

MAXIMUM RATINGS

Rating	Symbol	BDC 01A	BDC 01B	BDC 01C	BDC 01D	Unit
Collector-Emitter Voltage	V_{CEO}	45	60	80	100	Vdc
Collector-Base Voltage	V_{CBO}	45	60	80	100	Vdc
Emitter-Base Voltage	V_{EBO}	5.0				Vdc
Collector Current – Continuous	I_C	1.5				Adc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0 8.0				Watt mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	2.5 20				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 Case	$R_{\theta JC}$	50	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	125	$^\circ\text{C/W}$

BDC01A Thru BDC01D

CASE 29-03, STYLE 14
TO-92 (TO-226AE)

ONE WATT
AMPLIFIER TRANSISTORS

NPN SILICON

Refer to BDB01A for graphs.

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

Characteristic	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Collector-Emitter Voltage ($I_C = 10\text{ mA}$, $I_B = 0$) BDC01A BDC01B BDC01C BDC01D	$V_{(BR)CEO}$	45 60 80 100		Vdc
Collector Cutoff Current ($V_{CB} = 45\text{ V}$, $I_E = 0$) ($V_{CB} = 60\text{ V}$, $I_E = 0$) ($V_{CB} = 80\text{ V}$, $I_E = 0$) ($V_{CB} = 100\text{ V}$, $I_E = 0$)	I_{CBO}		0.1 0.1 0.1 0.1	μAdc
Emitter Cutoff Current ($I_C = 0$, $V_{EB} = 5.0\text{ V}$)	I_{EBO}		100	nAdc
ON CHARACTERISTICS				
DC Current Gain ($I_C = 100\text{ mA}$, $V_{CE} = 1\text{ V}$) ($I_C = 500\text{ mA}$, $V_{CE} = 2\text{ V}$)	h_{FE}	40 25	400	
Collector-Emitter Saturation Voltage ($I_C = 1000\text{ mA}$, $I_B = 100\text{ mA}$)	$V_{CE(sat)}$		0.7	Vdc
Collector-Emitter on-Voltage ($I_C = 1000\text{ mA}$, $V_{CE} = 1\text{ V}$)	$V_{BE(on)}$		1.2	Vdc
DYNAMIC CHARACTERISTICS				
Current Gain Bandwidth Product ($I_C = 200\text{ mA}$, $V_{CE} = 5\text{ V}$, $f = 100\text{ MHz}$)	f_T	50		MHz
Output Capacitance ($V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$)	C_{ob}		30	pF