

3875081 G E SOLID STATE

01E 17634 D T-11-23  
SURGECTORS

File Number 1692

SGT03U13, SGT06U13, SGT23U13

## Unidirectional Transient Surge Suppressors

### Features:

- Clamping voltages - 33V, 60V, or 230V
- 300A peak transient surge current
- 130 mA minimum holding current
- Subnanosecond clamping action
- Low on-state voltage

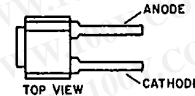
### Applications:

- Telecommunications equipment
- Data and voice lines
- Computer modems
- Alarm systems

RCA SURGECTORS are designed to protect telecommunication equipment, data links, alarm systems, power supplies and other sensitive electrical circuits from damage that could be caused by switching transients, lightning strikes, load changes, commutation spikes, and line crosses.

These RCA SURGECTORS are monolithic compound structures consisting of a thyristor whose gate region contains a special diffused section which acts as a zener diode. This zener diode section permits anode voltage turn-on of the structure. Initial clamping by the zener diode section and fast turn-on by the thyristor provide excellent voltage limiting even on very fast rise-time transients. The thyristor also features very high holding current allowing the SURGECTOR to recover to its high impedance off-state after the transient. The SURGECTOR's normal off-state condition in the forward blocking mode is a high-impedance, low-leakage state that prevents loading of the telecommunication line.

### TERMINAL DESIGNATIONS



92CS 40367

MODIFIED TO-202

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

### MAXIMUM RATINGS, Absolute-Maximum Values:

	SGT03U13	SGT06U13	SGT23U13	
Continuous Off-State Voltage	$V_{DM}$ 30	58	225	V
	$V_{RM}$ 1	1	1	V
Transient Peak Surge Current	$I_{TSM}$			
1 $\mu$ s x 2 $\mu$ s*	300			A
6 $\mu$ s x 400 $\mu$ s	125			A
10 $\mu$ s x 560 $\mu$ s	90			A
10 $\mu$ s x 1000 $\mu$ s	75			A
One Half Cycle, 50-60 Hz**	60			A
One Second, 50-60 Hz, Halfwave	30			A
Operating Temperature	-40 to +85			°C
Storage Temperature	-40 to +150			°C

\*Unit designed not to fall open below 450A.  
\*\*One every 30 seconds maximum.

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ELECTRICAL CHARACTERISTICS, At Case Temperature ( $T_c = 25^\circ\text{C}$ ) unless otherwise specified

CHARACTERISTIC		LIMITS			UNITS
		MIN.	TYP.	MAX.	
Off-State Current At Maximum Rated $V_{DM}$	$I_{DM}$				
	$T_A = 25^\circ\text{C}$	—	—	50	nA
	$T_A = 85^\circ\text{C}$	—	—	10	$\mu\text{A}$
Reverse Current $V_{RM} = 1\text{ V}$	$I_{RM}$				
	$T_A = 25^\circ\text{C}$	—	—	1	mA
	$T_A = 85^\circ\text{C}$	—	—	10	mA
Clamping Voltage, $I_z = 100\ \mu\text{A}$	$V_z$				
	SGT03U13	33	—	—	V
	SGT06U13	60	—	—	V
	SGT23U13	230	—	—	V
Breakover Voltage, $D_v/D_T = 100\text{V}/\mu\text{s}$	$V_{BO}$				
	SGT03U13	—	—	50	V
	SGT06U13	—	—	85	V
	SGT23U13	—	—	275	V
Holding Current	$I_H$	130	—	—	mA
On-State Voltage, $I_T = 10\text{ A}$	$V_T$	—	—	2	V
Main Terminal Capacitance	$C_o$	—	90	—	pF

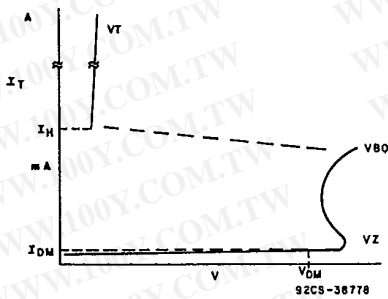


Fig. 1 - Typical volt-ampere characteristics.

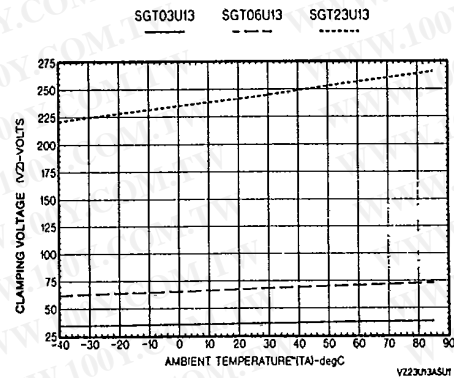


Fig. 2 - Typical clamping voltage vs. temperature.

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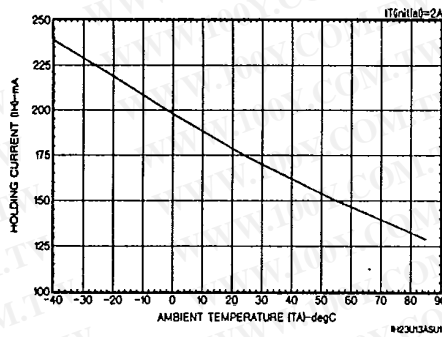


Fig. 3 - Typical holding current vs. temperature.

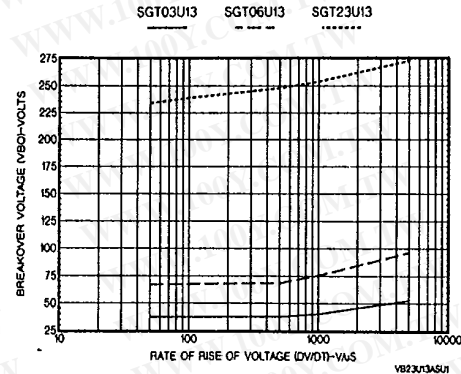


Fig. 4 - Typical V<sub>BO</sub> vs. dV/dt.