

# STR 80000 Series

T-58-29

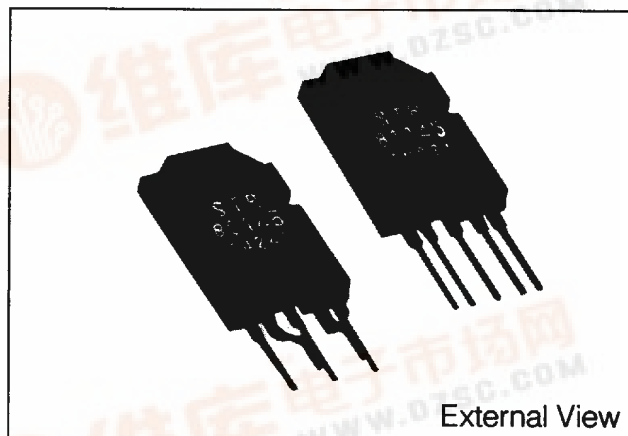
## Hybrid Auto-Switch Module—Doubler

### Features

- For automatic switch-over from voltage-doubler to bridge rectification and from bridge rectification to voltage doubler
- With a planar triac incorporated
- Fixed switch-over voltage
- Plastic package (transfer mold)

### Applications

- PC and other OA equipment
- Test equipment
- TV monitors
- Telecommunication equipment



External View

### Absolute Maximum Ratings (Ta = 25°C)

| Description                       | Symbol   | Unit | Conditions   | Ratings        |                         |
|-----------------------------------|----------|------|--|----------------|-------------------------|
|                                   |          |      |  | STR80145A      | STR81145A,<br>STR81159A |
| Peak Repetitive Off-state Voltage | V DRM    | V    | Tj = -10 ~ +125 °C   | 500            |                         |
| Static On-state Current           | I T(RMS) | A    | Tj = 125°C Conduction Angle = 360°                         | 5.0            | 10.0                    |
| Surge On-state Current            | I TMS    | A    | Tj = 125°C 50Hz, Full Sine Wave Peak Value, Non-repetitive | 50             | 100                     |
| Operating Temperature*            | Top      | °C   |  | -10 ~ +100(Tc) |                         |
| Storage Temperature               | Tstg     | °C   |  | -30 ~ +125     |                         |
| Junction Temperature              | Tj       | °C   |  | +125           |                         |

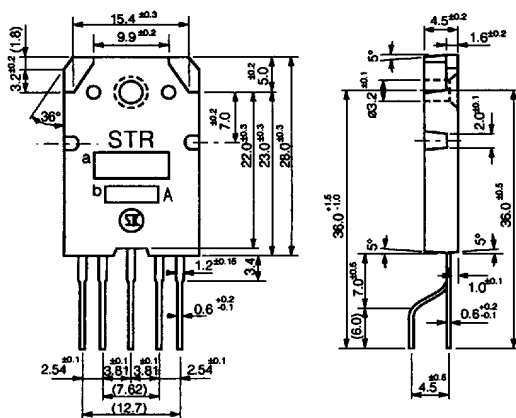
\*Temperature of Frame

### Electrical Characteristics (Ta = 25°C)

| Description                                    | Symbol | Unit  | Conditions                           | Ratings                 |           |
|--|--------|-------|--------------------------------------|-------------------------|-----------|
|  |        |       |                                      | STR80145A,<br>STR81145A | STR81159A |
| Starting Voltage of Voltage-Doubler            | Vs     | V(AC) | Test Circuit 2                       | 80 Max                  |           |
| Fixed Switchover Voltage                       | 1 VC1  | V     | Test Circuit 1                       | 196 ± 5                 | 215 ± 5   |
|  | 2 VC2  | V(AC) | Test Circuit 2                       | 145                     | 159       |
| Temperature Coefficient of Switch-over Voltage | Kt     | mV/°C | Test Circuit 1<br>Tc = -20 ~ +100 °C | -30 Typ                 |           |
| Off-state Current                              | I DRM  | μ A   | VD = V DRM, RGK = ∞                  | 100 Max                 |           |
| On-state Voltage                               | V TM   | V     | I TM = 5A                            | 1.8 Max                 |           |
| Thermal Resistance                             | θj-c   | °C/W  | Between Junction and Frame           | 1.8                     |           |

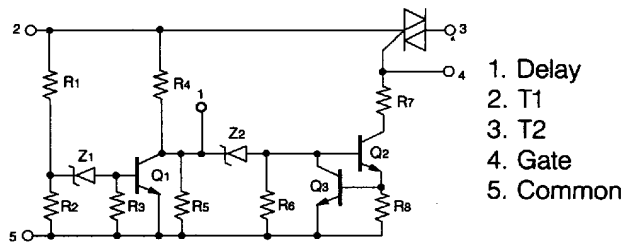
\*\*VC2 is just a reference value.

Outline Drawings. Dimensions and Pin Connections



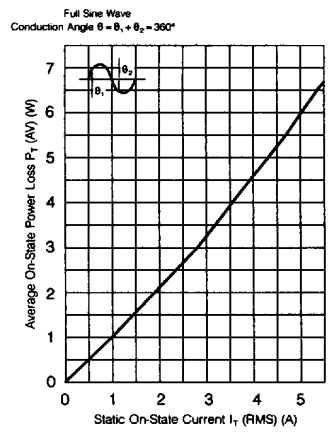
- 1. Delay
- 2. T1
- 3. T2
- 4. Gate
- 5. Common

Equivalent Circuit

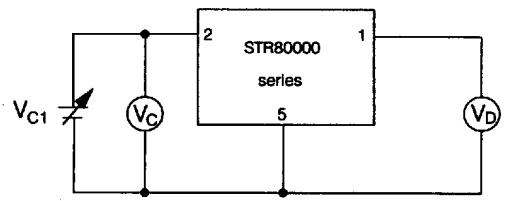


- 1. Delay
- 2. T1
- 3. T2
- 4. Gate
- 5. Common

PT(AV)-IT(RMS) Characteristics

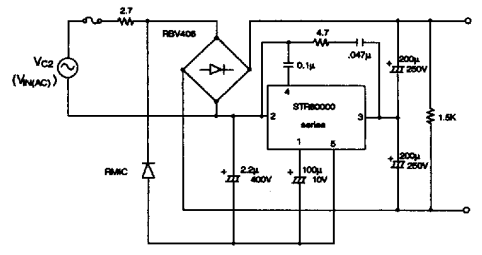


Fixed Output Voltage Test Circuit (Test Circuit 1)

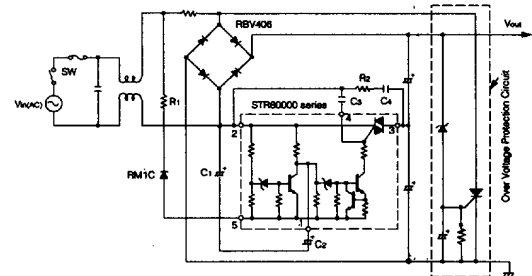


Fixed switch over voltage 1 is defined as voltage which gets V<sub>D</sub> being 3V.

Actual Working Circuit (Test Circuit 2)



Application Circuit Example



Circuit Constants (Recommended Value)  
 R<sub>1</sub>: 2.2Ω    R<sub>2</sub>: 4.7Ω  
 C<sub>1</sub>: 2.2μF/400V    C<sub>2</sub>: 100μF/10V  
 C<sub>3</sub>: 0.1μF    C<sub>4</sub>: 0.047μF