File Number **1242**

BD795, BD796, BD797, BD798, BD799, BD800, BD801, BD802

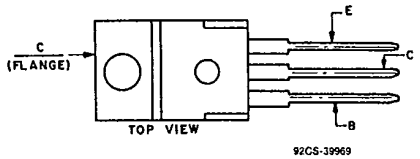
Epitaxial-Base, Silicon N-P-N and P-N-P VERSAWATT Transistors

General-Purpose Medium-Power Types for Switching and Amplifier Applications

Features:

- *Low saturation voltages*
- *Complementary n-p-n and p-n-p types*
- *Maximum safe-area-of-operation curves*

TERMINAL DESIGNATIONS



JEDEC TO-220AB

The RCA-BD795, BD797, BD799, and BD801 n-p-n transistors and their p-n-p complements BD796, BD798, BD800, and BD802, respectively, are epitaxial-base silicon types intended for a wide variety of medium-power switching and amplifier applications, such as series and shunt regulators and driver and output stages of high-fidelity amplifiers.

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

MAXIMUM RATINGS, *Absolute-Maximum Values:*

	N-P-N P-N-P	BD795 BD796•	BD797 BD798•	BD799 BD800•	BD801 BD802•	
V_{CBO}		45	60	80	100	V
$V_{CEO(SUS)}$		45	60	80	100	V
V_{EBO}		5				V
I_C		8				A
I_B		3				A
P_T						
$T_C \leq 25°C$		65				W
$T_C > 25°C$		Derate Linearly 0.522				W/°C
T_{stg}, T_J		-55 to 150				°C
T_L						
At distances ≥ 1/8 in. (3.17 mm) from case for 10 s max.		235				°C

•For p-n-p devices, voltage and current values are negative.

BD795, BD796, BD797, BD798, BD799, BD800, BD801, BD802

ELECTRICAL CHARACTERISTICS, *at Case Temperature (T_C) = 25°C*
Unless Otherwise Specified

CHARACTERISTIC	TEST CONDITIONS					LIMITS				UNITS
	VOLTAGE V dc			CURRENT A dc		BD795 BD796 ●		BD797 BD798 ●		
	V_{CB}	V_{CE}	V_{BE}	I_C	I_B	Min.	Max.	Min.	Max.	
I_{CBO}	45					—	0.1	—	—	mA
	60					—	—	—	0.1	
I_{EBO}			−5	0		—	1	—	1	mA
V_{CEO}[b]				0.1[a]	0	45	—	60	—	V
h_{FE}		2		1[a]		40	—	40	—	
		2		3[a]		25	—	25	—	
$V_{BE(ON)}$		2		3[a]		—	1.6	—	1.6	V
$V_{CE(sat)}$				3[a]	0.3	—	1	—	1	V
f_T f = 1 MHz		10		0.25		3	—	3	—	MHz
$R_{\theta JC}$						—	1.92	—	1.92	°C/W

[a] Pulsed; Pulse duration = 300 μs, duty factor = 1.8%.

[b] CAUTION: The sustaining voltage $V_{CEO(sus)}$ *MUST NOT* be measured on a curve tracer.

● For p-n-p devices, voltage and current values are negative.

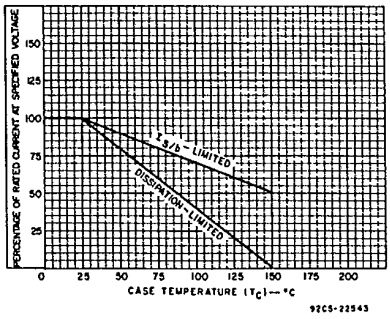


Fig. 1—Current derating curves for all types.

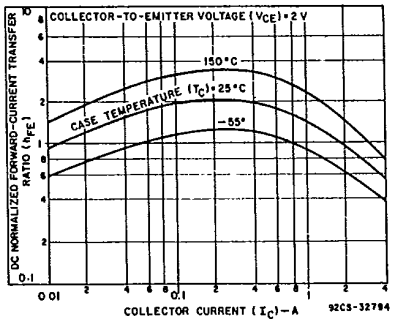


Fig. 2—Normalized dc-beta characteristics for all types.

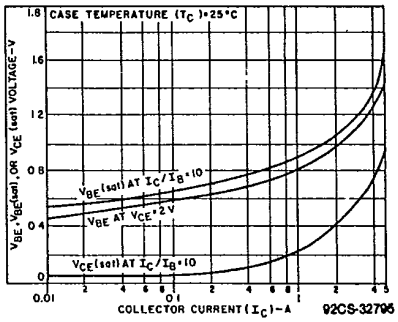


Fig. 3—Typical "on" voltage characteristics for all types.

BD795, BD796, BD797, BD798, BD799, BD800, BD801, BD802

T-33-21

ELECTRICAL CHARACTERISTICS, *at Case Temperature (T_C) = 25°C Unless Otherwise Specified*

CHARACTERISTIC	TEST CONDITIONS					LIMITS				UNITS
	VOLTAGE V dc			CURRENT A dc		BD799 BD800 ●		BD801 BD802 ●		
	V_{CB}	V_{CE}	V_{BE}	I_C	I_B	Min.	Max.	Min.	Max.	
I_{CBO}	80					—	0.1	—	—	mA
	100					—	—	—	0.1	
I_{EBO}			−5	0		—	1	—	1	mA
V_{CEO}[b]		.		0.1[a]	0	80	—	100	—	V
h_{FE}		2		1[a]		30	—	30	—	
		2		3[a]		15	—	15	—	
V_{BE}(ON)		2		3[a]		—	1.6	—	1.6	V
V_{CE}(sat)				3[a]	0.3	—	1	—	1	V
f_T f = 1 MHz		10		0.25		3	—	3	—	MHz
$R_{\theta JC}$						—	1.92	—	1.92	°C/W

[a] Pulsed; Pulse duration = 300 μs, duty factor = 1.8%.

[b] **CAUTION:** The sustaining voltage V_{CEO}(sus) *MUST NOT* be measured on a curve tracer.

● For p-n-p devices, voltage and current values are negative.

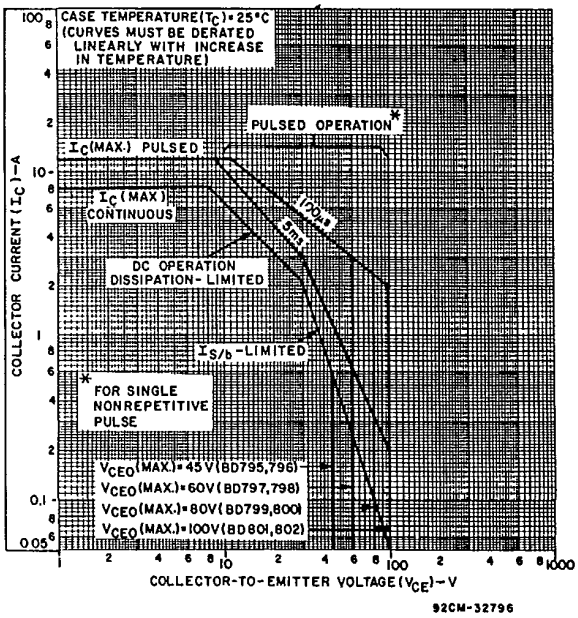


Fig. 4 — Maximum operating areas for all types.