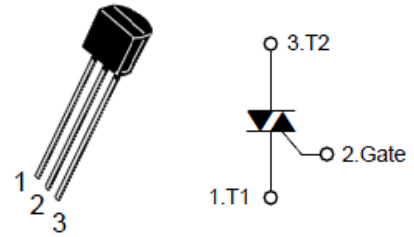


## 600V, 1A LOGIC LEVEL TRIAC

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/  $\mu S$ (Min)

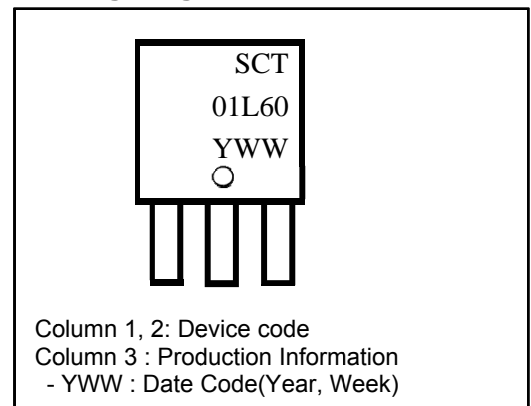
### Applications

- 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
<b>SCT01L60</b>	<b>SCT01L60</b>	<b>TO-92</b>	<b>Tape</b>

### 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 <sup>2</sup> 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	$\mu A$
Repetitive peak reverse current	$I_{RRM}$	$V_R = V_{RRM}$	-	-	10	$\mu A$

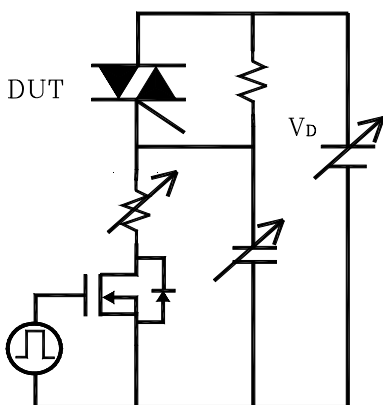
### On Characteristics

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

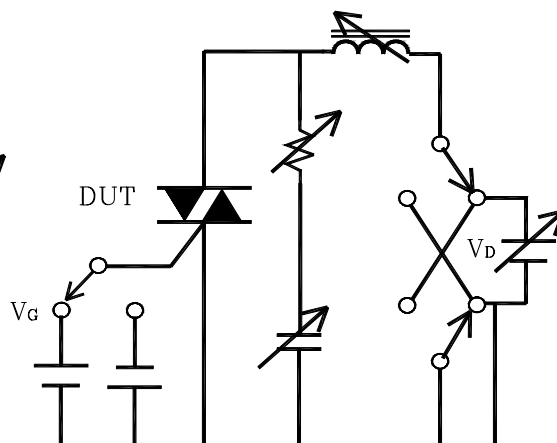
### Dynamic Characteristics

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/ $\mu S$
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/ $\mu S$

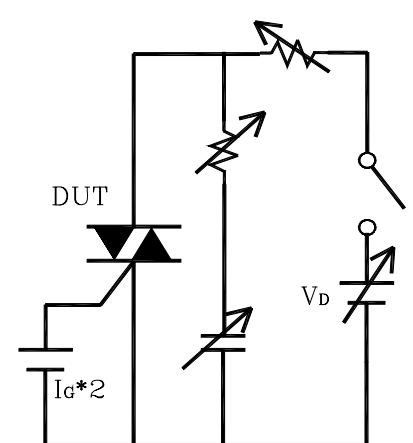
Simple circuit for  $(dV/dt)_S$



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



Simple circuit for  $dI/dt$



Electrical Characteristic Curves

Fig. 1 P - I<sub>T(RMS)</sub>

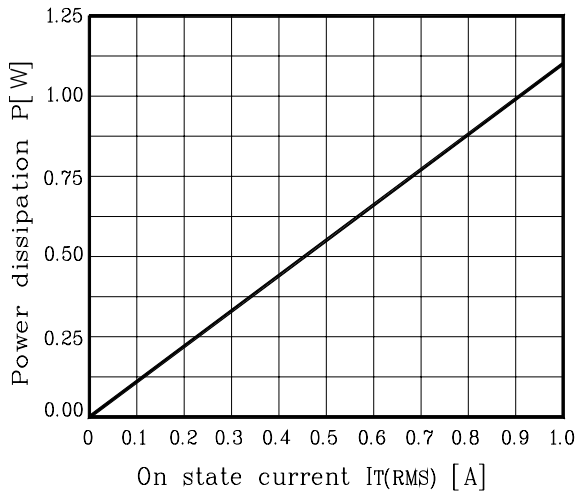


Fig. 2 I<sub>T(RMS)</sub> - T<sub>C</sub>

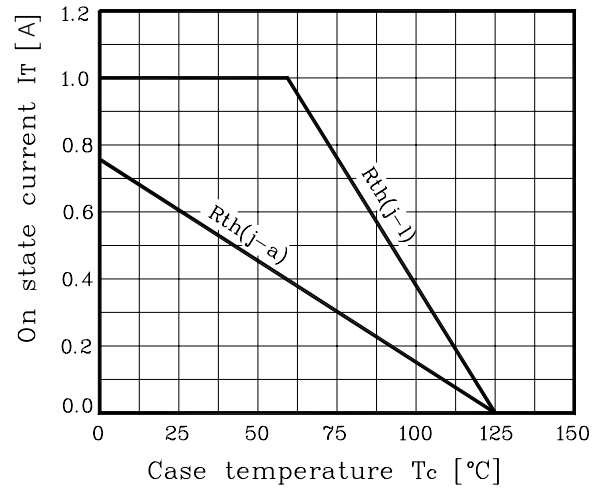


Fig. 3 I<sub>T</sub> - V<sub>T</sub>

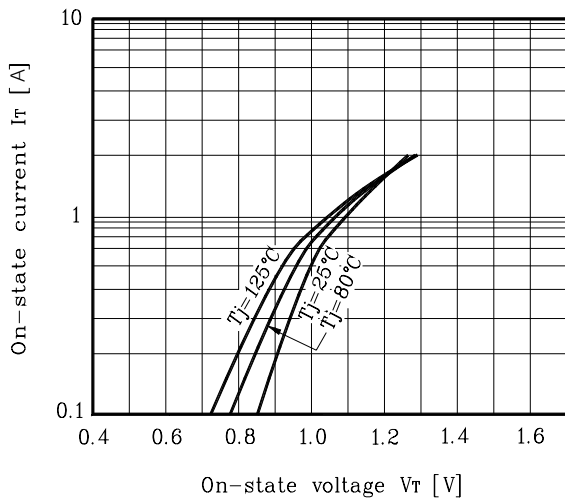


Fig. 4 (di/dt)<sub>c</sub> - (dV/dt)<sub>c</sub>

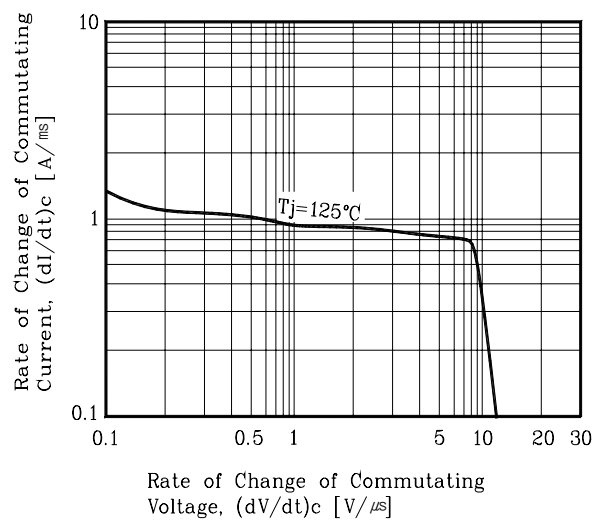


Fig. 5 I<sub>GT</sub> - T<sub>j</sub>

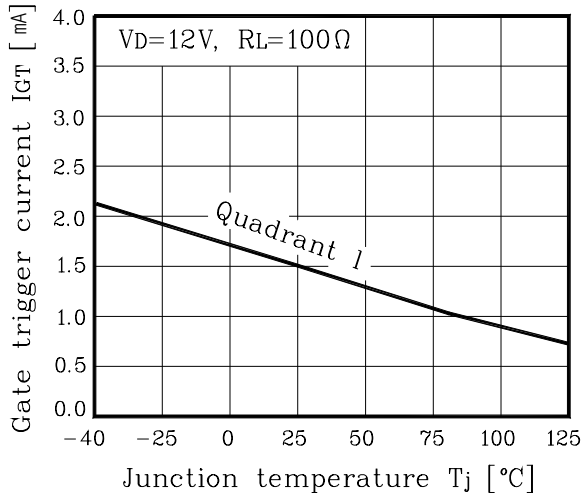
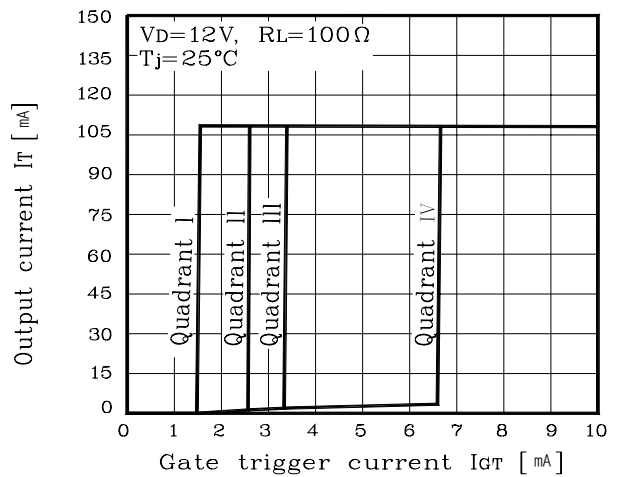


Fig. 6 I<sub>T</sub> - I<sub>GT</sub>



Electrical Characteristic Curves

Fig. 7  $V_{GT} - T_j$

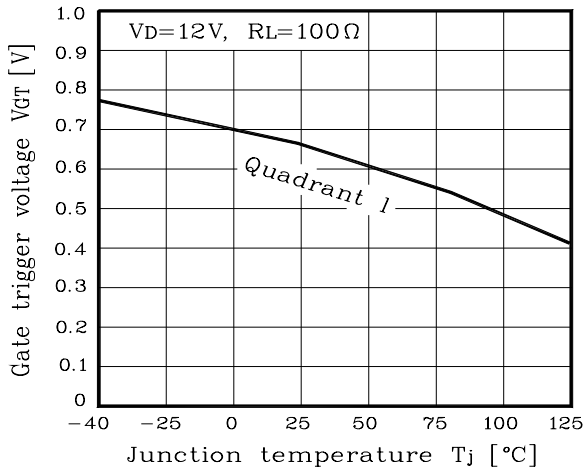


Fig. 8  $I_T - V_{GT}$

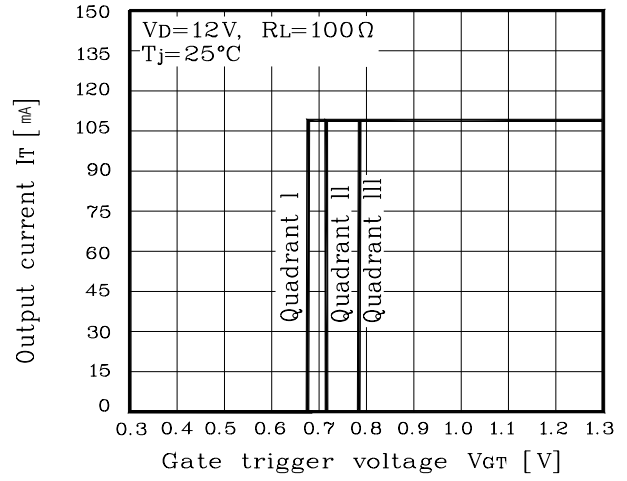
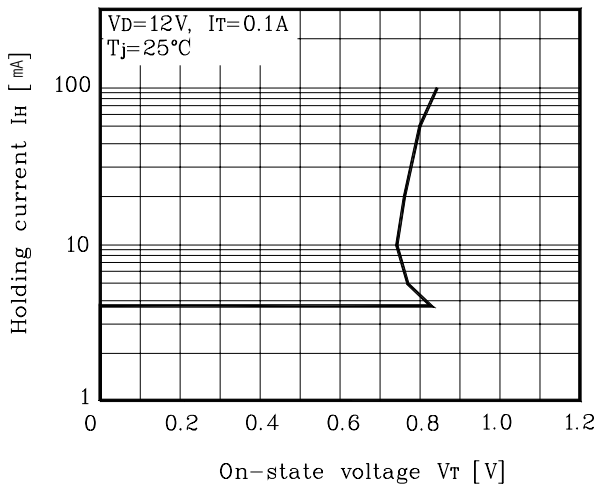
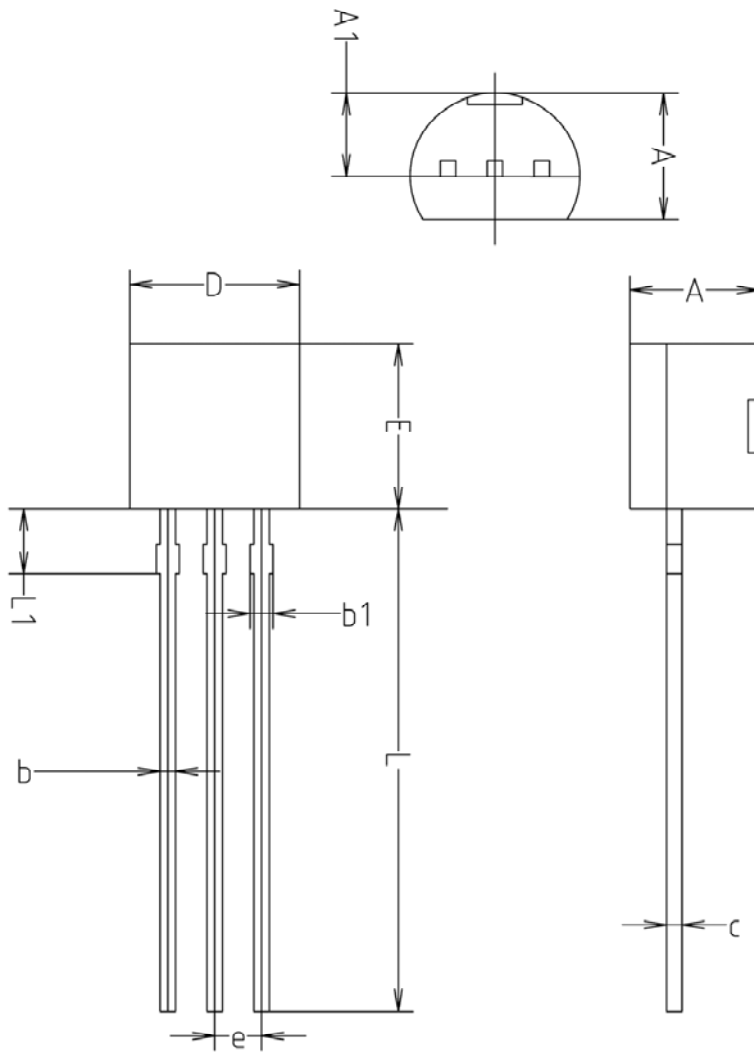


Fig. 9  $I_H - V_T$



Outline Dimension



SYMBOL	MILLIMETERS(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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