

# STR 80000 Series

T-58-29

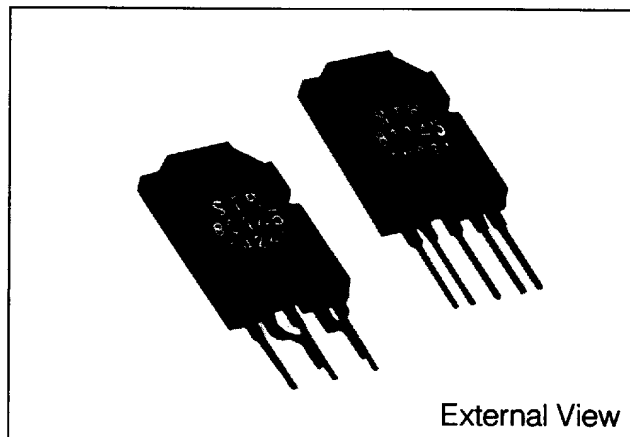
## Hybrid Auto-Switch Module—Doubler

### 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, STR81159A
Peak Repetitive Off-state Voltage	V <sub>DRM</sub>	V	T <sub>j</sub> = -10 ~ +125 °C	500	
Static On-state Current	I <sub>T(RMS)</sub>	A	T <sub>j</sub> = 125°C Conduction Angle = 360°	5.0	10.0
Surge On-state Current	I <sub>TMS</sub>	A	T <sub>j</sub> = 125°C 50Hz, Full Sine Wave Peak Value, Non-repetitive	50	100
Operating Temperature*	T <sub>op</sub>	°C		-10 ~ +100(T <sub>c</sub> )	
Storage Temperature	T <sub>stg</sub>	°C		-30 ~ +125	
Junction Temperature	T <sub>j</sub>	°C		+125	

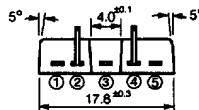
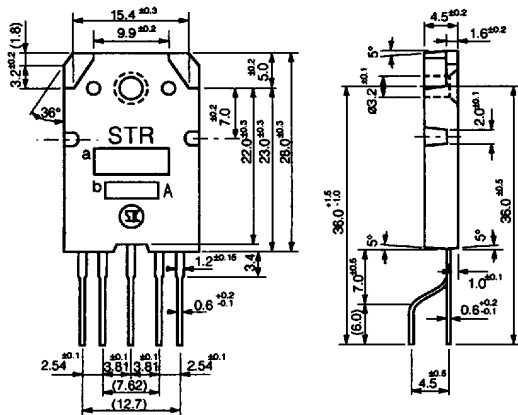
\*Temperature of Frame

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

Description	Symbol	Unit	Conditions	Ratings		
				STR80145A, STR81145A	STR81159A	
Starting Voltage of Voltage-Doubler	V <sub>s</sub>	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	K <sub>t</sub>	mV/°C	Test Circuit 1 T <sub>c</sub> = -20 ~ +100 °C	-30 Typ		
Off-state Current	I <sub>DRM</sub>	μA	V <sub>D</sub> = V <sub>DRM</sub> , R <sub>GK</sub> = ∞	100 Max		
On-state Voltage	V <sub>TM</sub>	V	I <sub>TM</sub> = 5A	1.8 Max		
Thermal Resistance	θ <sub>j-c</sub>	°C/W	Between Junction and Frame	1.8		

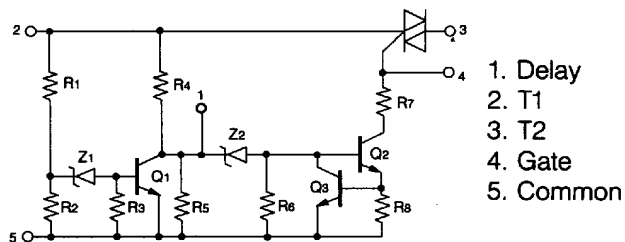
\*\*VC2 is just a reference value.

■ Outline Drawings. Dimensions and Pin Connections



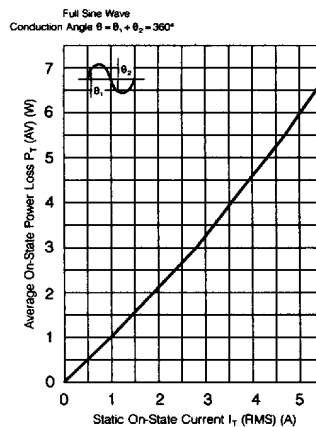
- 1. Delay
- 2. T1
- 3. T2
- 4. Gate
- 5. Common

■ Equivalent Circuit

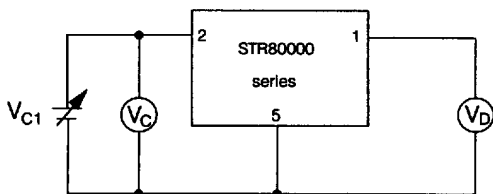


- 1. Delay
- 2. T1
- 3. T2
- 4. Gate
- 5. Common

■ PT(AV)-IT(RMS) Characteristics

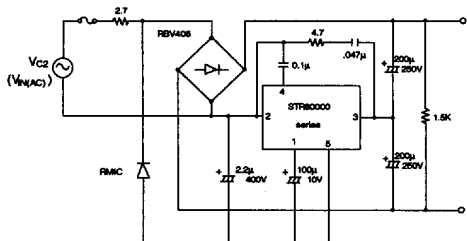


■ Fixed Output Voltage Test Circuit (Test Circuit 1)

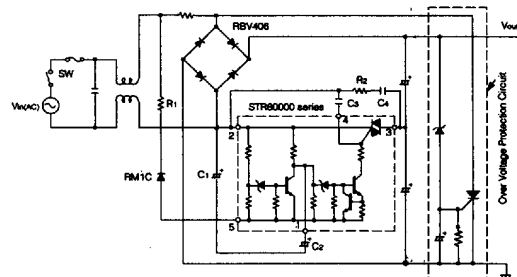


Fixed switch over voltage 1 is defined as voltage which gets  $V_D$  being 3V.

■ Actual Working Circuit (Test Circuit 2)



■ Application Circuit Example



Circuit Constants (Recommended Value)

- $R_1$ : 2.2Ω      $R_2$ : 4.7Ω
- $C_1$ : 2.2μF/400V      $C_2$ : 100μF/10V
- $C_3$ : 0.1μF      $C_4$ : 0.047μF