

3875081 G E SOLID STATE
 Pro Electron Power Transistors

01E 17521 D T-33-11
 T-33-19

BD201, BD202, BD203, BD204

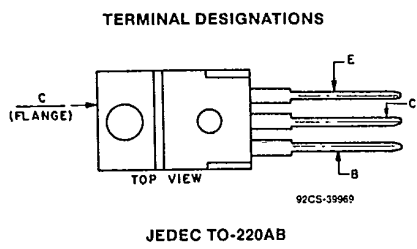
File Number **1282**

**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



The RCA-BD201 and BD203 n-p-n transistors and their complementary p-n-p types, BD202 and BD204 respectively, are epitaxial-base transistors 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 amplifier.

All types utilize the JEDEC TO-220AB (VERSAWATT) plastic package.

MAXIMUM RATINGS, Absolute-Maximum Values:

	N-P-N	BD201	BD203	
	P-N-P	BD202■	BD204■	
V_{CE0}		60	80	V
$V_{CE0}(SUS)$		45	60	V
V_{EEO}		5		V
I_C		8		A
I_B		3		A
P_T		60		W
$T_C \leq 25^\circ C$		Derate linearly 0.48		$W/^\circ C$
$T_C > 25^\circ C$		-65 to 150		$^\circ C$
$T_{319} T_J$				
T_L		235		$^\circ C$
At distances $\geq 1/8$ in. (3.17 mm) from case for 10 s max.				

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

BD201, BD202, BD203, BD204

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

T-33-19

CHARACTERISTIC	TEST CONDITIONS ^a					LIMITS				UNITS
	VOLTAGE V dc			CURRENT A dc		BD201 BD202 ^b		BD203 BD204 ^b		
	V _{CB}	V _{CE}	V _{BE}	I _C	I _B	Min.	Max.	Min.	Max.	
I _{CBO} T _J =150°C	40					—	1	—	1	mA
I _{CEO}	40					—	1	—	1	
I _{EBO}			-5			—	5	—	5	
V _{CEO(sus)} ^a				0.2 ^b		45	—	60	—	V
h _{FE}		2		1 ^b		30	—	30	—	
		2		2 ^b		—	—	30	—	
		2		3 ^b		30	—	—	—	
V _{BE}		2		3 ^b		—	1.5	—	1.5	V
V _{CE(sat)}				3 ^b	0.3	—	1	—	1	
I _{S/b}		20		3		0.5	—	0.5	—	s
h _{fe} (f=1 kHz)		3		0.3		3	—	3	—	
h _{fe} (f=1 kHz)		3		0.3		25	—	25	—	
R _{θJC}						—	2.08	—	2.08	°C/W
R _{θJA}						—	70	—	70	

^aCAUTION: The sustaining voltage V_{CEO(sus)} MUST NOT be measured on a curve tracer.

^bPulsed: pulse duration = 300 μs, duty factor = 0.018.

^cFor p-n-p devices, voltage and current values are negative.

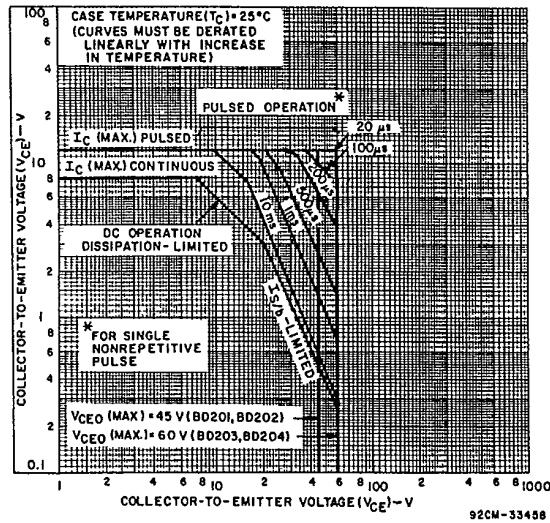


Fig. 1 — Maximum operating areas for all types ($T_C = 25^\circ\text{C}$).

T-33-19

BD201, BD202, BD203, BD204

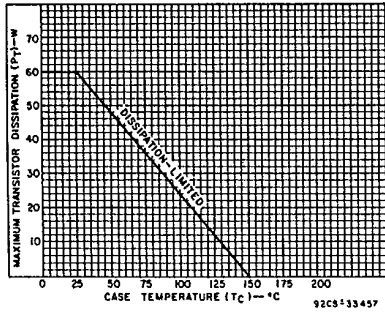


Fig. 2 - Derating curve for all types.

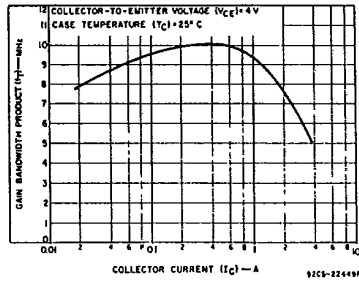


Fig. 3 - Typical gain-bandwidth product vs. collector current for all types.