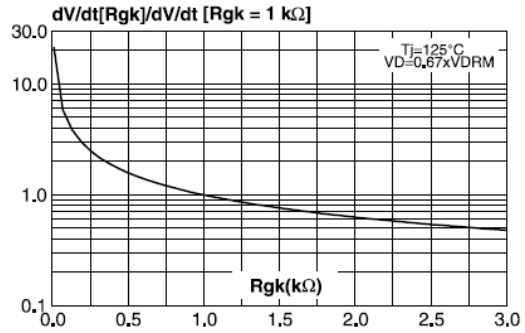


Fig. 7: Relative variation of dV/dt immunity versus gate-cathode capacitance (typical values).