BC372, BC373

High Voltage Darlington Transistors

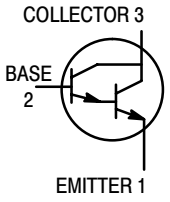
NPN Silicon

ON Semiconductor®

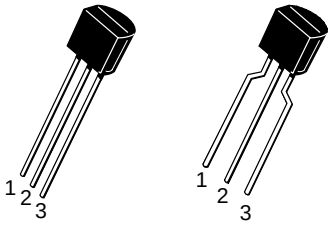
http://onsemi.com

Features

- Pb−Free Packages are Available*



TO−92
CASE 29
STYLE 1



STRAIGHT LEAD
BULK PACK

BENT LEAD
TAPE & REEL
AMMO PACK

MAXIMUM RATINGS

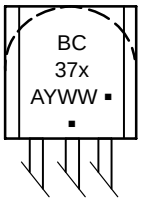
Rating	Symbol	Value	Unit
Collector−Emitter Voltage BC372 BC373	V_{CEO}	 100 80	Vdc
Collector−Base Voltage BC372 BC373	V_{CES}	 100 80	Vdc
Emitter−Base Voltage	V_{EBO}	12	Vdc
Collector Current − Continuous	I_C	1.0	Adc
Total Power Dissipation @ T_A = 25°C Derate above T_A = 25°C	P_D	625 5.0	mW mW/°C
Total Power Dissipation @ T_A = 25°C Derate above T_A = 25°C	P_D	1.5 12	W 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.

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.

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%.

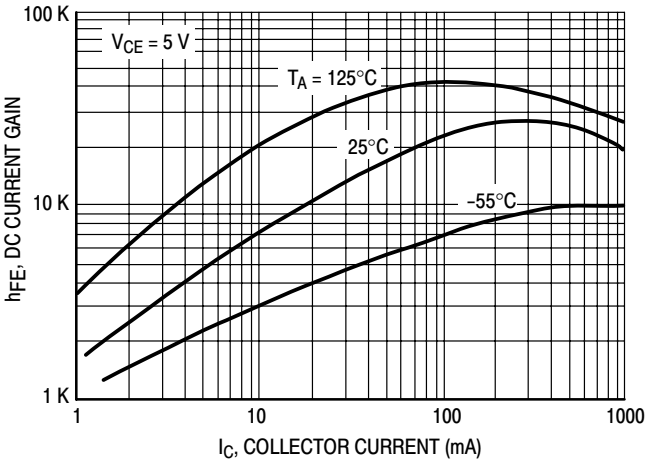


Figure 1. DC Current Gain

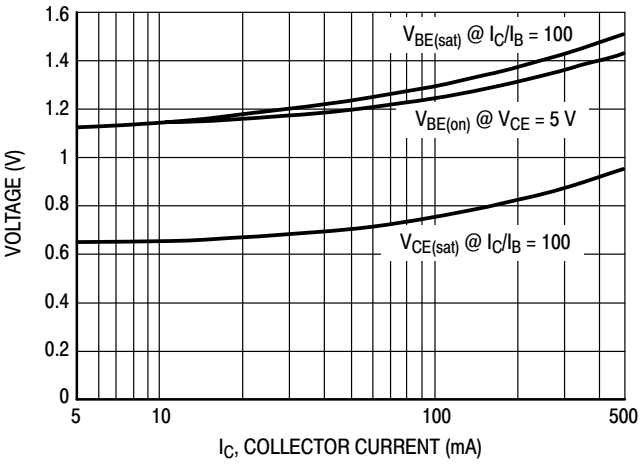


Figure 2. “Saturation” and “On” Voltages

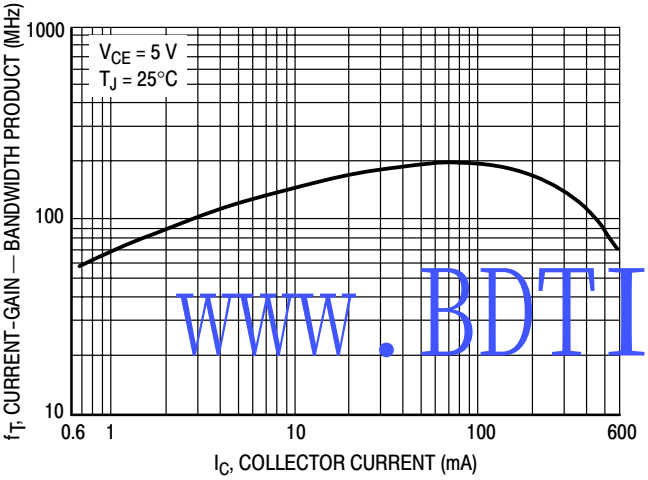


Figure 3. Current−Gain — Bandwidth Product

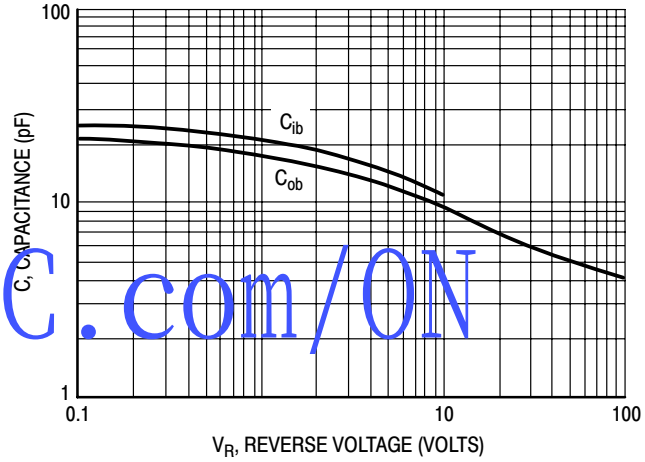
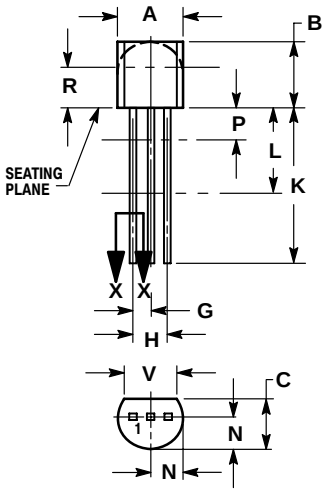


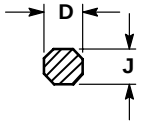
Figure 4. Capacitances

PACKAGE DIMENSIONS

TO−92 (TO−226)
CASE 29−11
ISSUE AM



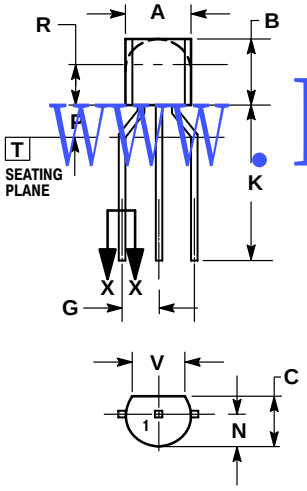
STRAIGHT LEAD
BULK PACK



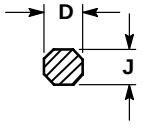
SECTION X−X

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.

	INCHES		MILLIMETERS	
DIM	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.

	MILLIMETERS	
DIM	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:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
Fax: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800−282−9855 Toll Free USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81−3−5773−3850

ON Semiconductor Website: **www.onsemi.com**

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

BC372/D