BC485
BC487
BC489

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

HIGH CURRENT TRANSISTORS

NPN SILICON

Refer to MPSA05 for graphs.

MAXIMUM RATINGS

Rating	Symbol	BC 485	BC 487	BC 489	Unit
Collector-Emitter Voltage	V_{CEO}	45	60	80	Vdc
Collector-Base Voltage	V_{CBO}	45	60	80	Vdc
Emitter-Base Voltage	V_{EBO}		5.0		Vdc
Collector Current − Continuous	I_C		1.0		Adc
Total Device Dissipation @ $T_A = 25°C$ Derate above 25°C	P_D		625 5.0		mW mW/°C
Total Device Dissipation @ $T_C = 25°C$ Derate above 25°C	P_D		1.5 12		Watt mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}		− 55 to +150		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JC}$	200	°C/W

ELECTRICAL CHARACTERISTICS ($T_A = 25°C$ unless otherwise noted)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					

Collector-Emitter Breakdown Voltage*
($I_C = 10$ mAdc, $I_B = 0$)   BC485
    BC487
    BC489
	$V_{(BR)CEO}$	45
		60
		80
			—
			—
			—
				—
				—
				—
					Vdc

Collector-Base Breakdown Voltage
($I_C = 100$ µAdc, $I_E = 0$)   BC485
    BC487
    BC489
	$V_{(BR)CBO}$	45
		60
		80
			—
			—
			—
				—
				—
				—
					Vdc

Emitter-Base Breakdown Voltage ($I_E = 10$ µAdc, $I_C = 0$)	$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current $V_{CB} = 30$ Vdc − $I_E = 0$ BC485 $V_{CB} = 40$ Vdc − $I_E = 0$ BC487 $V_{CB} = 60$ Vdc − $I_E = 0$ BC489	I_{CBO}	— — —	— — —	100 100 100	nAdc
ON CHARACTERISTICS*					

DC Current Gain
($I_C = 10$ mAdc − $V_{CE} = 2.0$ Vdc)
($I_C = 100$ mAdc − $V_{CE} = 2.0$ Vdc)
    full range
    − L
    − A
    − B
($I_C = 1$ Adc − $V_{CE} = 5.0$ Vdc)
	h_{FE}	40
		
		60
		60
		100
		160
		15
			
			120
			160
			260
				
				400
				150
				250
				400	

Collector Emitter Saturation Voltage ($I_C = 500$ mAdc − $I_B = 50$ mAdc) ($I_C = 1$ Adc − $I_B = 100$ mAdc)	$V_{CE(sat)}$	— —	0.2 0.3	0.50 —	Vdc
Base Emitter Saturation Voltage ($I_C = 500$ mAdc, $I_B = 50$ mAdc) ($I_C = 1$ Adc − $I_B = 100$ mAdc)	$V_{BE(sat)}$	— 	0.85 0.90	1.20 	Vdc
DYNAMIC CHARACTERISTICS					
Current-Gain-Bandwidth Product ($I_C = 50$ mAdc, $V_{CE} = 2.0$ Vdc, f = 100 MHz)	f_T	—	200	—	MHz
Output Capacitance ($V_{CB} = 10$ Vdc, $I_E = 0$, f = 1.0 MHz)	C_{ob}	—	7	—	pF
Input Capacitance ($V_{BE} = 0.5$ Vdc, $I_C = 0$, f = 1.0 MHz)	C_{ib}	—	50	—	pF

* Pulse test - Pulse width = 300 µs - Duty Cycle 2%.