BC372, BC373

High Voltage Darlington Transistors

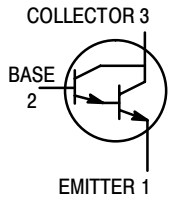
NPN Silicon

ON Semiconductor®

http://onsemi.com

Features

- Pb−Free Packages are Available*



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

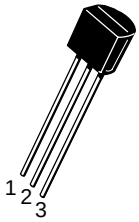
THERMAL CHARACTERISTICS

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

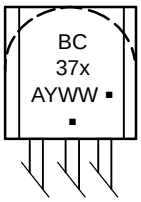
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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

MARKING DIAGRAM



TO−92
CASE 29
STYLE 1



BC37x = Device Code
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†
BC372	TO−92	5000 Units / Bulk
BC372G	TO−92 (Pb−Free)	5000 Units / Bulk
BC373	TO−92	5000 Units / Bulk
BC373G	TO−92 (Pb−Free)	5000 Units / Bulk
BC373RL1	TO−92	2000 / Tape & Reel
BC373RL1G	TO−92 (Pb−Free)	2000 / Tape & Reel
BC373ZL1	TO−92	2000 / Ammo Pack
BC373ZL1G	TO−92 (Pb−Free)	2000 / Ammo Pack

†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.

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%.

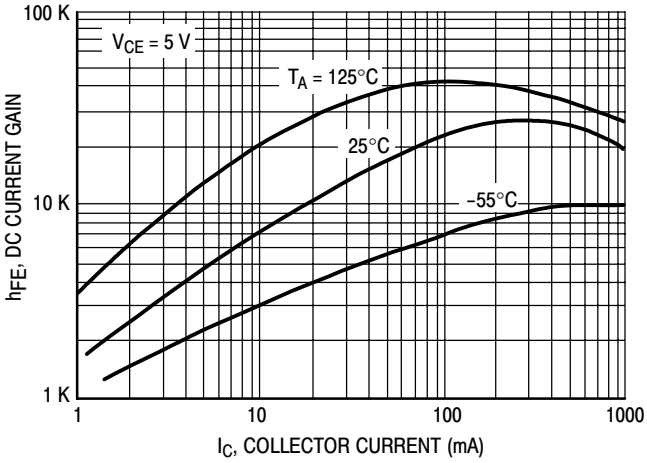


Figure 1. DC Current Gain

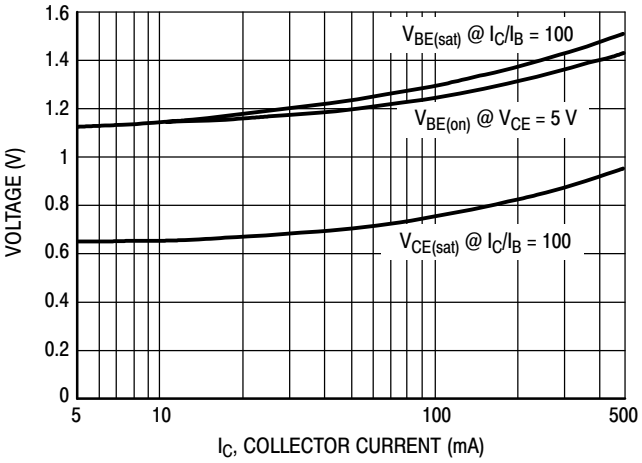


Figure 2. “Saturation” and “On” Voltages

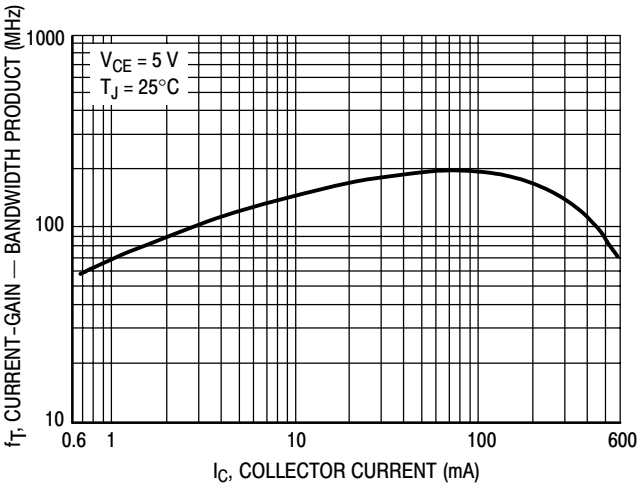


Figure 3. Current−Gain — Bandwidth Product

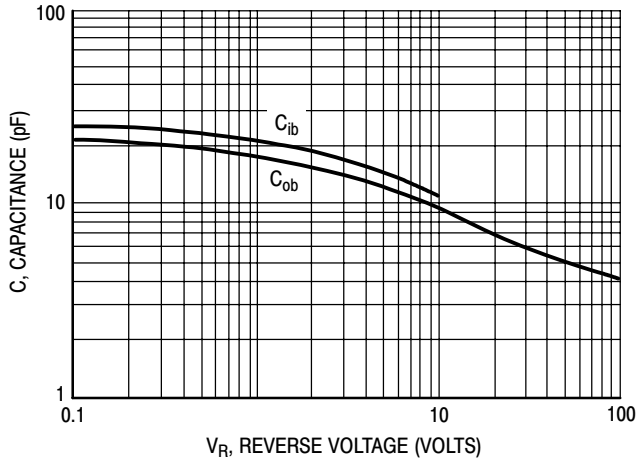
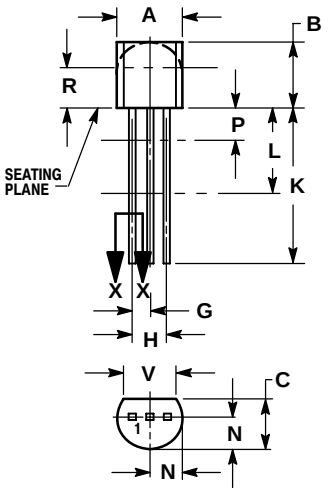
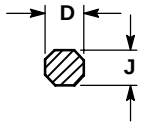


Figure 4. Capacitances

PACKAGE DIMENSIONS

TO−92 (TO−226)
CASE 29−11
ISSUE AL





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	---

STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
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BC372/D