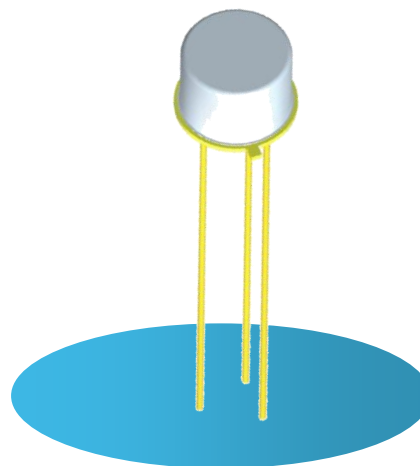


SILICON PNP TRANSISTOR

BCY31A

- $V_{(BR)CEO} = 64V$ (Min).
- Hermetic TO-5 Metal Package.
- Ideally Suited For Industrial Applications & Relay Switching.
- High Reliability and Screening Options Available.



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise stated)

| | | | |
|-----------|------------------------------|---------------------------|------------------------|
| V_{CBO} | Collector – Base Voltage | | -64V |
| V_{CEO} | Collector – Emitter Voltage | | -64V |
| V_{EBO} | Emitter – Base Voltage | | -45V |
| I_C | Continuous Collector Current | | -100mA |
| P_D | Total Power Dissipation at | $T_A = 25^\circ C$ | 600mW |
| | | Derate Above $25^\circ C$ | 4.8mW/ $^\circ C$ |
| T_J | Junction Temperature Range | | -65 to +150 $^\circ C$ |
| T_{stg} | Storage Temperature Range | | -65 to +150 $^\circ C$ |

THERMAL PROPERTIES

| Symbols | Parameters | Max. | Units |
|-----------------|---|--------|--------------|
| $R_{\theta JA}$ | Thermal Resistance, Junction To Ambient | 208.33 | $^\circ C/W$ |

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

SILICON PNP TRANSISTOR



BCY31A

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

| Symbols | Parameters | Test Conditions | Min. | Typ | Max. | Units |
|---------------------|--------------------------------------|--|------|-----|-------|---------------|
| $V_{(BR)CEO}^{(1)}$ | Collector-Emitter Breakdown Voltage | $I_C = -1.0\text{mA}$ $I_B = 0$ | -64 | | | V |
| I_{CBO} | Collector Cut-Off Current | $V_{CB} = -64\text{V}$ $I_E = 0$ | | | -1.4 | μA |
| I_{EBO} | Emitter Cut-Off Current | $V_{EB} = -45\text{V}$ $I_C = 0$ | | | -0.5 | |
| $h_{FE}^{(1)}$ | Forward-current transfer ratio | $I_C = -20\text{mA}$ $V_{CE} = -4.5\text{V}$ | 15 | | 60 | |
| $V_{CE(sat)}^{(1)}$ | Collector-Emitter Saturation Voltage | $I_C = -250\mu\text{A}$ $I_B = -50\mu\text{A}$ | | | -0.17 | V |
| | | $I_C = -20\text{mA}$ $I_B = -3\text{mA}$ | | | -0.55 | |
| $V_{BE(on)}^{(1)}$ | Base-Emitter On Voltage | $I_C = -20\text{mA}$ $V_{CE} = -4.5\text{V}$ | | | -1.45 | |

DYNAMIC CHARACTERISTICS

| | | | | | | |
|-----------|---------------------------|--|----|----|----|-----|
| h_{fe} | Small-Signal Current Gain | $I_C = -1.0\text{mA}$ $V_{CE} = -6\text{V}$ $f = 1.0\text{KHz}$ | 25 | | 60 | |
| f_T | Transition Frequency | $I_C = -1.0\text{mA}$ $V_{CE} = -6\text{V}$ $f = 1.0\text{MHz}$ | | 2 | | MHz |
| C_{obo} | Output Capacitance | $V_{CB} = -6\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$ | | 20 | | pF |

Notes

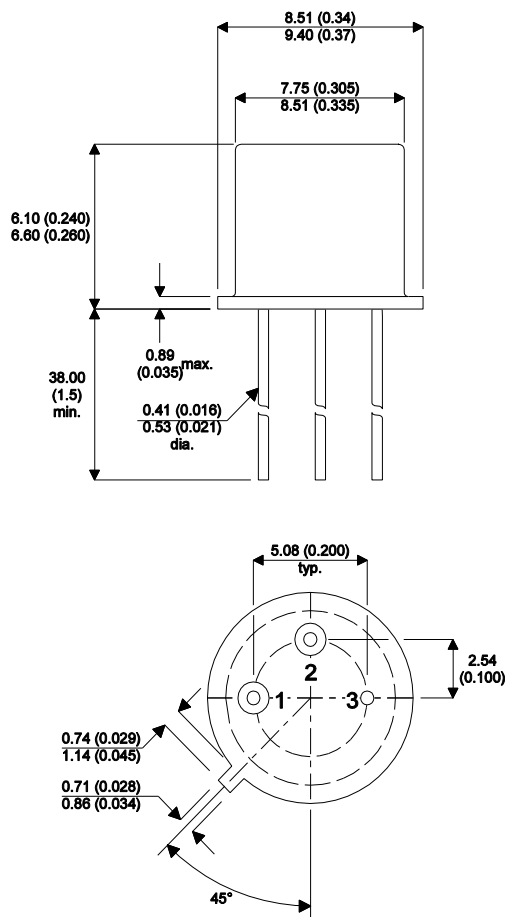
(1) Pulse Width $\leq 380\mu\text{s}$, $\delta \leq 2\%$

SILICON PNP TRANSISTOR

BCY31A

MECHANICAL DATA

Dimensions in mm (inches)



TO-5 (TO-205AA) METAL PACKAGE
Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector

LEAD FINISH / ROHS

| Part Number | Termination Finish ⁽ⁱ⁾ | SML ROHS |
|-------------|-----------------------------------|--------------------|
| BCY31A | Pre-tinned 63% Tin, 37% Lead | LD ⁽ⁱⁱ⁾ |

Notes:

- Other lead finish options available. Specify lead finish requirements at point of order.
- LD = e0 as defined in J-STD-609 2nd Level Interconnect Category.