

8-Ampere N-P-N Darlington Power Transistors

45-60-80-100-Volts, 70 Watts

Gain of 750 at 4 A
(BD895A, BD897A, BD899A)

Gain of 750 at 3 A
(BD895, BD897, BD899, BD901)

Features:

- Operated from IC without predriver
- Low Leakage at high temperature

Applications:

- Power Switching
- Hammer drivers
- Series and shunt regulators
- Audio amplifiers

The BD895, BD645, BD895A, BD897, BD897A, BD899, BD899A, and BD901 are monolithic silicon n-p-n Darlington transistors designed for low and medium-frequency power applications. The high gain of these devices makes it possible for them to be driven directly from integrated circuits.

These devices are supplied in the JEDEC TO 220AB (VERSAWATT) plastic package.

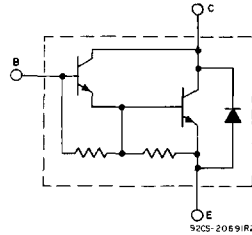
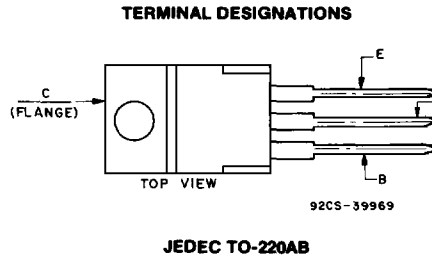


Fig. 1—Schematic diagram for all types.

MAXIMUM RATINGS, Absolute-Maximum Values:

	BD895 BD895A	BD897 BD897A	BD899 BD899A	BD901 —	
V _{CB0}	45	60	80	100	V
V _{CEO(sus)}	45	60	80	100	V
V _{EBO}	5				V
I _C	8				A
I _B	0.1				A
P _T					
T _C ≤ 25°C.....	70				W
T _C > 25°C.....	Derate linearly 0.56				W/°C
T _{stg} , T _J	-65 to 150				°C
T _L					
At distances ≥ 1/8 in. (3.17 mm) from case for 10 s max.....	235				°C

BD895, BD895A, BD897, BD897A, BD899, BD899A, BD901

ELECTRICAL CHARACTERISTICS, At Case Temperature ($T_C = 25^\circ\text{C}$ Unless Otherwise Specified)

CHARACTERISTIC	TEST CONDITIONS					LIMITS				UNITS
	VOLTAGE V dc			CURRENT A dc		BD895 BD895A		BD897 BD897A		
	V_{CB}	V_{CE}	V_{BE}	I_C	I_B	Min.	Max.	Min.	Max.	
I_{CEO}		20 30			0 0	—	500	—	—	μA
I_{CBO}	45					—	0.2	—	—	mA
	60					—	—	—	0.2	
$T_C = 100^\circ\text{C}$	45					—	2	—	—	mA
	60					—	—	—	2	
I_{EBO}			-5	0		—	2	—	2	
$V_{CE0}(\text{sus})$				0.1 ^a	0	45	—	60	—	V
h_{FE} BD895, BD897		3		3 ^a		750	—	750	—	
	BD895A, BD897A	3		4 ^a		750	—	750	—	
V_{BE} BD895, BD897		3		3 ^a		—	2.5	—	2.5	V
	BD895A, BD897A	3		4 ^a		—	2.5	—	2.5	
$V_{CE}(\text{sat})$ BD895				3 ^a	0.012	—	2.5	—	2.5	V
	BD897									
BD895A, BD897A				4 ^a	0.016	—	2.8	—	2.8	
h_{fe} $f = 1\text{ MHz}$		3		3		1	—	1	—	
$R_{\theta JC}$						—	1.78	—	1.78	$^\circ\text{C/W}$

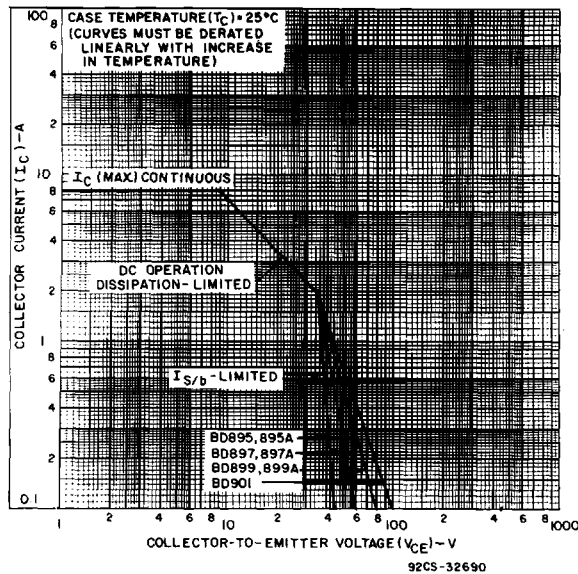


Fig. 2—Maximum operating areas for all types.

BD895, BD895A, BD897, BD897A, BD899, BD899A, BD901

ELECTRICAL CHARACTERISTICS, At Case Temperature ($T_C = 25^\circ\text{C}$ Unless Otherwise Specified)

CHARACTERISTIC	TEST CONDITIONS					LIMITS				UNITS
	VOLTAGE V dc			CURRENT A dc		BD899 BD899A		BD901		
	V_{CB}	V_{CE}	V_{BE}	I_C	I_B	Min.	Max.	Min.	Max.	
I_{CEO}		40 50			0 0	— —	500 —	— —	— 500	μA
I_{CBO}	80 100					— —	0.2 —	— —	— 0.2	mA
	$T_C = 100^\circ\text{C}$	80 100				— —	2 —	— —	— 2	
I_{EBO}			—5	0		—	2	—	2	
$V_{CE0}(\text{sus})$				0.1 ^a	0	80	—	100	—	V
h_{FE} BD899, BD901		3		3 ^a		750	—	750	—	
	BD899A only	3		4 ^a		750	—	—	—	
V_{BE} BD899, BD901		3		3 ^a		—	2.5	—	2.5	V
	BD899A only	3		4 ^a		—	2.5	—	—	
$V_{CE}(\text{sat})$ BD899				3 ^a	0.012	—	2.5	—	2.5	
	BD901			3 ^a	0.012	—	2.5	—	2.5	
$V_{CE}(\text{sat})$ BD899A only				4 ^a	0.016	—	2.8	—	—	
				4 ^a	0.016	—	2.8	—	—	
h_{fe} $f = 1 \text{ MHz}$		3		3 ^a		1	—	1	—	
$R_{\theta JC}$						—	1.78	—	1.78	$^\circ\text{C/W}$

^a Pulsed: Pulse duration = 300 μs , duty factor = 1.8%.

2
POWER TRANSISTORS

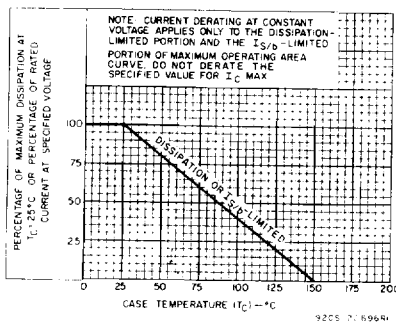


Fig. 3—Derating curve for all types.