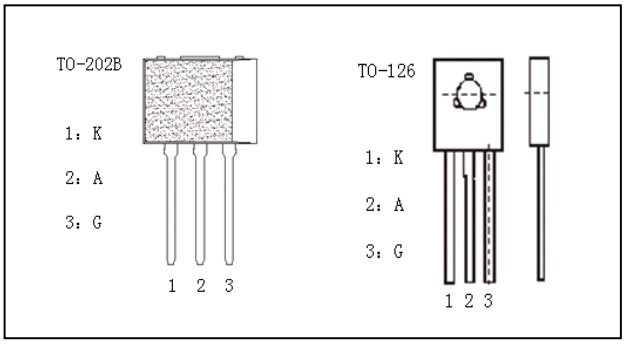
Silicon Controlled Rectifiers—TSE 0405

Applications

Designed primarily application for motorcycle ignition ,it's also widely used for switching control circuit, small motor controller, lamp controller, leakage current detection, logic circuit driver, lamps and lanterns relay stimulus, larger power SCR driver, and others.



Features

- Low forward voltage drop
- High peak repetitive off-state voltage
- High sensitivity of triggering
- High reliability
- Package：TO-126　TO-202B

Absolute rating (Ta=25℃)

Parameter	Symbol	Ratings	Unit
Peak Repetitive Off-State Voltage	V_{DRM}	600	V
Peak Repetitive Reverse Voltage	V_{RRM}	600	V
On-State Average Current	$I_{T(AV)}$	5	A
RMS On-State Current	$I_{T(RMS)}$	8	A
Non-repetitive Peak on-state Surge Current	I_{TSM}	50	A
Junction temperature	T_J	125	℃
Storage temperature	Tstg	-40～125	℃

Electrical characteristic（Ta=25℃）

Parameter	Symbol	Unit	Criterion			Test conditions
			Min	Typ	Max	
Peak Repetitive Off-State Voltage	V_{DRM}	V	450	600		I_T=0.1mA

Peak Repetitive Reverse Voltage	V_{RRM}	V	450	600		I_R=0.1mA
Peak Repetitive Off-State current	I_{DRM}	μA			10	V_{DRM}=600V
Peak On-State Voltage	V_{TM}	V		1.3	1.7	I_T=8A
Holding current	I_H	mA		0.3	6	V_D=12V，I_{GT}=0.1A
Latching current	I_L	mA		0.4	10	V_D=12V，I_{GT}=0.1A
Gate trigger current ※	I_{GT}	μA	10	30	100	V_D=6V，R_L=100Ω
Gate trigger voltage	V_{GT}	V			1.2	V_D=6V，R_L=100Ω
Peak gate current	I_{GM}	A			1	
Peak gate voltage	V_{GM}	V			5	
Peak reverse gate voltage	V_{RGM}	V			5	
Critical Rate of Rise of Off-State Voltage	dV_D/dt	V/μs	50	100		V_{DM}=67%V_{DRM}，Tj=125℃，R_L=100Ω
Critical Rate of Rise of On-State Current	dI_T/dt	A/μs			50	I_T=10A，I_{GT}=50mA，dI_{GT}=50mA/μs
Gate Non-Trigger Current	V_{GD}	V	0.2			V_{DRM}=400V，R_{GR}=1KΩ，T_j=125℃

※：The parameter is related to the operating ambient temperature

Thermal performance

Parameter	Symbol	Condition	Value	Unit
Thermal resistance junction to mounting base	Rthj-mb	Normal state	2.0	℃/W
Thermal resistance junction to ambient	Rthj-a		90	℃/W

Characteristic curve

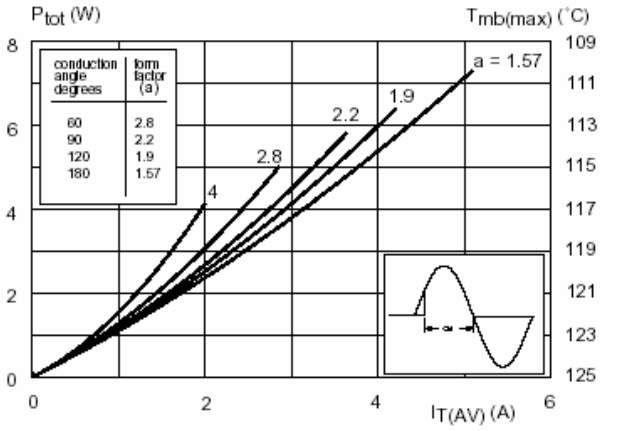


Figure1: on-state dissipation VS I_T

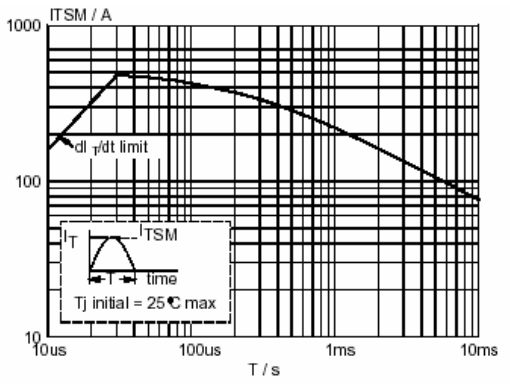


Figure2：I_{TSM} VS pulse width

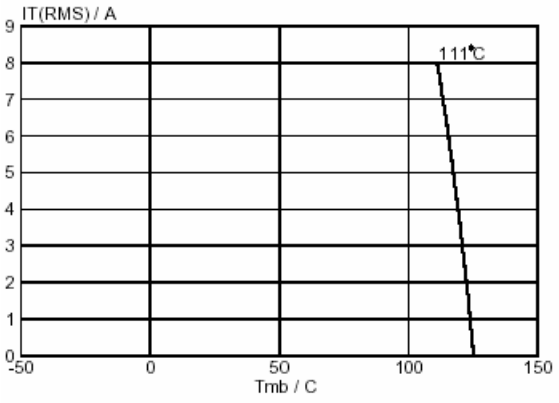


Figure3：I_T VS temperature

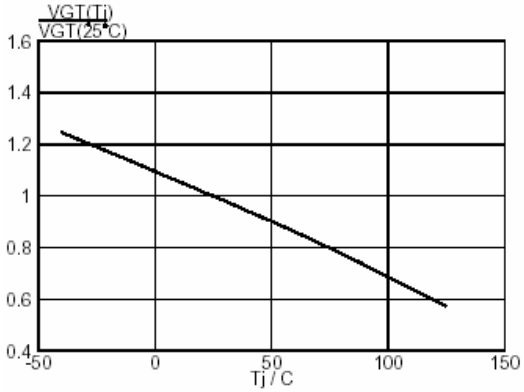


Figure4：V_{GT} VS junction temperature

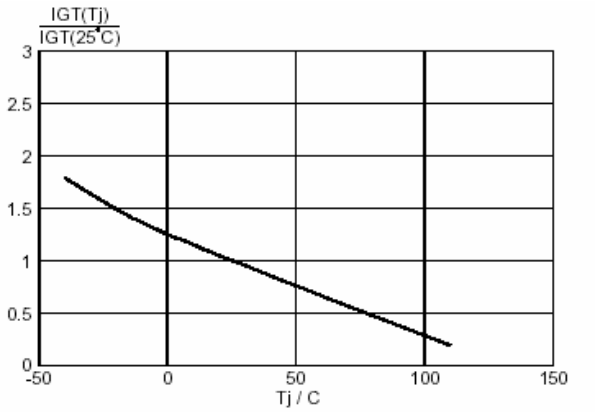


Figure5：I_{GT} VS Tj

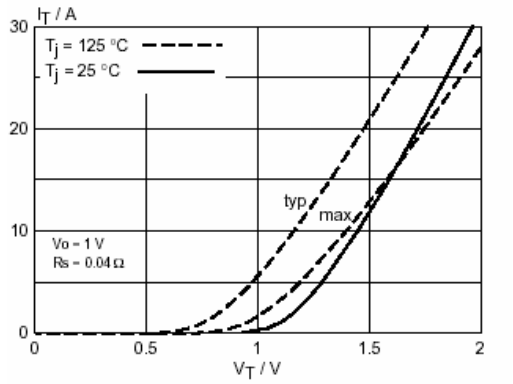


Figure6： I_T VS V_{TM}

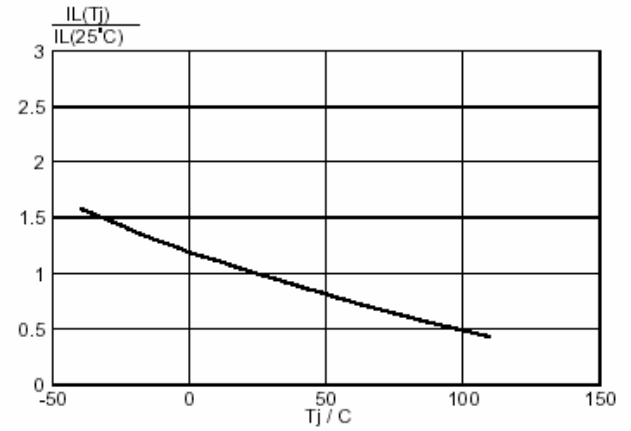


Figure7：I_LVS Tj

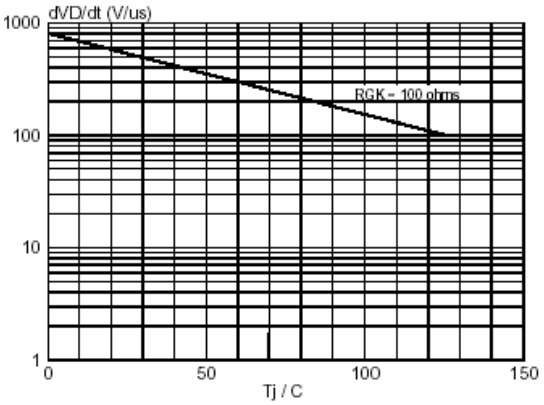


Figure8：dV_D/dtVS Tj

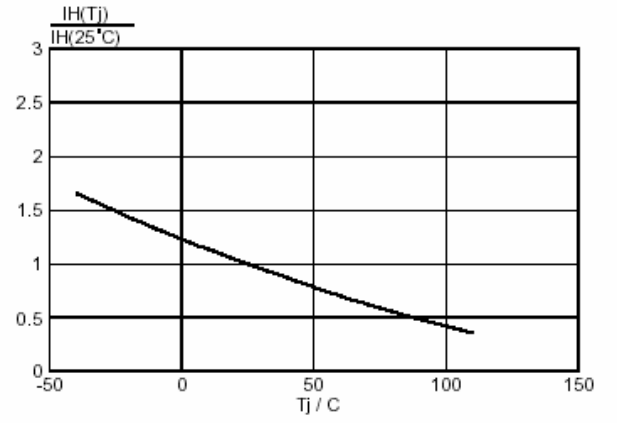


Figure9：I_H VS Tj

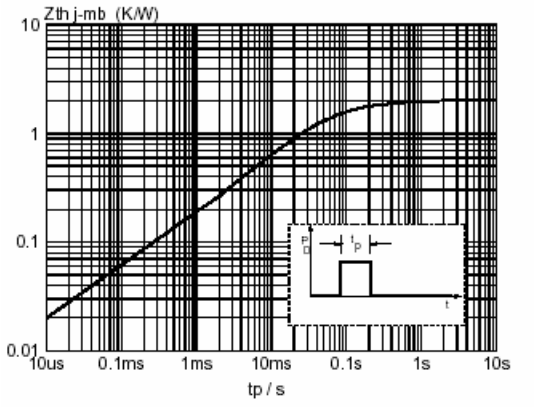


Figure10：Thermal impedance Vs pulse width