T-33-17

MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

BD526
BD528
BD530

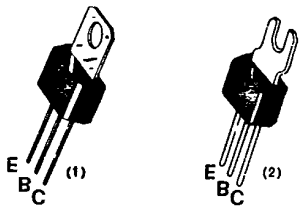
PNP SILICON ANNULAR♦ AMPLIFIER TRANSISTORS

. . . designed for general-purpose, high-voltage amplifier and driver applications.

- High Collector-Emitter Breakdown Voltage —
  BV_{CEO} = 60 Vdc (Min) @ I_C = 1.0 mAdc — BD526
  80 Vdc (Min) @ I_C = 1.0 mAdc — BD528
  100 Vdc (Min) @ I_C = 1.0 mAdc — BD530
- High Power Dissipation — P_D = 10 W @ T_C = 25°C
- Complements to NPN BD525, BD527 BD529

PNP SILICON AMPLIFIER TRANSISTORS

60 - 80 - 100 VOLTS
10 WATTS



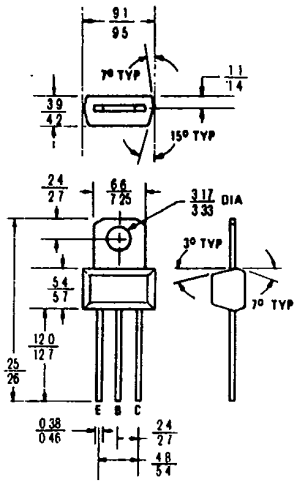
(1) **Standard package: BD526, 528, 530**
(2) Tab formed for flat mounting BD526-1, 528-1, 530-1
Also available with leads formed to TO-5 configuration BD526-5, 528-5, 530-5

MAXIMUM RATINGS

Rating	Symbol	BD526	BD528	BD530	Unit
Collector Emitter Voltage	V_{CEO}	60	80	100	Vdc
Collector-Base Voltage	V_{CB}	60	80	100	Vdc
Emitter Base Voltage	V_{EB}	— 4.0 —			Vdc
Collector Current Continuous	I_C	— 2.0 —			Adc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	1.0 8.0			Watt mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	10 80			Watts 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	θ_{JC}	12.5	°C/W
Thermal Resistance, Junction to Ambient	θ_{JA}	125	°C/W



All dimensions in millimeters
Collector connected to tab

CASE 152

3

BD526, BD528, BD530

T-33-17

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage (I_C = 1.0 mAdc, I_B = 0)	BD526	BV_{CEO}	60	—	—	Vdc
	BD528		80	—	—	
	BD530		100	—	—	
Emitter-Base Breakdown Voltage (I_E = 100 μAdc, I_C = 0)		BV_{EBO}	4.0	—	—	Vdc
Collector Cutoff Current						nAdc
(V_{CB} = 40 Vdc, I_E = 0)	BD526	I_{CBO}	—	—	100	
(V_{CB} = 60 Vdc, I_E = 0)	BD528		—	—	100	
(V_{CB} = 80 Vdc, I_E = 0)	BD530		—	—	100	
ON CHARACTERISTICS						
DC Current Gain (1)		h_{FE}				—
(I_C = 50 mAdc, V_{CE} = 2.0 Vdc)			60	153	—	
(I_C = 250 mAdc, V_{CE} = 2.0 Vdc)			30	98	—	
Collector-Emitter Saturation Voltage(1)		$V_{CE(sat)}$				Vdc
(I_C = 250 mAdc, I_B = 10 mAdc)			—	0.22	0.5	
(I_C = 250 mAdc, I_B = 25 mAdc)			—	0.15	—	
Base-Emitter On Voltage (1) (I_C = 250 mAdc, V_{CE} = 5.0 Vdc)		$V_{BE(on)}$	—	0.78	1.0	Vdc
SMALL-SIGNAL CHARACTERISTICS						
Current-Gain--Bandwidth Product (I_C = 200 mAdc, V_{CE} = 5.0 Vdc, f = 100 MHz)		f_T	50	100	—	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz)		C_{ob}	—	10	15	pF

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%

FIGURE 1 - DC CURRENT GAIN

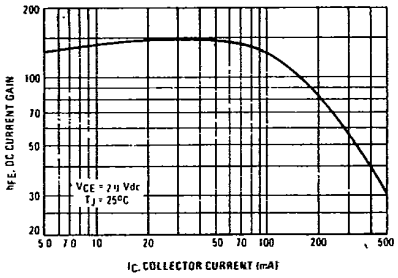


FIGURE 2 — "ON" VOLTAGES

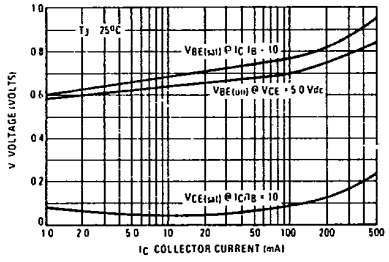


FIGURE 3 DC SAFE OPERATING AREA

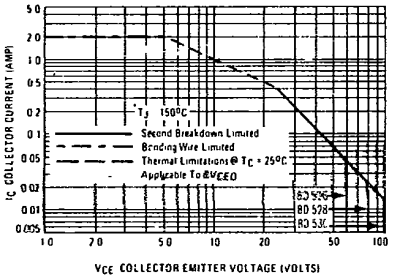
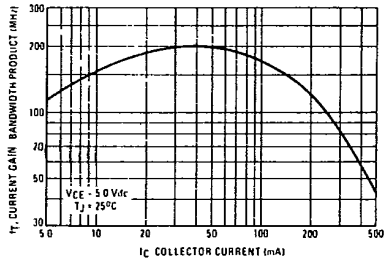


FIGURE 4 — CURRENT-GAIN--BANDWIDTH PRODUCT



There are two limitations on the power handling ability of a transistor junction temperature and secondary breakdown. Safe operating area curves indicate I_C — V_{CE} limits of the transistor that must be observed for reliable operation, i.e., the transistor must not be subjected to greater dissipation than the curves indicate.

The data of Figure 3 is based on $T_{J(pk)}$ = 150°C; T_C is variable depending on conditions. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by secondary breakdown.