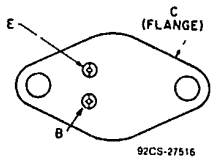
RCA1B04, RCA1B05

File Number **908**

Silicon Transistors for Audio-Amplifier Applications

TERMINAL DESIGNATIONS



JEDEC TO-204AA

The RCA1B04 and RCA1B05 are silicon n-p-n transistors in a JEDEC TO-204AA package. They are especially suitable for applications in audio-amplifier circuits, in which they may be used as either driver or output unit.

These devices, together with a variety of other transistors that serve as input devices, V_{BE} amplifiers for biasing, current sources, load-line limiters (for overload protection), and predrivers, may be used to develop several hundred watts of audio output power in quasi-complementary-symmetry audio-amplifier configurations that employ parallel output transistors.

MAXIMUM RATINGS, *Absolute-Maximum Values:*

	RCA1B04	RCA1B05	
V_{CBO}	225	275	V
V_{CEO}	200	250	V
V_{CER} R_{BE} = 100 Ω	225	275	V
V_{EBO}	5		V
I_C	7		V
I_B	2		A
P_T			
At $T_C \leq 25°C$	150		W
At $T_C > 25°C$	See Fig. 1		°C
T_{stg}, T_J	-65 to 150		°C
T_L			
At distance ≥ 1/32 in. (0.8 mm) from seating plane for 10 s max.	230		°C

RCA1B04, RCA1B05

ELECTRICAL CHARACTERISTICS, *At Case Temperature (T_C) = 25°C*

CHARACTERISTIC	TEST CONDITIONS	LIMITS						UNITS
		RCA1B04▲		RCA1B05*		RCA1B09**		
		Min.	Max.	Min.	Max.	Min.	Max.	
I_{CER}	V_{CE} = 120 V, R_{BE} = 100 Ω	–	1	–	–	–	–	mA
	V_{CE} = 200 V, R_{BE} = 100 Ω	–	–	–	1	–	1	
I_{EBO}	V_{EB} = 5 V, I_C = 0	–	1	–	1	–	1	mA
V_{CEO}	I_C = 0.2 A, I_B = 0	200	–	250	–	250	–	V
V_{CER}	I_C = 0.2 A, R_{BE} = 100 Ω	225	–	275	–	275	–	V
f_T	I_C = 0.2 A, V_{CE} = 10 V	5	–	5	–	–	–	MHz
	I_C = 1 A, V_{CE} = 15 V	–	–	–	–	5	–	
h_{FE}	I_C = 2 A, V_{CE} = 5 V	15	75	15	75	40	–	
$V_{CE(sat)}$	I_C = 2 A, I_B = 0.255 A	–	2	–	2	–	–	V
	I_C = 2 A, I_B = 0.2 A	–	–	–	–	–	1	
V_{BE}	I_C = 2 A, V_{CE} = 5 V	0.75	1.75	0.75	1.75	–	1	V
$I_{S/b}$	V_{CE} = 120 V, t = 1 s	1.25	–	–	–	–	–	A
	V_{CE} = 140 V, t = 1 s	–	–	1.07	–	–	–	
	V_{CE} = 80 V, t = 1 s	–	–	–	–	1.875	–	

▲ For characteristics curves and test conditions, refer to published data for prototype 2N5239 (File 321).
* For characteristics curves and test conditons, refer to published data for prototype 2N5240 (File 321).
** For characteristics curves and test conditions, refer to published data for prototype 2N6510 (File 848).

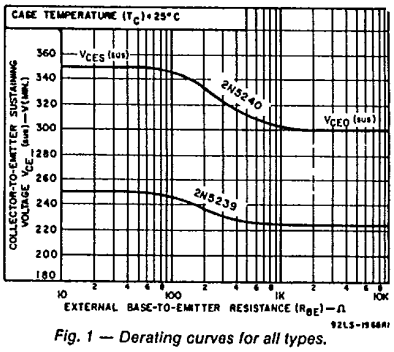


Fig. 1 — Derating curves for all types.

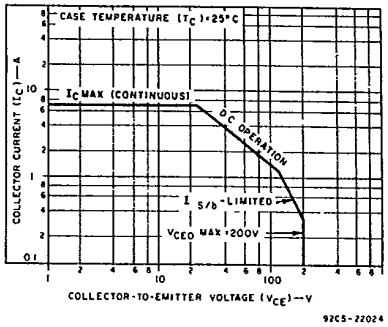


Fig. 2 — Maximum operating areas for RCA1B04.

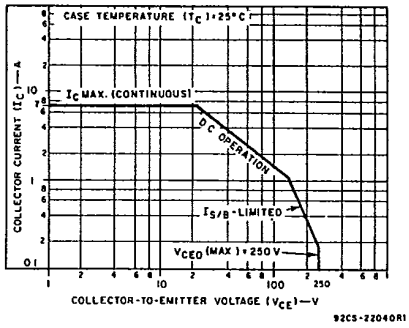


Fig. 3 — Maximum operating areas for RCA1B05.