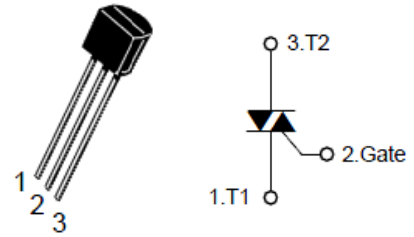


600V, 1A LOGIC LEVEL TRIAC

This device is suitable for low power AC switching application, phase control application such as fan speed and temperature modulation control, lighting control and static switching relay.


TO-92

Features

- Repetitive Peak Off-State Voltage : $V_{DRM}=600V$
- R.M.S On-State Current : $I_{T(RMS)}=1A$
- Sensitive gate in all quadrants
- High (dV/dt)s: 100V/ μS (Min)

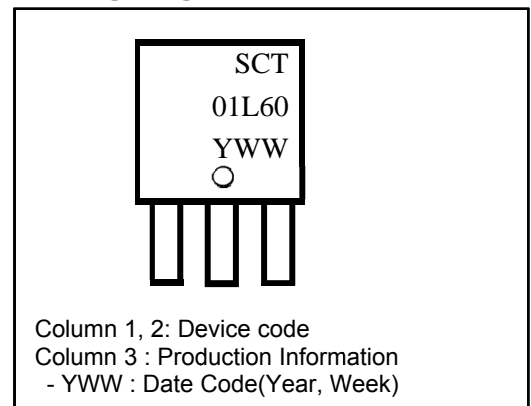
Applications

- Switching mode power supply, light dimmer
- TV sets, stereo, refrigerator, washing machine
- Electric blanket, solenoid driver, small motor control
- Photo copier, electric tool

Product Characteristics

Symbol	Rating
$I_{T(RMS)}$	1A
V_{DRM}	600V

Marking Diagram



Ordering Information

Device	Marking Code	Package	Packaging
SCT01L60	SCT01L60	TO-92	Tape

Absolute Maximum Ratings (Limiting Values)

Characteristic	Symbol	Value	Unit
Repetitive Peak Off-state Voltage	V_{DRM}	600	V
RMS on-state current (full sine wave)	$I_{T(RMS)}$	1	A
Non- repetitive surge peak on-state current (full cycle, T_j initial = 25°C)	I_{TSM}	17.6	A
I^2t Value for fusing ($t_p=10ms$)	I^2t	1.28	A ² s
Peak gate current	I_{GM}	4	A
Peak gate power dissipation	P_{GM}	5	W
Average gate peak dissipation	$P_{G(AV)}$	0.5	W
Storage temperature range	T_{stg}	-40 to +150	°C
Operating junction temperature range	T_j	-40 to +125	°C

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum thermal resistance junction to lead (AC)	$R_{th(j-l)}$	60	$^{\circ}C/W$
Maximum thermal resistance junction to ambient (AC)	$R_{th(j-a)}$	150	$^{\circ}C/W$

Electrical Characteristics ($T_J=25^{\circ}C$, unless otherwise specified)

Off Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Repetitive peak Off-state current	I_{DRM}	$V_D = V_{DRM}$	-	-	10	μA
Repetitive peak reverse current	I_{RRM}	$V_R = V_{RRM}$	-	-	10	μA

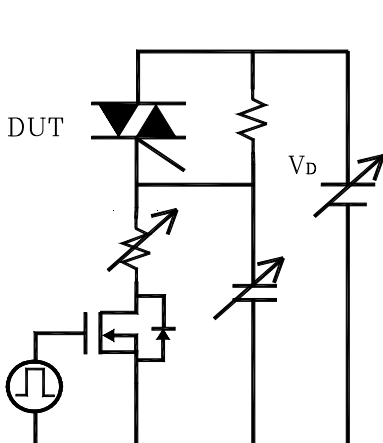
On Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Peak On-state voltage	V_{TM}	$I_T = 2A$	-	-	1.5	V
Holding current	I_H	$V_D = 12V, I_T = 0.1A$	-	-	5	mA
Gate trigger current	$I_{GT} (I - II - III)$	$V_D = 12V, R_L = 100\Omega$	-	-	4	mA
	$I_{GT} (IV)$	$V_D = 12V, R_L = 100\Omega$	-	-	9	mA
Gate trigger voltage	$V_{GT} (I - II - III)$	$V_D = 12V, R_L = 100\Omega$	-	-	1.3	V
Gate Non-trigger voltage	V_{GD}	$V_D = 2/3 V_{DRM}, T_J=125^{\circ}C$	0.2	-	-	V

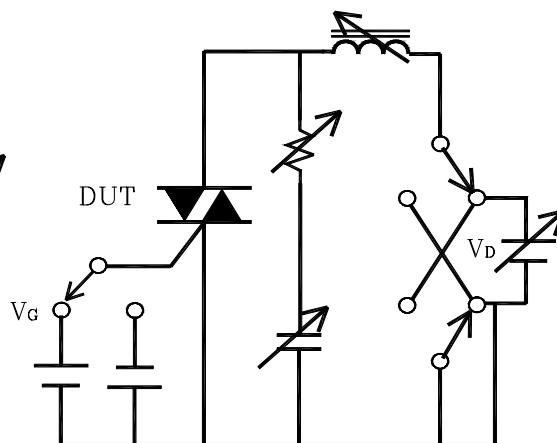
Dynamic Characteristics

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Critical rate of rise of Off-state Voltage	$(dV/dt)_S$	$V_D = 2/3 V_{DRM}, T_J=125^{\circ}C$	100	-	-	V/ μS
Rate of Change of Commutation Current	$(dI/dt)_C$	$(dV/dt)_C=0.5V/\mu s \downarrow, T_J=125^{\circ}C$	1.0	-	-	A/ms
Critical rate of rise of on-state current	dI/dt	$f=120Hz, I_G = 2 \times I_{GT}, t_r \leq 100 ns, T_J=125^{\circ}C$	-	-	20	A/ μS

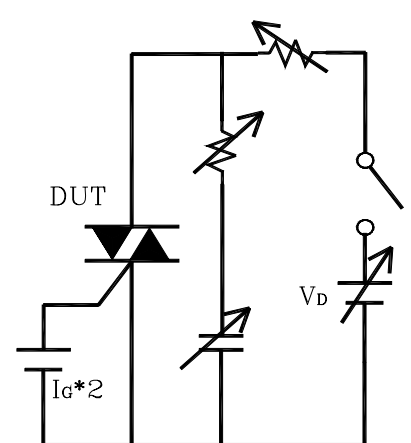
Simple circuit for $(dV/dt)_S$



Simple circuit for $(dI/dt)_C$ vs $(dV/dt)_C$



Simple circuit for dI/dt



Electrical Characteristic Curves

Fig. 1 P - I_{T(RMS)}

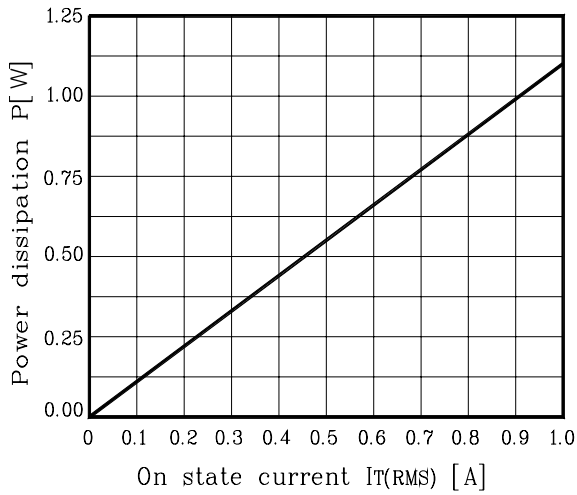


Fig. 2 I_{T(RMS)} - T_C

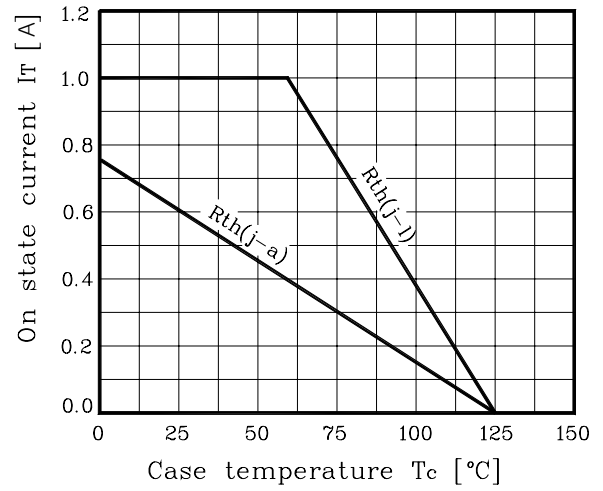


Fig. 3 I_T - V_T

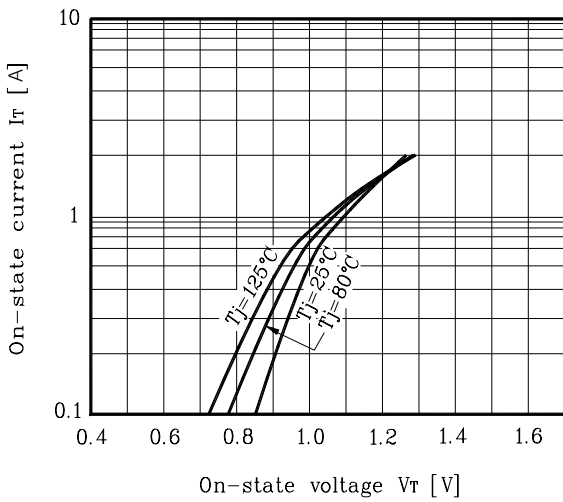


Fig. 4 (di/dt)_c - (dV/dt)_c

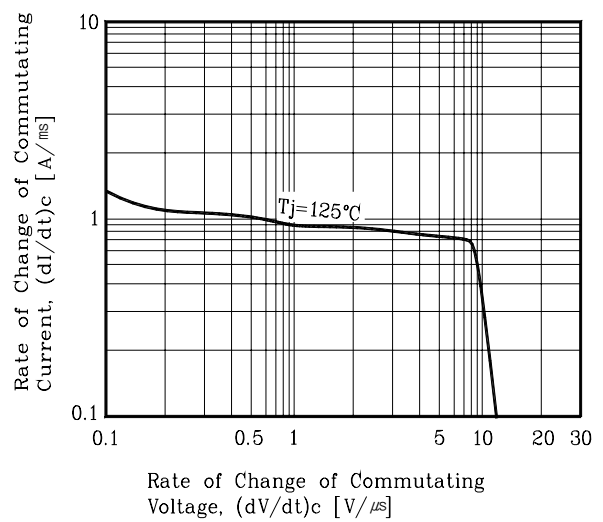


Fig. 5 I_{GT} - T_j

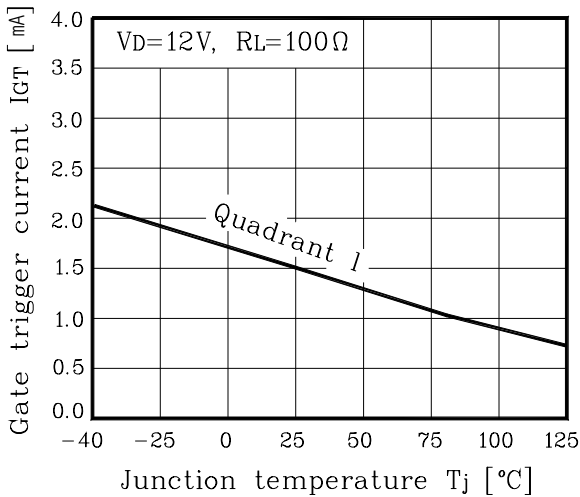
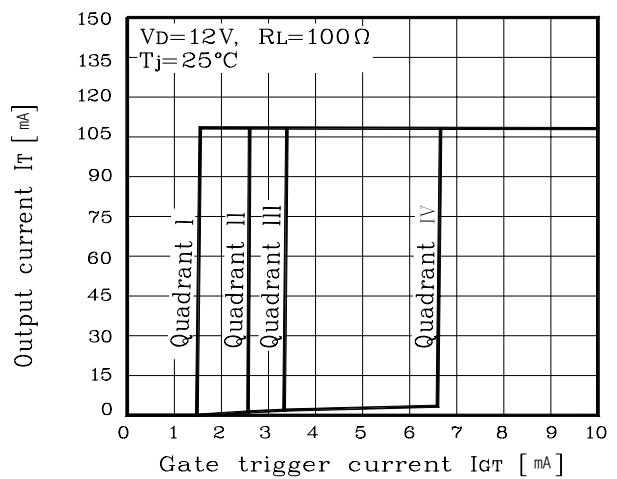


Fig. 6 I_T - I_{GT}



Electrical Characteristic Curves

Fig. 7 $V_{GT} - T_j$

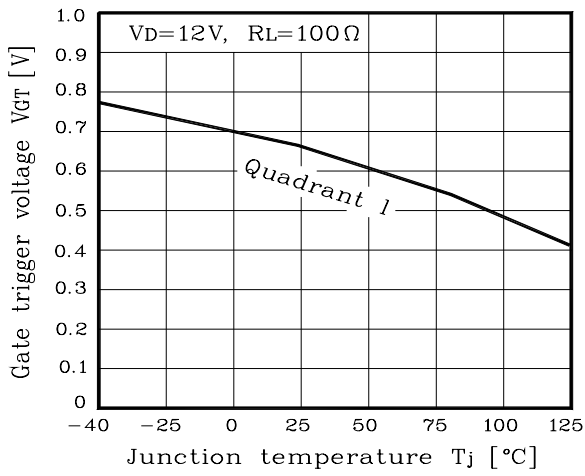


Fig. 8 $I_T - V_{GT}$

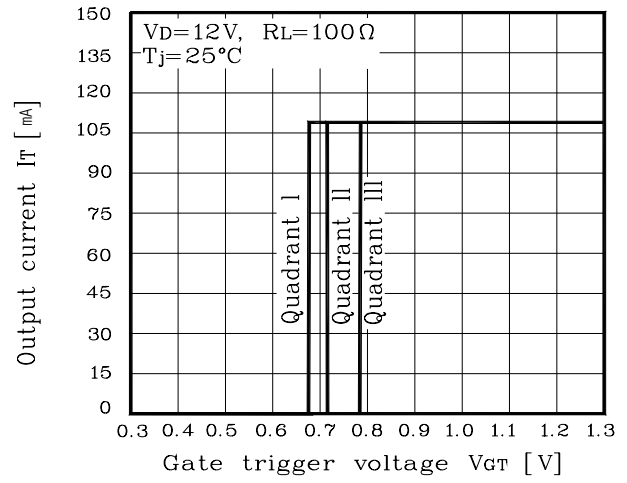
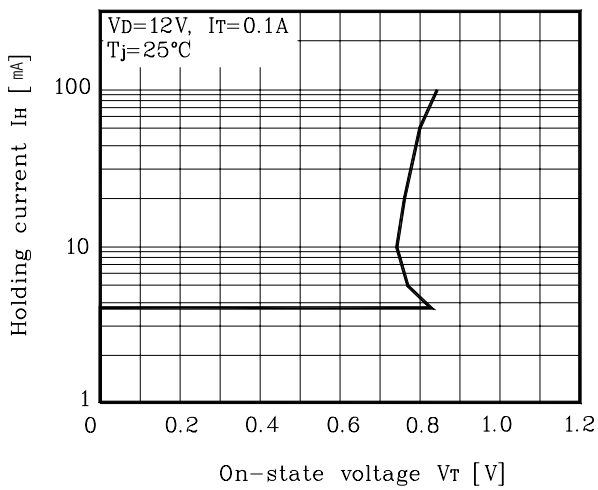
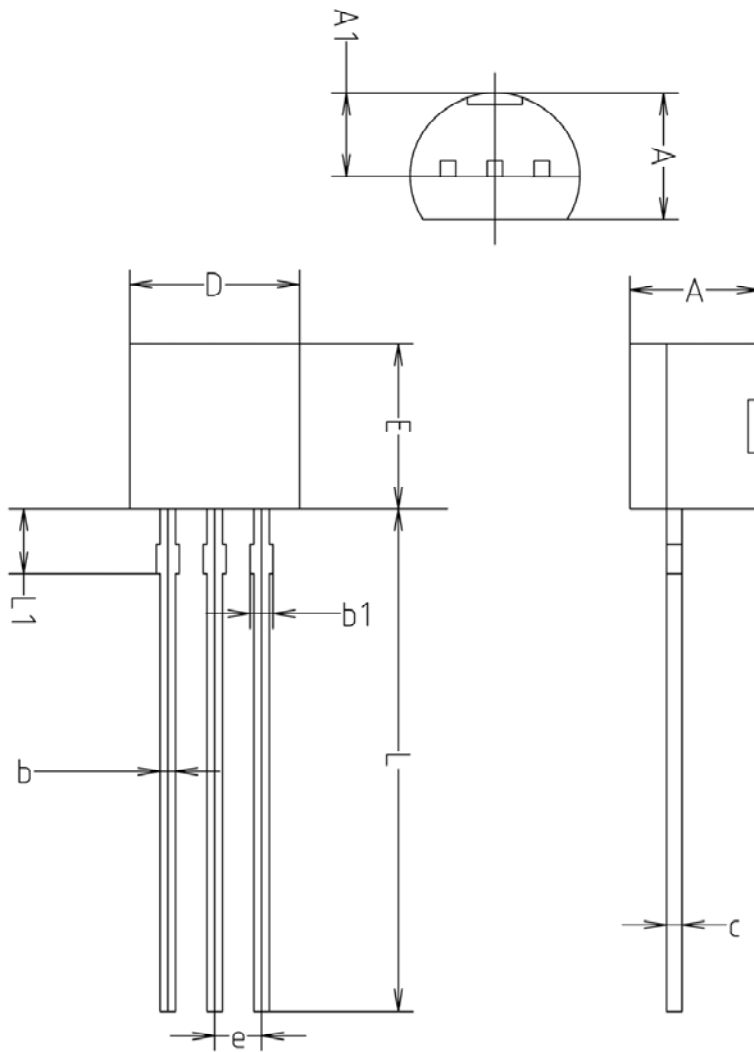


Fig. 9 $I_H - V_T$



Outline Dimension



SYMBOL	MILLMETERS(mm)		
	MINIMUM	NOMINAL	MAXIMUM
A	3.40	3.50	3.66
A1	2.46	2.51	2.59
b	0.39	0.44	0.53
b1	0.39	—	0.63
c	0.35	0.42	0.47
D	4.48	4.60	4.70
E	4.48	4.60	4.70
e	1.17	1.27	1.37
L	13.70	14.00	14.77
L1	1.55	1.70	2.15

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