

## BC372, BC373

### High Voltage Darlington Transistors

NPN Silicon

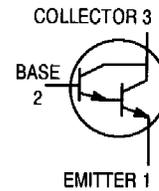
#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	BC372	100	Vdc
	BC373	80	
Collector-Base Voltage	BC372	100	Vdc
	BC373	80	
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	mW
		5.0	mW/ $^\circ\text{C}$
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $T_A = 25^\circ\text{C}$	$P_D$	1.5	W
		12	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

#### THERMAL CHARACTERISTICS

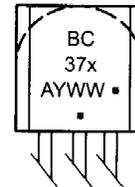
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	200	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	83.3	$^\circ\text{C/W}$

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.

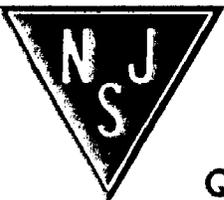


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#### MARKING DIAGRAM



BC37x = Device Code  
 x = 2 or 3  
 A = Assembly Location  
 Y = Year  
 WW = Work Week



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Quality Semi-Conductors

## BC372, BC373

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

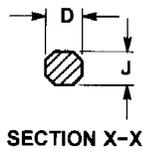
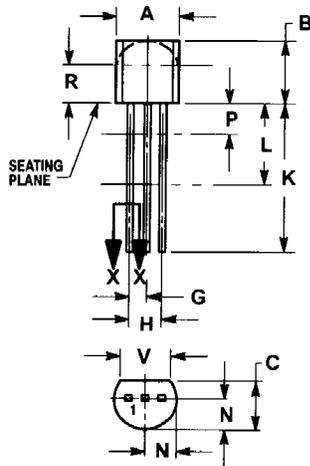
Characteristic	Symbol	Min	Typ	Max	Unit	
<b>OFF CHARACTERISTICS</b>						
Collector - Emitter Breakdown Voltage <sup>(1)</sup> ( $I_C = 100 \mu\text{Adc}$ , $I_B = 0$ )	BC372 BC373	$V_{(BR)CES}$	100 80	- -	- -	Vdc
Collector - Base Breakdown Voltage ( $I_C = 100 \mu\text{Adc}$ , $I_E = 0$ )	BC372 BC373	$V_{(BR)CBO}$	100 80	- -	- -	Vdc
Emitter - Base Breakdown Voltage ( $I_E = 10 \mu\text{Adc}$ , $I_C = 0$ )		$V_{(BR)EBO}$	12	-	-	Vdc
Collector Cutoff Current ( $V_{CB} = 80 \text{ Vdc}$ , $I_E = 0$ ) ( $V_{CB} = 60 \text{ Vdc}$ , $I_E = 0$ )	BC372 BC373	$I_{CBO}$	- -	- -	100 100	nAdc
Emitter Cutoff Current ( $V_{EB} = 10 \text{ V}$ , $I_C = 0$ )		$I_{EBO}$	-	-	100	nAdc
<b>ON CHARACTERISTICS (Note 1)</b>						
DC Current Gain ( $I_C = 250 \text{ mAdc}$ , $V_{CE} = 5.0 \text{ Vdc}$ ) ( $I_C = 100 \text{ mAdc}$ , $V_{CE} = 5.0 \text{ Vdc}$ )		$h_{FE}$	8.0 10	- -	- 160	K
Collector - Emitter Saturation Voltage ( $I_C = 250 \text{ mAdc}$ , $I_B = 0.25 \text{ mAdc}$ )		$V_{CE(sat)}$	-	1.0	1.1	Vdc
Base - Emitter Saturation Voltage ( $I_C = 250 \text{ mAdc}$ , $I_B = 0.25 \text{ mAdc}$ )		$V_{BE(sat)}$	-	1.4	2.0	Vdc
<b>DYNAMIC CHARACTERISTICS</b>						
Current-Gain Bandwidth Product ( $I_C = 100 \text{ mAdc}$ , $V_{CE} = 5.0 \text{ Vdc}$ , $f = 100 \text{ MHz}$ )		$f_T$	100	200	-	MHz
Output Capacitance ( $V_{CB} = 10 \text{ Vdc}$ , $I_E = 0$ , $f = 1.0 \text{ MHz}$ )		$C_{ob}$	-	10	25	pF
Noise Figure ( $I_C = 1.0 \text{ mAdc}$ , $V_{CE} = 5.0 \text{ Vdc}$ , $R_g = 100 \text{ k}\Omega$ , $f = 1.0 \text{ kHz}$ )		NF	-	2.0	-	dB

1. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle 2.0%.

# BC372, BC373

## PACKAGE DIMENSIONS

TO-92 (TO-226)



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	---

STYLE 1:

1. EMITTER
2. BASE
3. COLLECTOR