



Micro Commercial Components

Micro Commercial Components  
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**KTC3199-O**  
**KTC3199-Y**  
**KTC3199-GR**  
**KTC3199-BL**

## Features

- High DC Current Gain:  $h_{FE}=70\sim700$
- Excellent  $h_{FE}$  Linearity:  $h_{FE}(0.1mA)/h_{FE}(2.0mA)=0.95(Typ)$
- Low Noise:  $NF=1.0dB(Typ.)$ ,  $10dB(Max.)$
- Complementary to KTA1267
- Marking: C3199
- Case Material: Molded Plastic. UL Flammability Classification Rating 94-0 and MSL Rating 1
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

## Maximum Ratings

| Symbol    | Rating                      | Rating      | Unit        |
|-----------|-----------------------------|-------------|-------------|
| $V_{CEO}$ | Collector-Emitter Voltage   | 50          | V           |
| $V_{CBO}$ | Collector-Base Voltage      | 50          | V           |
| $V_{EBO}$ | Emitter-Base Voltage        | 5.0         | V           |
| $I_C$     | Collector Current           | 150         | mA          |
| $I_E$     | Emitter Current             | 150         | A           |
| $P_C$     | Collector power dissipation | 400         | mW          |
| $T_J$     | Junction Temperature        | -55 to +150 | $^{\circ}C$ |
| $T_{STG}$ | Storage Temperature         | -55 to +150 | $^{\circ}C$ |

## Electrical Characteristics @ 25 $^{\circ}C$ Unless Otherwise Specified

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

### OFF CHARACTERISTICS

|           |                                                            |     |     |     |              |
|-----------|------------------------------------------------------------|-----|-----|-----|--------------|
| $I_{CBO}$ | Collector-Base Cutoff Current<br>( $V_{CB}=50Vdc, I_E=0$ ) | --- | --- | 0.1 | $\mu A_{dc}$ |
| $I_{EBO}$ | Emitter-Base Cutoff Current<br>( $V_{EB}=5.0Vdc, I_C=0$ )  | --- | --- | 0.1 | $\mu A_{dc}$ |

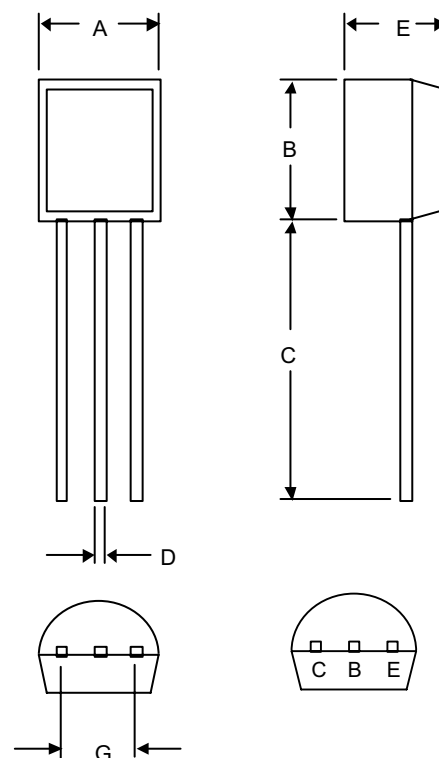
### ON CHARACTERISTICS

|               |                                                                             |     |     |      |     |
|---------------|-----------------------------------------------------------------------------|-----|-----|------|-----|
| $h_{FE}$      | DC Current gain <sup>(1)</sup><br>( $I_C=2.0mA_{dc}, V_{CE}=6.0Vdc$ )       | 70  | --- | 700  | --- |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage<br>( $I_C=100mA_{dc}, I_E=10mA_{dc}$ ) | --- | 0.1 | 0.25 | Vdc |
| $f_T$         | Transistor Frequency<br>( $V_{CE}=10Vdc, I_C=1.0mA_{dc}$ )                  | 80  | --- | ---  | MHz |
| $C_{ob}$      | Collector Output Capacitance<br>( $V_{CB}=10Vdc, I_E=0, f=1.0MHz$ )         | --- | 2.0 | 3.5  | pF  |
| NF            | Noise Figure<br>( $V_{CE}=6.0Vdc, I_C=0.1mA_{dc}, f=1.0kHz, R_g=10KOHM$ )   | --- | 1.0 | 10   | dB  |

(1)  $h_{FE}$  Classification O: 70~140, Y: 120~240, GR: 200~400, BL: 300~700

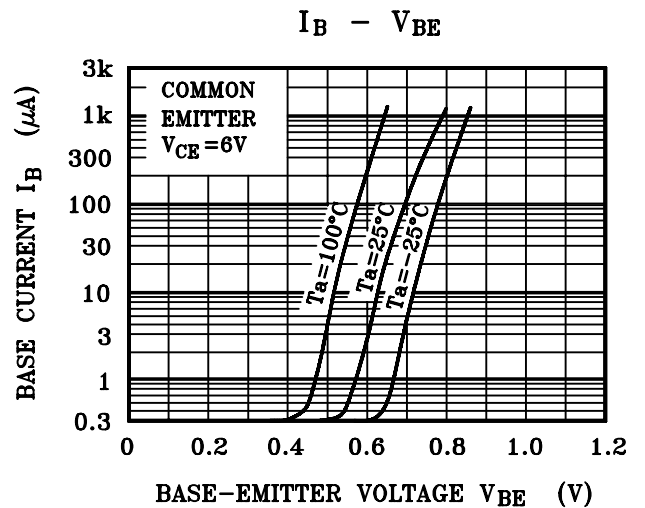
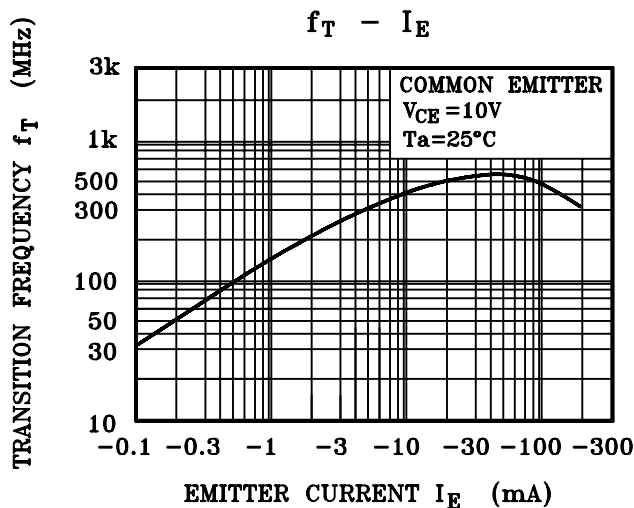
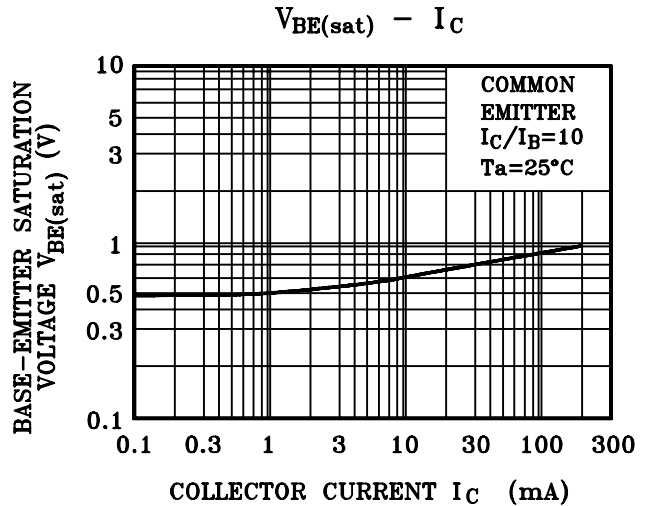
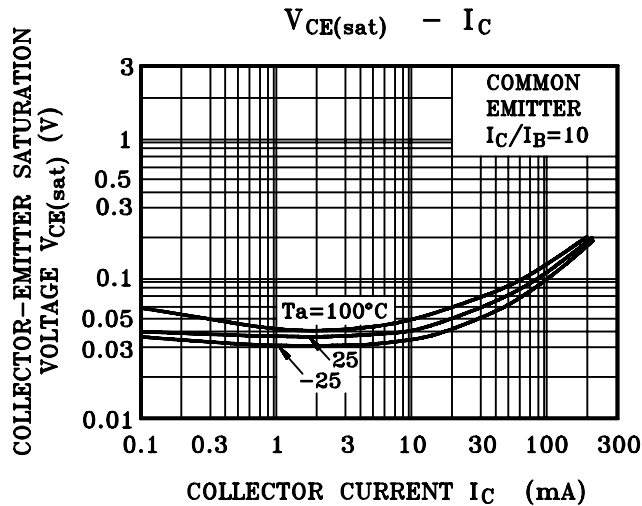
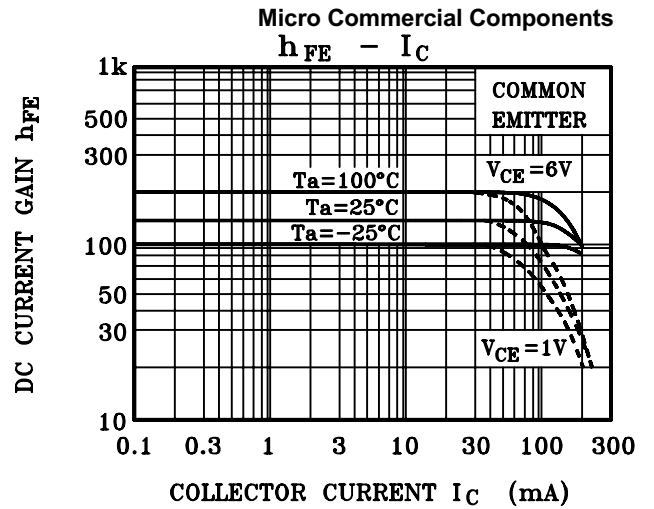
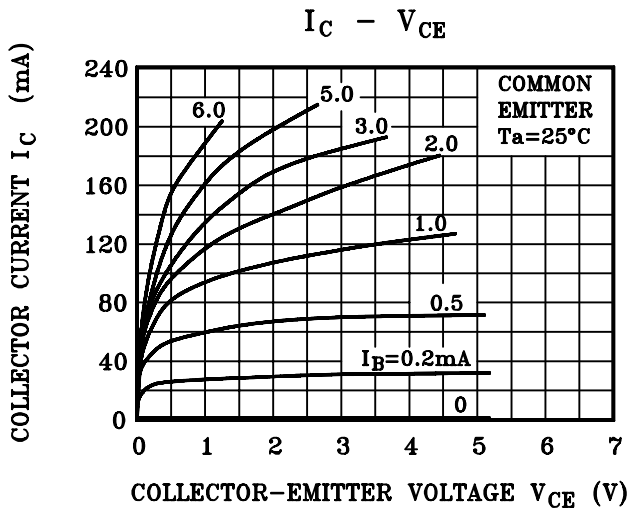
## NPN General Purpose Application

## TO-92S

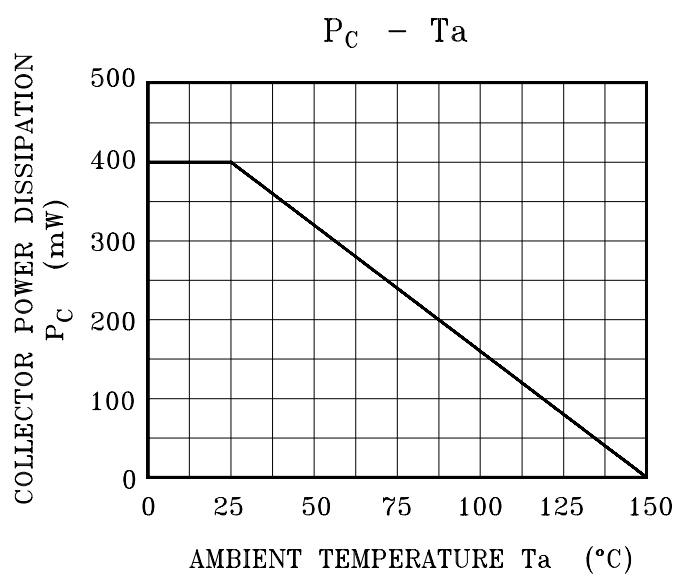


| DIMENSIONS |        |     |       |     |      |
|------------|--------|-----|-------|-----|------|
| DIM        | INCHES |     | MM    |     | NOTE |
|            | MIN    | MAX | MIN   | MAX |      |
| A          | .16    |     | 4.00  |     |      |
| B          | .12    |     | 3.00  |     |  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

KTC3199



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## Ordering Information

| Device           | Packing         |
|------------------|-----------------|
| (Part Number)-BP | Bulk;500pcs/Bag |

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