

BDC06 BDC08

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

HIGH VOLTAGE TRANSISTORS

PNP SILICON

MAXIMUM RATINGS

Rating	Symbol	BDC 06	BDC 08	Unit
Collector-Emitter Voltage	V_{CE0}	300	250	Vdc
Collector-Base Voltage	V_{CB0}	300	250	Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
Collector Current – Continuous	I_C	500		mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	1 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	$^\circ\text{C/W}$

Refer to MPSW92 for graphs.

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

Characteristic		Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (1) ($I_C = 1 \text{ mAdc}, I_B = 0$)	BDC06 BDC08	$V_{(BR)CEO}$	300 250	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 100 \mu\text{Adc}, I_E = 0$)	BDC06 BDC08	$V_{(BR)CBO}$	300 250	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 100 \mu\text{Adc}, I_C = 0$)	BDC06 BDC08	$V_{(BR)EBO}$	5.0 5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 200 \text{ Vdc}, I_E = 0$)	BDC06 BDC08	I_{CBO}	—	0.01	μAdc
Emitter Cutoff Current ($V_{BE} = 5.0 \text{ Vdc}, I_C = 0$)	BDC06 BDC08	I_{EBO}	—	10	μAdc

ON CHARACTERISTICS

DC Current Gain ($I_C = 25 \text{ mA}, V_{CE} = 20 \text{ Vdc}$)	BDC06 BDC08	h_{FE}	40 50	— —	—
Collector-Emitter Saturation Voltage ($I_C = 20 \text{ mAdc}, I_B = 2.0 \text{ mAdc}$)		$V_{CE(sat)}$		2	Vdc
Base-Emitter Saturation Voltage ($I_C = 20 \text{ mA}, I_B = 2.0 \text{ mA}$)		$V_{BE(sat)}$		2.0	Vdc

DYNAMIC CHARACTERISTICS

Current Gain–Bandwidth Product ($I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 50 \text{ MHz}$)		f_T	60	—	MHz
Collector-Base Capacitance ($V_{CB} = 30 \text{ Vdc}, I_E = 0, f = 1.0 \text{ MHz}$)		C_{re}		2.8	pF

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