



PRELIMINARY

# SOLID STATE DEVICES, INC.

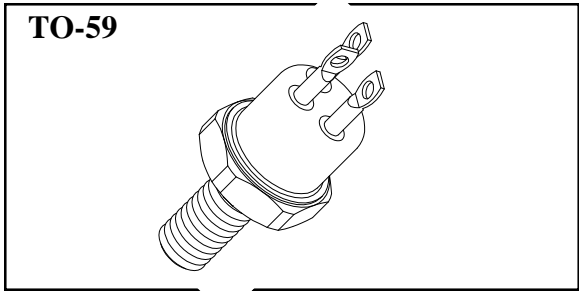
14005 Stage Road \* Santa Fe Springs, Ca 90670  
Phone: (562) 404-4474 \* Fax: (562) 404-1773

## DESIGNER'S DATA SHEET

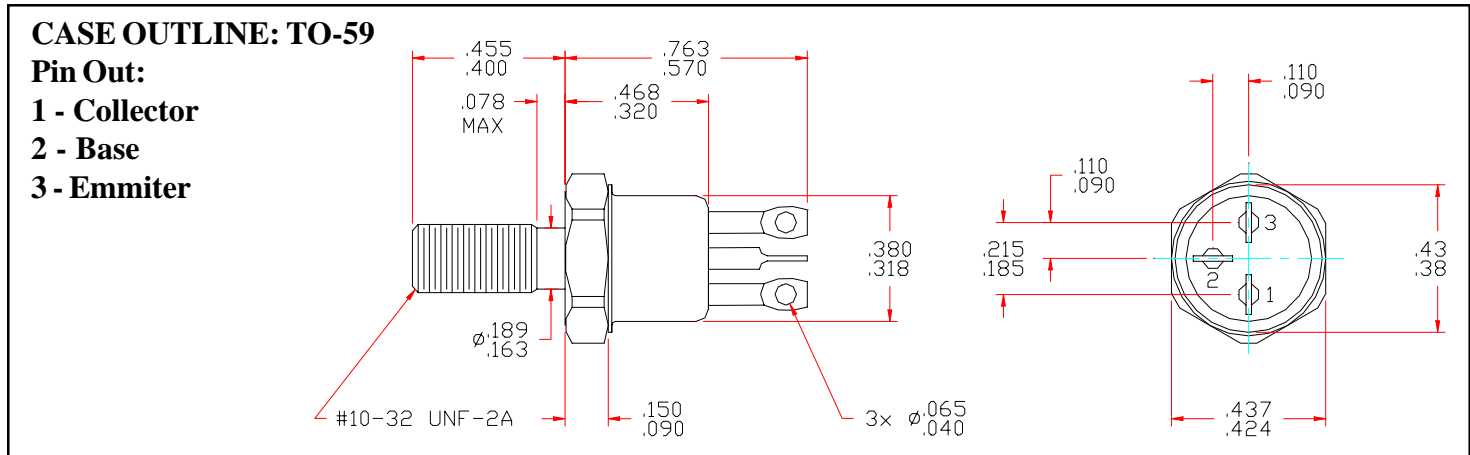
- FEATURES:**
- **BVCBO 600V.**
  - **Fast Switching.**
  - **Low Leakage.**
  - **Low Saturation Voltage.**
  - **200°C Operating, Gold Eutectic Die Attach.**
  - **Designed for Complementary Use with STX6905.**

# STX7905

## 1 AMP 600 VOLTS NPN TRANSISTOR



MAXIMUM RATINGS	SYMBOL	VALUE	UNITS
Collector-Emitter Voltage $R_{BE} = 1 \text{ k}\Omega$	$V_{CEO}$ $V_{CER}$	450 600	Volts
Collector-Base Voltage	$V_{CBO}$	600	Volts
Emitter-Base Voltage	$V_{EBO}$	6	Volts
Collector Current	$I_C$	1	Amps
Base Current	$I_B$	0.5	Amps
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	20 133	Watts mW/°C
Operating and Storage Temperature	$T_J, T_{STG}$	-65 to +200	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	7.5	°C/W



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

**DATA SHEET #: TR0006A**

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ELECTRICAL CHARACTERISTICS	SYMBOL	MIN	MAX	UNITS
<b>Collector-Emitter Breakdown Voltage*</b> ( $I_C = 1 \text{ mA}_{DC}$ ) ( $I_C = 100 \mu\text{A}_{DC}$ ; $R_{BE} = 1 \text{ k}\Omega$ )	<b><math>BV_{CEO}</math></b> <b><math>BV_{CER}</math></b>	<b>450</b> <b>600</b>	-	<b><math>V_{DC}</math></b>
<b>Collector-Base Breakdown Voltage</b> ( $I_C = 100 \mu\text{A}_{DC}$ )	<b><math>BV_{CBO}</math></b>	<b>600</b>	-	<b>V</b>
<b>Emitter-Base Breakdown Voltage</b> ( $I_E = 20 \mu\text{A}_{DC}$ )	<b><math>BV_{EBO}</math></b>	<b>6</b>	-	<b>V</b>
<b>Collector Cutoff Current</b> ( $V_{CB} = 600 V_{DC}$ )	<b><math>I_{CBO}</math></b>	-	<b>1</b>	<b><math>\mu\text{A}</math></b>
<b>Emmitter Cutoff Current</b> ( $V_{EB} = 6 V_{DC}$ )	<b><math>I_{EBO}</math></b>	-	<b>1</b>	<b><math>\mu\text{A}</math></b>
<b>DC Current Gain*</b> ( $I_C = 1 \text{ mA}_{DC}$ ; $V_{CE} = 10 V_{DC}$ ) ( $I_C = 25 \text{ mA}_{DC}$ ; $V_{CE} = 10 V_{DC}$ ) ( $I_C = 100 \text{ mA}_{DC}$ ; $V_{CE} = 15 V_{DC}$ )	<b><math>H_{FE}</math></b>	<b>40</b> <b>40</b> <b>30</b>	<b>200</b> <b>200</b> -	
<b>Collector-Emitter Saturation Voltage*</b> ( $I_C = 25 \text{ mA}_{DC}$ , $I_B = 2.5 \text{ mA}_{DC}$ )	<b><math>V_{CE(SAT)}</math></b>	-	<b>0.5</b>	<b><math>V_{DC}</math></b>
<b>Base-Emitter Saturation Voltage*</b> ( $I_C = 25 \text{ mA}_{DC}$ , $I_B = 2.5 \text{ mA}_{DC}$ )	<b><math>V_{BE(SAT)}</math></b>	-	<b>1.0</b>	<b><math>V_{DC}</math></b>
<b>Current Gain Bandwidth Product</b> ( $I_C = 50 \text{ mA}_{DC}$ , $V_{CE} = 10 V_{DC}$ , $f = 1 \text{ MHz}$ )	<b>fT</b>	<b>25</b>	-	<b>MHz</b>
<b>Output Capacitance</b> ( $V_{CB} = 30 V_{DC}$ , $I_E = 0 \text{ A}_{DC}$ , $f = 1.0 \text{ MHz}$ )	<b><math>C_{ob}</math></b>	-	<b>15</b>	<b>pf</b>

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