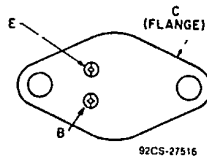


Silicon Transistors for Audio-Amplifier Applications

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

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}	$V_{CE} = 120\text{ V}, R_{BE} = 100\ \Omega$	—	1	—	—	—	—	mA
	$V_{CE} = 200\text{ V}, R_{BE} = 100\ \Omega$	—	—	—	1	—	1	
I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$	—	1	—	1	—	1	mA
V_{CEO}	$I_C = 0.2\text{ A}, I_B = 0$	200	—	250	—	250	—	V
V_{CER}	$I_C = 0.2\text{ A}, R_{BE} = 100\ \Omega$	225	—	275	—	275	—	V
f_T	$I_C = 0.2\text{ A}, V_{CE} = 10\text{ V}$	5	—	5	—	—	—	MHz
	$I_C = 1\text{ A}, V_{CE} = 15\text{ V}$	—	—	—	—	5	—	
h_{FE}	$I_C = 2\text{ A}, V_{CE} = 5\text{ V}$	15	75	15	75	40	—	
$V_{CE(sat)}$	$I_C = 2\text{ A}, I_B = 0.255\text{ A}$	—	2	—	2	—	—	V
	$I_C = 2\text{ A}, I_B = 0.2\text{ A}$	—	—	—	—	—	1	
V_{BE}	$I_C = 2\text{ A}, V_{CE} = 5\text{ V}$	0.75	1.75	0.75	1.75	—	1	V
$I_{S/b}$	$V_{CE} = 120\text{ V}, t = 1\text{ s}$	1.25	—	—	—	—	—	A
	$V_{CE} = 140\text{ V}, t = 1\text{ s}$	—	—	1.07	—	—	—	
	$V_{CE} = 80\text{ V}, t = 1\text{ s}$	—	—	—	—	1.875	—	

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

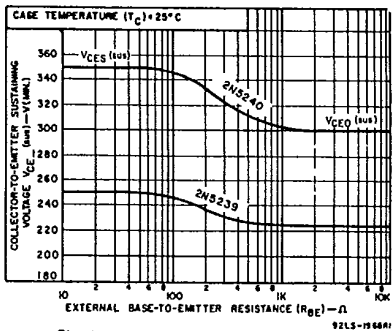


Fig. 1 — Derating curves for all types.

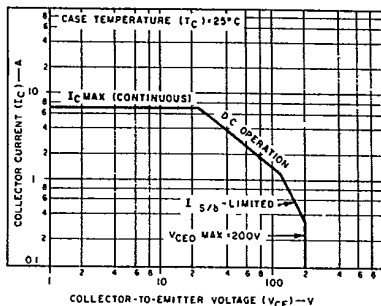


Fig. 2 — Maximum operating areas for RCA1B04.

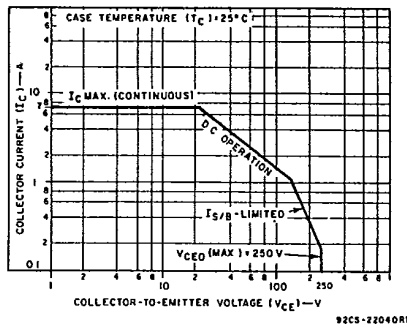


Fig. 3 — Maximum operating areas for RCA1B05.