

**MAXIMUM RATINGS**

Rating	Symbol	BC 617	BC 618	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	40	55	V <sub>dc</sub>
Collector-Base Voltage	V <sub>CBO</sub>	50	80	V <sub>dc</sub>
Emitter-Base Voltage	V <sub>EBO</sub>	12		V <sub>dc</sub>
Collector Current - Continuous	I <sub>C</sub>	1.0		A <sub>dc</sub>
Total Device Dissipation @ T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	625	5.0	mW mW/°C
Total Device Dissipation @ T <sub>C</sub> = 25°C Derate above 25°C	P <sub>D</sub>	1.5	12	Watt mW/°C
Operating and Storage Junction Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150		°C

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	83.3	°C/W
Thermal Resistance, Junction to Ambient	R <sub>θJC</sub>	200	°C/W

# BC617 BC618

CASE 29-02, STYLE 17  
TO-92 (TO-226AA)

**DARLINGTON TRANSISTORS**

**NPN SILICON**

Refer to 2N6426 for graphs.

**ELECTRICAL CHARACTERISTICS** (T<sub>A</sub> = 25 °C unless otherwise noted)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Breakdown Voltage (I <sub>C</sub> = 10 mA <sub>dc</sub> , V <sub>BE</sub> = 0)	BC617 BC618	V <sub>(BR)CEO</sub>	40 55	— —	V <sub>dc</sub>
Collector-Base Breakdown Voltage (I <sub>C</sub> = 100 μA <sub>dc</sub> , I <sub>E</sub> = 0)	BC617 BC618	V <sub>(BR)CBO</sub>	50 80	— —	V <sub>dc</sub>
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 10 μA <sub>dc</sub> , I <sub>C</sub> = 0)	Both Types	V <sub>(BR)EBO</sub>	12	—	V <sub>dc</sub>
Collector Cutoff Current (V <sub>CE</sub> = 40 V <sub>dc</sub> , V <sub>BE</sub> = 0) (V <sub>CE</sub> = 60 V <sub>dc</sub> , V <sub>BE</sub> = 0)	BC617 BC618	I <sub>CES</sub>	— —	50 50	nA <sub>dc</sub>
Collector Cutoff Current (V <sub>CB</sub> = 40 V <sub>dc</sub> , I <sub>E</sub> = 0) (V <sub>CB</sub> = 60 V <sub>dc</sub> , I <sub>E</sub> = 0)	BC617 BC618	I <sub>CBO</sub>	— —	50 50	nA <sub>dc</sub>
Emitter Cutoff Current (V <sub>BE</sub> = 10 V <sub>dc</sub> , I <sub>C</sub> = 0)	Both Types	I <sub>EBO</sub>	—	50	nA <sub>dc</sub>
<b>ON CHARACTERISTICS</b>					
Collector-Emitter Saturation Voltage (I <sub>C</sub> = 200 mA) (I <sub>B</sub> = 0.2 mA)	Both Types	V <sub>CE(sat)</sub>		1.1	V
Base-Emitter Saturation Voltage (I <sub>C</sub> = 200 mA) (I <sub>B</sub> = 0.2 mA)	Both Types	V <sub>BE(sat)</sub>		1.6	V
Current Gain (I <sub>C</sub> = 100 μA, V <sub>CE</sub> = 5 V) (I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 5 V) (I <sub>C</sub> = 200 mA, V <sub>CE</sub> = 5 V) (I <sub>C</sub> = 1 A, V <sub>CE</sub> = 5 V)	BC617 BC618 BC617 BC618 BC617 BC618 BC617 BC618	h <sub>FE</sub>	4000 2000 10000 4000 20000 10000 10000 4000	70000 50000	
<b>DYNAMIC CHARACTERISTICS</b>					
Current gain - Bandwidth product (I <sub>C</sub> = 500 mA, V <sub>CE</sub> = 5 V) (P = 100 MHz)	Both Types	f <sub>T</sub>	150		MHz
Output Capacitance (V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, P = 1 MHz)		C <sub>ob</sub>		4.5	pF