



PRELIMINARY

SOLID STATE DEVICES, INC.  
14830 Valley View Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-7855 \* Fax: (562) 404-1773

# SPT165

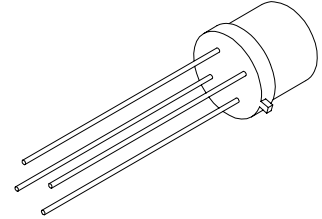
**10 mA  
45 VOLTS  
NPN (V<sub>REF</sub>) TRANSISTOR**

## DESIGNER'S DATA SHEET

### FEATURES:

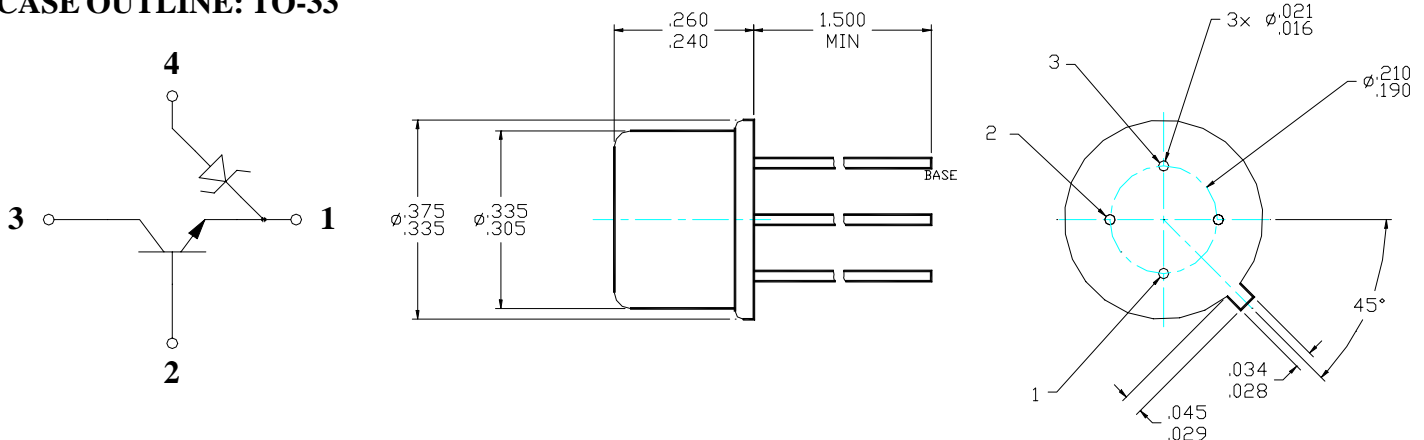
- **BV<sub>CEO</sub> 45V.**
- **Very Low Leakage.**
- **High Gain.**
- **Stable Reference Voltage 0.002%/ °C from 0 to 70°C.**
- **Isolated Case.**
- **Hermetic, Metal Case with Glass Seals.**
- **150°C Operating Temperature.**

TO-33



MAXIMUM RATINGS	SYMBOL	VALUE	UNITS
Collector-Emitter Voltage	V <sub>CEO</sub>	45	Volts
Collector-Base Voltage	V <sub>CBO</sub>	45	Volts
Emitter-Base Voltage	V <sub>EBO</sub>	3	Volts
Collector Current, T <sub>c</sub> ≤ 150°C	I <sub>C</sub>	10	mAmps
Base or Zener Current, T <sub>c</sub> ≤ 150°C	I <sub>B</sub> , I <sub>Z</sub>	6	mAmps
Total Device Dissipation @ T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	250 2	mW mW/°C
Operating and Storage Temperature	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	500	°C/W

### CASE OUTLINE: TO-33



NOTE: All specifications are subject to change without notification.  
SCD's for these devices should be reviewed by SSDI prior to release.

**DATA SHEET #: TR0010A**

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<b>ELECTRICAL CHARACTERISTICS</b>	<b>SYMBOL</b>	<b>MIN</b>	<b>MAX</b>	<b>UNITS</b>
<b>Collector-Emitter Breakdown Voltage *</b> ( $I_C = 1.0\text{mA}_{DC}$ )	$BV_{CEO}$	45	-	V
<b>Collector Cutoff Current</b> ( $V_{CB} = 30V_{DC}$ )	$I_{CBO}$	-	1	$\mu\text{A}$
<b>DC Current Gain*</b> ( $I_C = 500\mu\text{A}_{DC}$ , $V_{CE} = 3V_{DC}$ )	$H_{FE}$	10	120	
<b>Reference Voltage *</b> ( $V_{CE} = 3V_{DC}$ )	$V_{REF}$	6.3	7.7	$V_{DC}$

\*Pulse Test: Pulse Width = 300us, Duty Cycle = 2%