

**BD185
BD187
BD189**

**4 AMPERE
POWER TRANSISTOR**
NPN SILICON
30, 45, 60 VOLTS
40 WATTS

**PLASTIC MEDIUM POWER
SILICON NPN TRANSISTOR**

... designed for use in 5 to 10 Watt audio amplifiers utilizing complementary or quasi complementary circuits.

- DC Current Gain— $h_{FE} = 40$ (Min) @ $I_C = 0.5$ Adc
- BD 185, 187, 189 are complementary with BD 186, 188, 190

MAXIMUM RANGES

Rating	Symbol	Type	Value	Unit
Collector-Emitter Voltage	V_{CEO}	BD 185	30	Vdc
		BD 187	45	
		BD 189	60	
Collector-Base Voltage*	V_{CBO}	BD 185	40	Vdc
		BD 187	65	
		BD 189	70	
Emitter-Base Voltage	V_{EBO}		5	Vdc
Collector Current	I_C		4.0	Adc
Base Current	I_B		2.0	Adc
Total Device Dissipation Derate above 25°C	P_D		40 320	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}		-65 to +150	°C

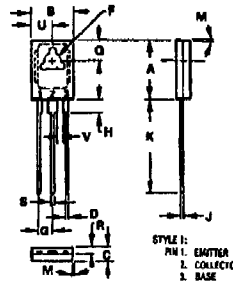
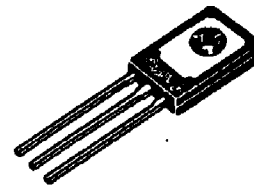
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	3.12	°C/W

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

Characteristic	Symbol	Type	Min	Max	Unit
Collector-Emitter Sustaining Voltage* ($I_C = 0.1$ Adc, $I_B = 0$)	BV_{CEO}	BD 185 BD 187 BD 189	30 45 60	—	Vdc
Collector Cutoff Current ($V_{CB} = 40$ Vdc, $I_E = 0$) ($V_{CB} = 65$ Vdc, $I_E = 0$) ($V_{CB} = 70$ Vdc, $I_E = 0$)	I_{CBO}	BD 185 BD 187 BD 189	— — —	0.1 0.1 0.1	mA
Emitter Cutoff Current ($V_{BE} = 5.0$ Vdc, $I_C = 0$)	I_{EBO}		—	1.0	mA
DC current Gain ($I_C = 0.5$ A, $V_{CE} = 2$ V) ($I_C = 2$ A, $V_{CE} = 2$ V)	h_{FE}		40 15	—	—
Collector-Emitter Saturation Voltage* ($I_C = 2$ Adc, $I_B = 0.2$ Adc)	$V_{CE(sat)}$		—	1.0	Vdc
Base-Emitter On Voltage* ($I_C = 2$ Adc, $V_{CE} = 2.0$ Vdc)	$V_{BE(on)}$		—	1.5	Vdc
Current-Gain-Bandwidth Product ($I_C = 1.0$ Adc, $V_{CE} = 10$ Vdc, $f = 1.0$ MHz)	f_T		2.0	—	MHz

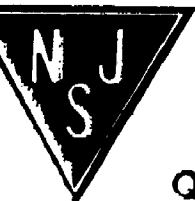
* Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.



NOTES
1. W = MAIN TERMINAL
2. LEADS TRUE POSITIONED WITHIN 0.25mm (0.010") DIA TO DIM A & B AT MAXIMUM MATERIAL CONDITION

DIM	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	10.00	11.00	0.400	0.430
B	7.60	7.75	0.300	0.306
C	2.10	2.20	0.080	0.088
D	0.51	0.50	0.020	0.020
E	2.50	3.17	0.115	0.125
F	2.27	2.26	0.091	0.087
G	1.27	3.21	0.050	0.126
H	0.20	0.20	0.010	0.010
J	0.20	0.20	0.010	0.010
K	14.50	14.50	0.575	0.580
M	P.T.P.		P.T.P.	
N	3.18	4.81	0.126	0.190
P	1.75	1.75	0.070	0.070
Q	0.40	0.50	0.016	0.020
U	3.00	3.00	0.118	0.118
V	1.62	—	0.064	—

CASE 77-05
TO-126



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