



Micro Commercial Components



Micro Commercial Components  
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**2SC1623-L6**

**2SC1623-L7**

## Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- High DC Current Gain:  $h_{FE}=600$  Max. ( $V_{CE}=6.0V$ ,  $I_C=1.0mA$ )
- High voltage:  $V_{CEO}=50V$
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

## Maximum Ratings

| Symbol    | Rating                      | Rating      | Unit |
|-----------|-----------------------------|-------------|------|
| $V_{CEO}$ | Collector-Emitter Voltage   | 50          | V    |
| $V_{CBO}$ | Collector-Base Voltage      | 60          | V    |
| $V_{EBO}$ | Emitter-Base Voltage        | 5.0         | V    |
| $I_C$     | Collector Current           | 100         | mA   |
| $P_C$     | Collector power dissipation | 200         | mW   |
| $T_J$     | 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

|           |  |     |     |     |         |
|-----------|--|-----|-----|-----|---------|
| $I_{CBO}$ | Collector Cutoff Current<br>( $V_{CB}=60Vdc$ , $I_E=0$ ) | --- | --- | 0.1 | $\mu A$ |
| $I_{EBO}$ | Emitter Cutoff Current<br>( $V_{EB}=5.0Vdc$ , $I_C=0$ )  | --- | --- | 0.1 | $\mu A$ |

### ON CHARACTERISTICS

|               |   |      |      |      |     |
|---------------|---|------|------|------|-----|
| $h_F$         | DC Current Gain*<br>( $I_C=1.0mA$ , $V_{CE}=6.0Vdc$ )               | 200  | ---  | 600  | --- |
| $V_{CE(sat)}$ | Collector Saturation Voltage*<br>( $I_C=100mA$ , $I_B=10mA$ )       | ---  | 0.15 | 0.3  | Vdc |
| $V_{BE(sat)}$ | Base Saturation Voltage*<br>( $I_C=100mA$ , $I_B=10mA$ )            | ---  | 0.86 | 1.0  | Vdc |
| $V_{BE}$      | Base Emitter Voltage*<br>( $V_{CE}=6.0Vdc$ , $I_C=1.0mA$ )          | 0.55 | 0.62 | 0.65 | Vdc |
| $C_{ob}$      | Collector Capacitance<br>( $V_{CB}=6.0Vdc$ , $I_E=0$ , $f=1.0MHz$ ) | ---  | 3.0  | ---  | pF  |
| $f_T$         | Gain Bandwidth product<br>( $V_{CE}=6.0Vdc$ , $I_E=10mA$ )          | ---  | 250  | ---  | MHz |

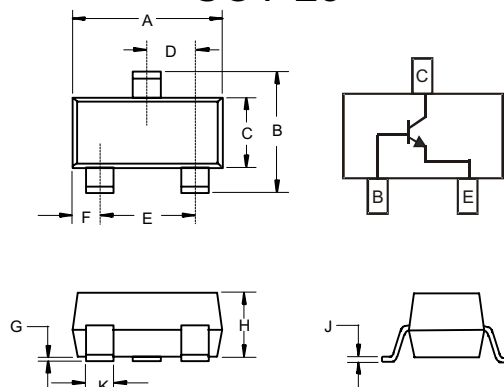
### $h_{FE}$ CLASSIFICATION

| Marking  | L6      | L7      |
|----------|---------|---------|
| $h_{FE}$ | 200-400 | 400-600 |

\* Pulse Test  $PW < 350\mu s$ , duty cycle  $< 2\%$

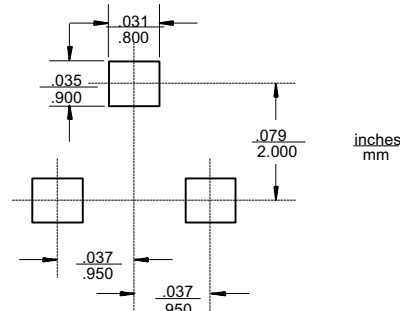
## NPN Silicon Epitaxial Transistors

### SOT-23



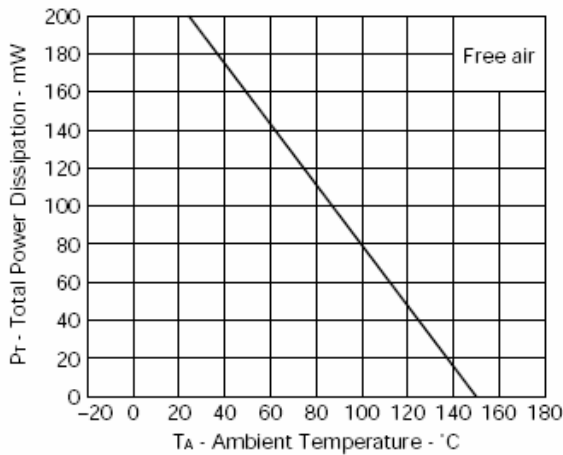
| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | .110   | .120  | 2.80 | 3.04 |      |
| B   | .083   | .098  | 2.10 | 2.64 |      |
| C   | .047   | .055  | 1.20 | 1.40 |      |
| D   | .035   | .041  | .89  | 1.03 |      |
| E   | .070   | .081  | 1.78 | 2.05 |      |
| F   | .018   | .024  | .45  | .60  |      |
| G   | .0005  | .0039 | .013 | .100 |      |
| H   | .035   | .044  | .89  | 1.12 |      |
| J   | .003   | .007  | .085 | .180 |      |
| K   | .015   | .020  | .37  | .51  |      |

### Suggested Solder Pad Layout

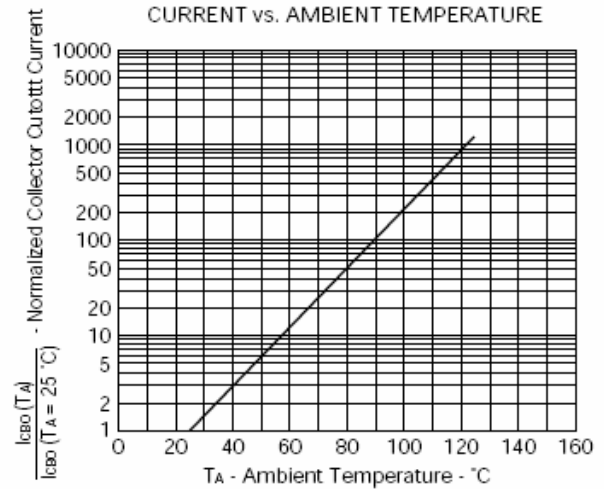


## Typical Characteristics

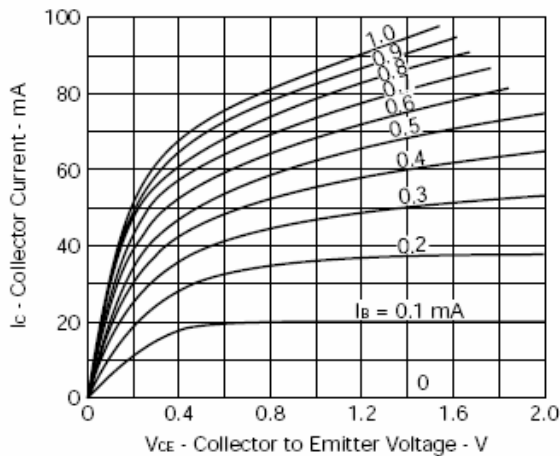
TOTAL POWER DISSIPATION vs.  
AMBIENT TEMPERATURE



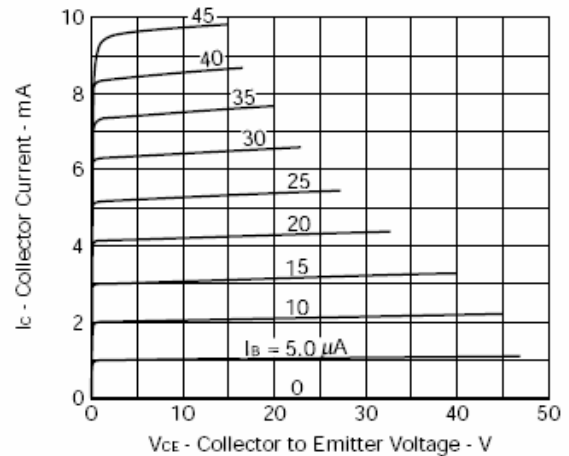
NORMALIZED COLLECTOR CUTOFF  
CURRENT vs. AMBIENT TEMPERATURE



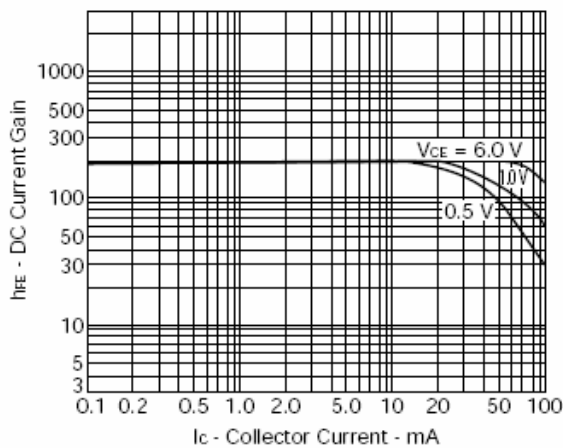
COLLECTOR CURRENT vs.  
COLLECTOR TO EMITTER VOLTAGE



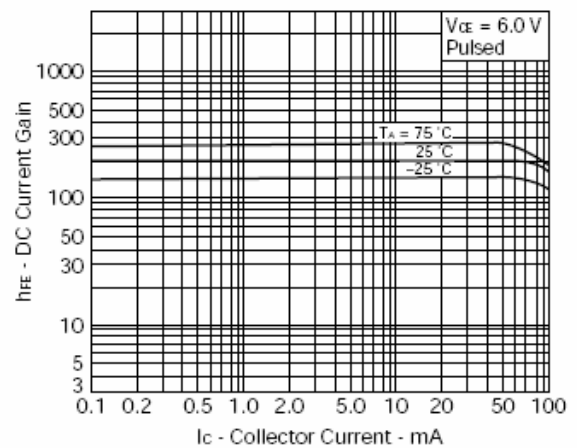
COLLECTOR CURRENT vs.  
COLLECTOR TO EMITTER VOLTAGE



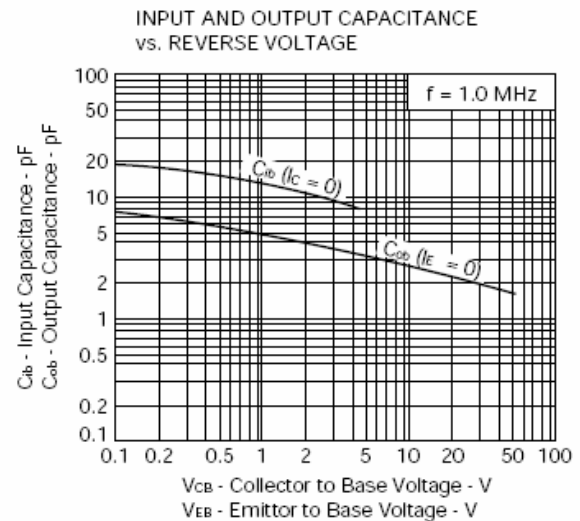
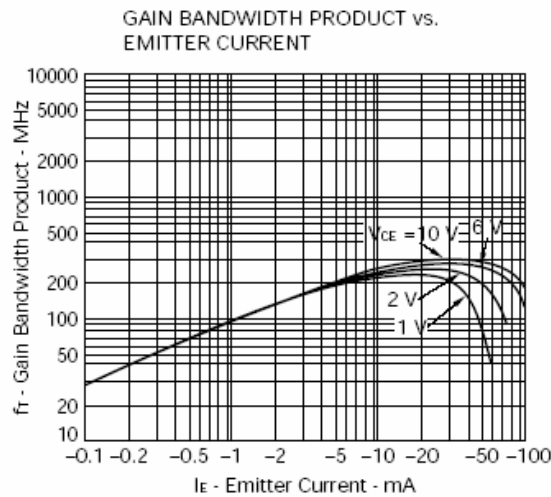
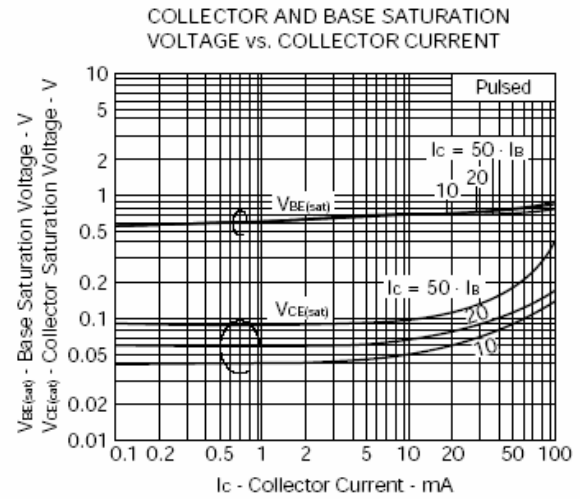
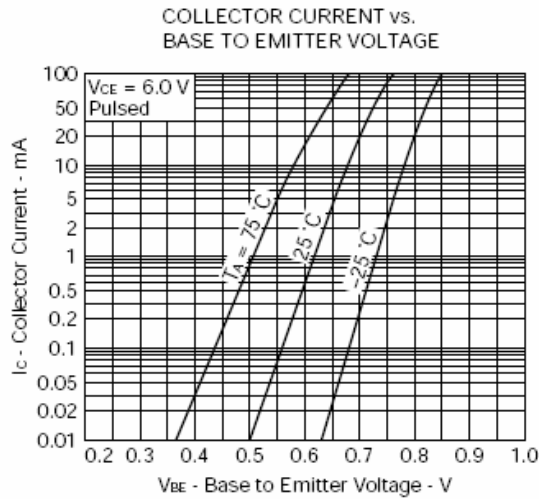
DC CURRENT GAIN vs.  
COLLECTOR CURRENT



DC CURRENT GAIN vs.  
COLLECTOR CURRENT



## Typical Characteristics



Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel; 3Kpcs/Reel |

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