



Micro Commercial Components

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# 2SC2389S

## Features

- High breakdown voltage:  $BV_{CEO}=120Vdc$
- Complements the 2SA1038S
- Marking : TP
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

## 50mA High-voltage Amplifier Transistor 120 Volts

## Absolute Maximum Ratings

| Symbol    | Rating                         | Rating      | Unit |
|-----------|--------------------------------|-------------|------|
| $V_{CEO}$ | Collector-Emitter Voltage      | 120         | V    |
| $V_{CBO}$ | Collector-Base Voltage         | 120         | V    |
| $V_{EBO}$ | Emitter-Base Voltage           | 5.0         | V    |
| $I_C$     | Collector Current              | 50          | mA   |
| $P_C$     | Collector Power Dissipation    | 0.3         | W    |
| $T_J$     | Operating Junction Temperature | -55 to +150 | °C   |
| $T_{STG}$ | Storage Temperature            | -55 to +150 | °C   |

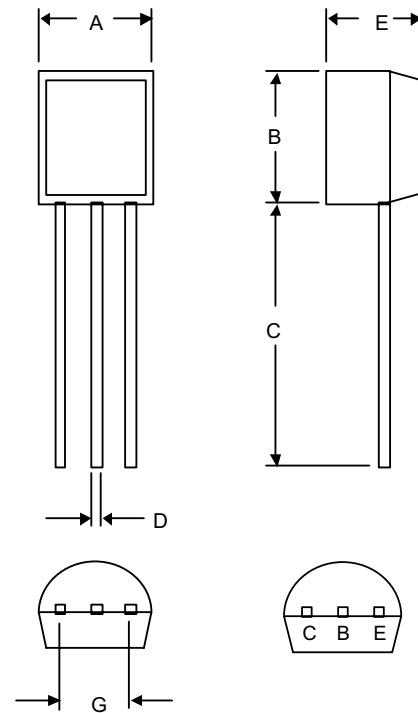
## Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Typ | Max | Units |
|--------|-----------|-----|-----|-----|-------|
|--------|-----------|-----|-----|-----|-------|

### OFF CHARACTERISTICS

|               |  |     |     |     |         |
|---------------|--|-----|-----|-----|---------|
| $BV_{CEO}$    | Collector-Emitter Breakdown Voltage<br>( $I_C=50\mu A$ )                 | 120 | --- | --- | Vdc     |
| $BV_{CBO}$    | Collector-Base Breakdown Voltage<br>( $I_C=1.0mA$ )                      | 120 | --- | --- | Vdc     |
| $BV_{EBO}$    | Emitter-Base Breakdown Voltage<br>( $I_E=50\mu A$ , $I_C=0$ )            | 5.0 | --- | --- | Vdc     |
| $I_{CBO}$     | Collector Cutoff Current<br>( $V_{CB}=100Vdc$ )                          | --- | --- | 0.5 | $\mu A$ |
| $I_{EBO}$     | Base Cutoff Current<br>( $V_{EB}=4.0Vdc$ )                               | --- | --- | 0.5 | $\mu A$ |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage<br>( $I_C/I_B=10mA/1.0mA$ )         | --- | --- | 0.5 | Vdc     |
| $h_{FE}$      | DC Current Transfer Ratio<br>( $V_{CE}=6.0Vdc$ , $I_C=2.0mA$ )           | 180 | --- | 560 | ---     |
| $f_T$         | Transition Frequency<br>( $V_{CE}=12Vdc$ , $I_C=2.0mA$ ,<br>$f=100MHz$ ) | --- | 140 | --- | MHz     |
| $C_{ob}$      | Output Capacitance<br>( $V_{CB}=12Vdc$ , $I_C=0$ , $f=1.0MHz$ )          | --- | 2.5 | --- | pF      |

## TO-92S



| DIM | INCHES |     | MM    |     | NOTE |
|-----|--------|-----|-------|-----|------|
|     | MIN    | MAX | MIN   | MAX |      |
| A   | .16    |     | 4.00  |     |      |
| B   | .12    |     | 3.00  |     |      |
| C   | .59    | --- | 15.00 | --- |      |
| D   | .02    |     | 0.45  |     |      |
| E   | .08    |     | 2.00  |     |      |
| G   | .20    |     | 5.00  |     |      |



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## Ordering Information

|                  |                |
|------------------|----------------|
| Device           | Packing        |
| (Part Number)-BP | Bulk;1Kpcs/Bag |

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