

BC372, BC373

High Voltage Darlington Transistors

NPN Silicon

Features

- Pb-Free Packages are Available*

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|----------------|-------------|-------------|
| Collector–Emitter Voltage | V_{CEO} | 100 80 | Vdc |
| Collector–Base Voltage | V_{CES} | 100 80 | Vdc |
| Emitter–Base Voltage | V_{EBO} | 12 | Vdc |
| Collector Current – Continuous | I_C | 1.0 | Adc |
| Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $T_A = 25^\circ\text{C}$ | P_D | 625 5.0 | mW mW/°C |
| Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $T_A = 25^\circ\text{C}$ | P_D | 1.5 12 | mW mW/°C |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | -55 to +150 | °C |

THERMAL CHARACTERISTICS

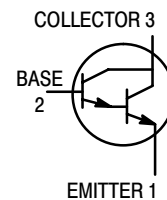
| Characteristic | Symbol | Max | Unit |
|---|-----------------|------|------|
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 200 | °C/W |
| Thermal Resistance, Junction-to-Case | $R_{\theta JC}$ | 83.3 | °C/W |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

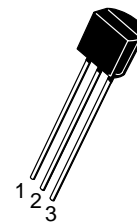


ON Semiconductor®

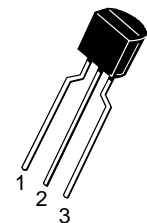
<http://onsemi.com>



TO-92
CASE 29
STYLE 1

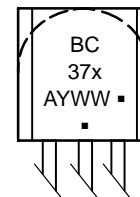


STRAIGHT LEAD
BULK PACK



BENT LEAD
TAPE & REEL
AMMO PACK

MARKING DIAGRAM



- x = 2 or 3
- A = Assembly Location
- Y = Year
- WW = Work Week
- = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|-----------|--------------------|--------------------|
| BC372G | TO-92 (Pb-Free) | 5000 Units / Bulk |
| BC373RL1 | TO-92 | 2000 / Tape & Reel |
| BC373RL1G | TO-92 (Pb-Free) | 2000 / Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

BC372, BC373

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit | |
|--|----------------|----------------------|-----------|--------|------------|------|
| OFF CHARACTERISTICS | | | | | | |
| Collector–Emitter Breakdown Voltage ⁽¹⁾ (I _C = 100 μAdc, I _B = 0) | BC372 BC373 | V _{(BR)CES} | 100 80 | – – | – – | Vdc |
| Collector–Base Breakdown Voltage (I _C = 100 μAdc, I _E = 0) | BC372 BC373 | V _{(BR)CBO} | 100 80 | – – | – – | Vdc |
| Emitter–Base Breakdown Voltage (I _E = 10 μAdc, I _C = 0) | | V _{(BR)EBO} | 12 | – | – | Vdc |
| Collector Cutoff Current (V _{CB} = 80 Vdc, I _E = 0) (V _{CB} = 60 Vdc, I _E = 0) | BC372 BC373 | I _{CBO} | – – | – – | 100 100 | nAdc |
| Emitter Cutoff Current (V _{EB} = 10 V, I _C = 0) | | I _{EBO} | – | – | 100 | nAdc |

ON CHARACTERISTICS (Note 1)

| | | | | | | |
|---|--|----------------------|-----------|--------|----------|-----|
| DC Current Gain (I _C = 250 mAdc, V _{CE} = 5.0 Vdc) (I _C = 100 mAdc, V _{CE} = 5.0 Vdc) | | h _{FE} | 8.0 10 | – – | – 160 | K |
| Collector–Emitter Saturation Voltage (I _C = 250 mAdc, I _B = 0.25 mAdc) | | V _{CE(sat)} | – | 1.0 | 1.1 | Vdc |
| Base–Emitter Saturation Voltage (I _C = 250 mAdc, I _B = 0.25 mAdc) | | V _{BE(sat)} | – | 1.4 | 2.0 | Vdc |

DYNAMIC CHARACTERISTICS

| | | | | | | |
|--|--|-----------------|-----|-----|----|-----|
| Current–Gain Bandwidth Product (I _C = 100 mAdc, V _{CE} = 5.0 Vdc, f = 100 MHz) | | f _T | 100 | 200 | – | MHz |
| Output Capacitance (V _{CB} = 10 Vdc, I _E = 0, f = 1.0 MHz) | | C _{ob} | – | 10 | 25 | pF |
| Noise Figure (I _C = 1.0 mAdc, V _{CE} = 5.0 Vdc, R _g = 100 kΩ, f = 1.0 kHz) | | NF | – | 2.0 | – | dB |

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle 2.0%.

BC372, BC373

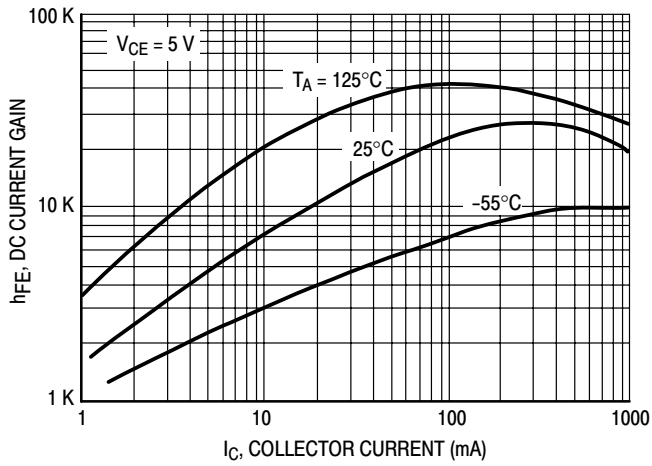


Figure 1. DC Current Gain

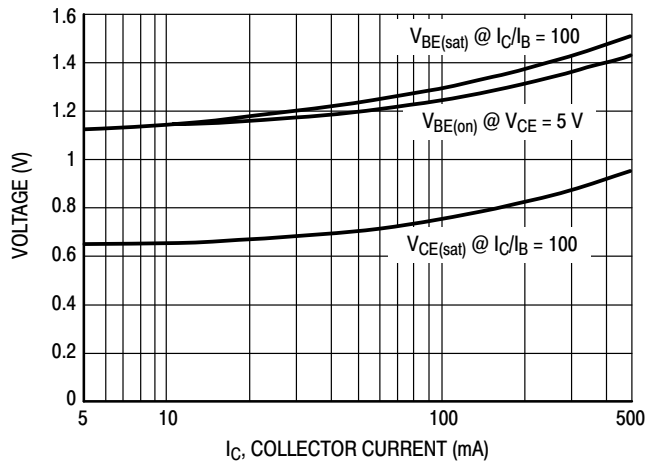


Figure 2. "Saturation" and "On" Voltages

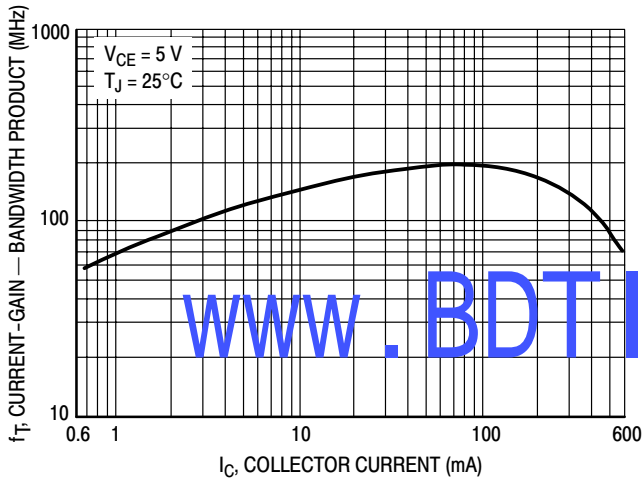


Figure 3. Current-Gain — Bandwidth Product

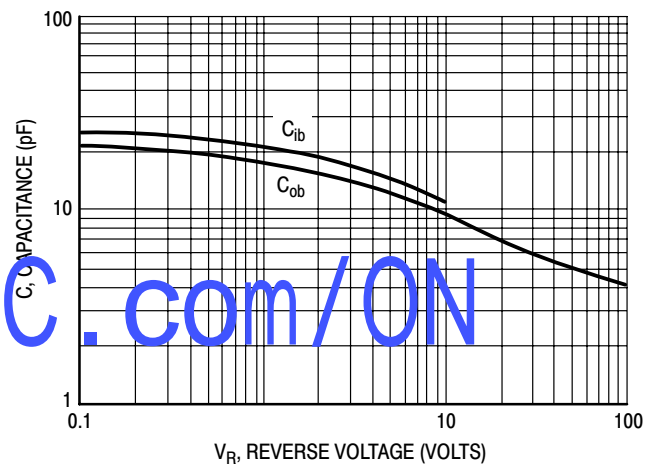
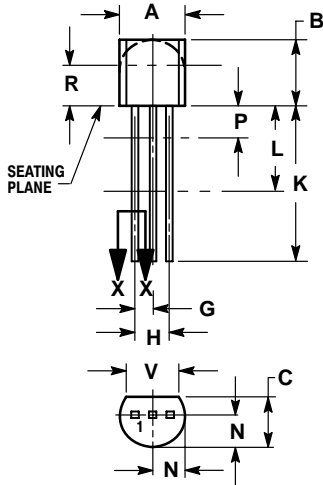


Figure 4. Capacitances

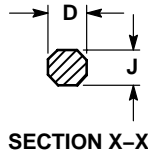
BC372, BC373

PACKAGE DIMENSIONS

TO-92 (TO-226)
CASE 29-11
ISSUE AM



STRAIGHT LEAD
BULK PACK

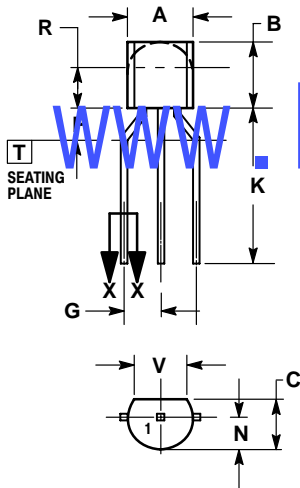


SECTION X-X

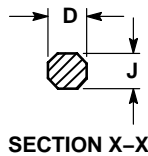
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.175 | 0.205 | 4.45 | 5.20 |
| B | 0.170 | 0.210 | 4.32 | 5.33 |
| C | 0.125 | 0.165 | 3.18 | 4.19 |
| D | 0.016 | 0.021 | 0.407 | 0.533 |
| G | 0.045 | 0.055 | 1.15 | 1.39 |
| H | 0.095 | 0.105 | 2.42 | 2.66 |
| J | 0.015 | 0.020 | 0.39 | 0.50 |
| K | 0.500 | --- | 12.70 | --- |
| L | 0.250 | --- | 6.35 | --- |
| N | 0.080 | 0.105 | 2.04 | 2.66 |
| P | --- | 0.100 | --- | 2.54 |
| R | 0.115 | --- | 2.93 | --- |
| V | 0.135 | --- | 3.43 | --- |



BENT LEAD
TAPE & REEL
AMMO PACK



SECTION X-X

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | MILLIMETERS | |
|-----|-------------|------|
| | MIN | MAX |
| A | 4.45 | 5.20 |
| B | 4.32 | 5.33 |
| C | 3.18 | 4.19 |
| D | 0.40 | 0.54 |
| G | 2.40 | 2.80 |
| J | 0.39 | 0.50 |
| K | 12.70 | --- |
| N | 2.04 | 2.66 |
| P | 1.50 | 4.00 |
| R | 2.93 | --- |
| V | 3.43 | --- |

STYLE 1:

1. EMITTER
2. BASE
3. COLLECTOR

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