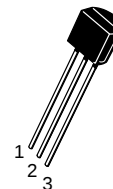
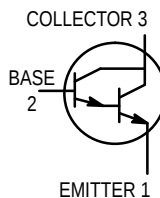


High Voltage Darlington Transistors

NPN Silicon

BC372
BC373



CASE 29-04, STYLE 1
TO-92 (TO-226AA)

MAXIMUM RATINGS

Rating	Symbol	BC372	BC373	Unit
Collector–Emitter Voltage	V_{CES}	100	80	Vdc
Collector–Base Voltage	V_{CBO}	100	80	Vdc
Emitter–Base Voltage	V_{EBO}	12		Vdc
Collector Current — Continuous	I_C	1.0		Adc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625	5.0	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5	12	Watt 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	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	$^\circ\text{C}/\text{W}$

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ⁽¹⁾ ($I_C = 100 \mu\text{Adc}$, $I_E = 0$)	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

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

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

Characteristic	Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS⁽¹⁾					
DC Current Gain ($I_C = 250\text{ mA dc}$, $V_{CE} = 5.0\text{ V dc}$) ($I_C = 100\text{ mA dc}$, $V_{CE} = 5.0\text{ V dc}$)	h_{FE}	8.0 10	— —	— 160	K
Collector–Emitter Saturation Voltage ($I_C = 250\text{ mA dc}$, $I_B = 0.25\text{ mA dc}$)	$V_{CE(sat)}$	—	1.0	1.1	Vdc
Base–Emitter Saturation Voltage ($I_C = 250\text{ mA dc}$, $I_B = 0.25\text{ mA dc}$)	$V_{BE(sat)}$	—	1.4	2.0	Vdc
DYNAMIC CHARACTERISTICS					
Current–Gain Bandwidth Product ($I_C = 100\text{ mA dc}$, $V_{CE} = 5.0\text{ V dc}$, $f = 100\text{ MHz}$)	f_T	100	200	—	MHz
Output Capacitance ($V_{CB} = 10\text{ V dc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{ob}	—	10	25	pF
Noise Figure ($I_C = 1.0\text{ mA dc}$, $V_{CE} = 5.0\text{ V dc}$, $R_G = 100\text{ k ohm}$, $f = 1.0\text{ kHz}$)	NF	—	2.0	—	dB

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

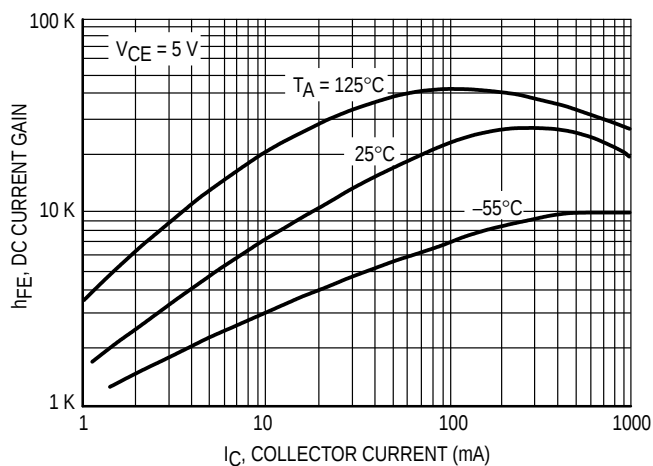


Figure 1. DC Current Gain

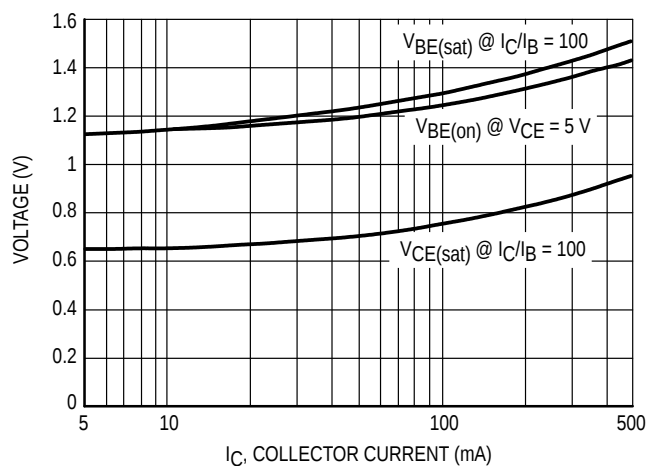


Figure 2. "Saturation" and "On" Voltages

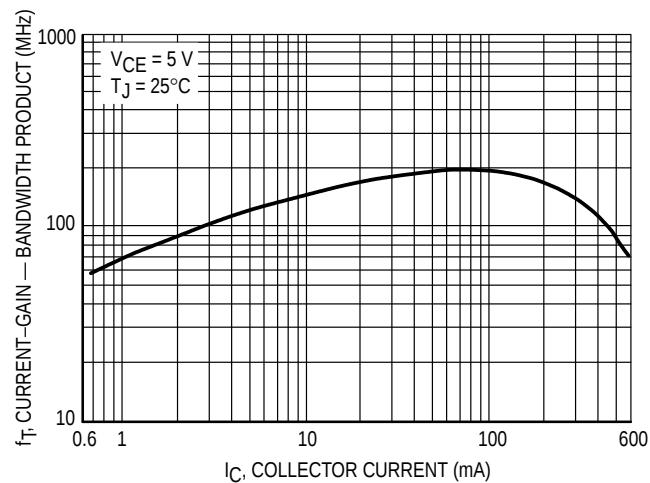


Figure 3. Current–Gain — Bandwidth Product

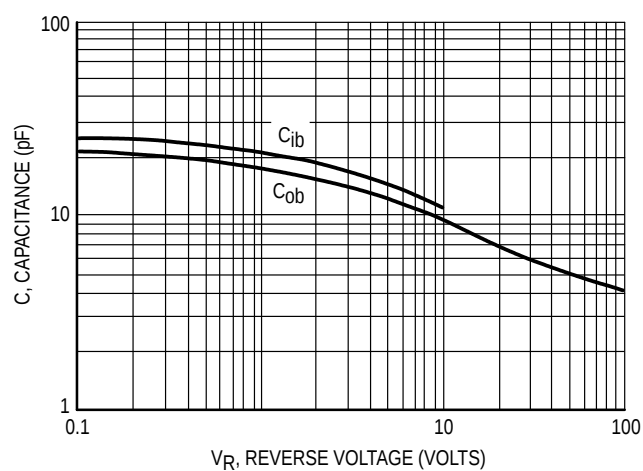
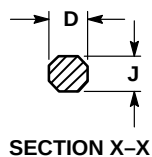
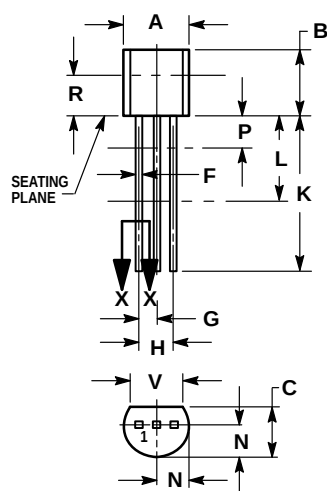


Figure 4. Capacitances

PACKAGE DIMENSIONS



**CASE 029-04
(TO-226AA)
ISSUE AD**

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSION D AND J APPLY BETWEEN L AND K. MINIMUM 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	0.022	0.41	0.55
F	0.016	0.019	0.41	0.48
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

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