

New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

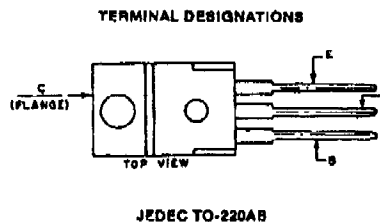
BD201, BD202, BD203, BD204

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



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.

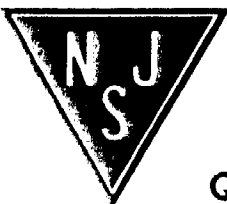
All types utilize the JEDEC TO-220AB (VERSAWATT) plastic package.

MAXIMUM RATINGS, Absolute-Maximum Values:

V_{CBO}	
$V_{CEO}(80s)$	
V_{EBO}	
I_C	
I_E	
P_T	
$T_C \leq 25^\circ C$	
$T_C > 25^\circ C$	
T_{stg}	
T_L	
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.

N-P-N	BD201	BD203	
P-N-P	BD202■	BD204■	
	60	80	V
	45	60	V
		5	V
		8	A
		3	A
		60	W
		Derate linearly 0.48	W/°C
		-65 to 150	°C
		235	°C



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

BD201, BD202, BD203, BD204

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

CHARAC- TERISTIC	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 _{OBQ} T _J =150°C	40						—	1	—	1	mA
	40						—	1	—	1	
I _{CEQ}		30					—	1	—	1	
I _{EBQ}			-5				—	5	—	5	
V _{CEQ(sus)} ^a				0.2 ^b			45	—	60	—	V
h _{FE}		2		1 ^b			30	—	30	—	V
		2		2 ^b			—	—	30	—	
		2		3 ^b			30	—	—	—	
V _{BE}		2		3 ^b			—	1.5	—	1.5	
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_{CEQ(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.

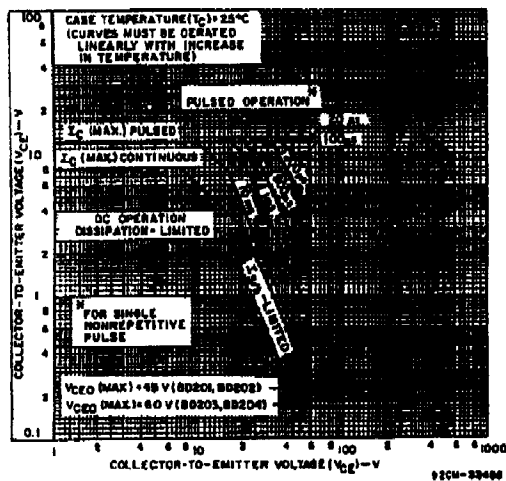


Fig. 1 — Maximum operating areas for all types ($T_C = 25^\circ\text{C}$).