

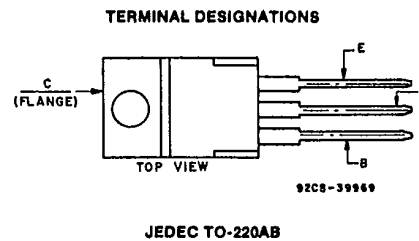
3875081 G E SOLID STATE

01E 17319 D **T-33-29**
Darlington Power TransistorsFile Number **1413****RCA9203A, RCA9203B****4-Ampere N-P-N Darlington
Power Transistors**250 and 300 Volts, 50 Watts
Gain of 500 at 2 A**Features**

- Direct IC input without predriver
- No R_2 , no anti-parallel diode
- Hard glass passivation
- Wire bonded construction

Applications

- General purpose
- Small engine ignition
- Voltage regulator



The RCA9203A, and RCA9203B* are monolithic n-p-n silicon Darlington transistors designed for low-and medium-frequency power applications. The construction of these devices provides good forward-bias second-breakdown capability; their high gain makes it possible for them to be driven directly from integrated circuits.

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

*Formerly RCA Dev. No. TA9203A, and TA9203B.

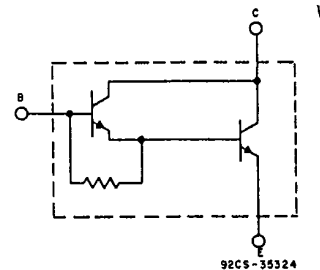


Fig. 1 - Schematic diagram for all types.

MAXIMUM RATINGS, Absolute-Maximum Values:

	RCA9203A	RCA9203B	UNITS
V_{CBO}	250	300	V
$V_{CEO(SUS)}$	250	300	V
V_{ESD}	9	9	V
I_C	4	4	A
I_{CM}	6	6	A
I_B	0.25	0.25	A
P_T			
T_C up to 25°C	50	50	W
T_C above 25°C	Derate linearly at 0.4		W/°C
T_{stg}, T_J	-65 to 150		°C
T_L			
At distance $\geq 1/8$ in. (3.17 mm) from case for 10 s max.	235		°C

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Darlington Power Transistors

RCA9203A, RCA9203B

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

CHARACTERISTIC	TEST CONDITIONS				LIMITS				UNITS
	VOLTAGE V dc		CURRENT A dc		RCA9203A		RCA9203B		
	V _{CE}	V _{BE}	I _C	I _B	Min.	Max.	Min.	Max.	
I _{CBO} I _E = 0	250 ^a 300 ^a	—	—	—	—	0.2	—	—	mA
I _{CEO}	200 250	—	—	0 0	—	0.5	—	—	
I _{EBO}	—	-9	0	—	—	1	—	1	mA
V _{CEO(SUS)} ^c	—	—	.03 ^b	0	250	—	300	—	V
h _{FE}	3.0 3.0	—	2 ^b 4 ^b	—	500 100	—	500 100	—	
V _{BE}	3.0	—	4 ^b	—	—	2.5	—	2.5	V
V _{CE(sat)}	— —	— —	2 ^b 4 ^b	.1 .2	— —	1.5 2.0	— —	1.5 2.0	V
C _{obo} V _{CB} = 10 V f = 1 MHz	—	—	—	—	100 Typ.		100 Typ.		pF
t _{sub} t = 0.5 s non- rep. pulse	40	—	—	—	1.25	—	1.25	—	A
R _{θJC}	—	—	—	—	—	2.5	—	2.5	°C/W

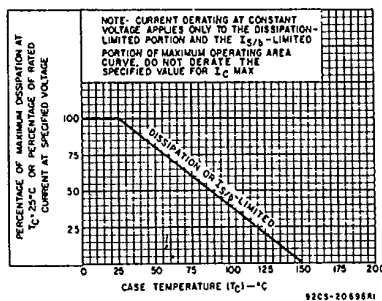
^a V_{CB} value.^bPulsed, pulse duration = 300 μ s, duty factor $\leq 2\%$.^cCaution: Sustaining voltage, $V_{CEO(sus)}$, must not be measured on a curve tracer.

Fig. 2 - Derating curve for all types.

RCA9203A, RCA9203B

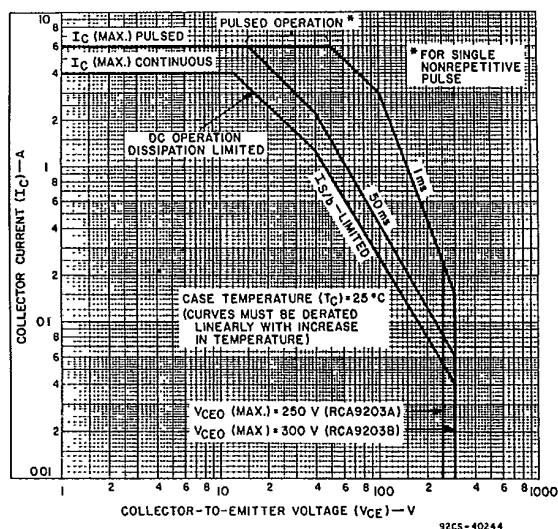


Fig. 3 - Maximum operating areas for all types.

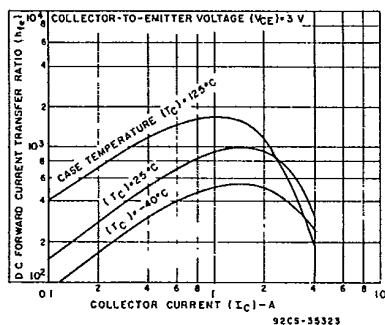


Fig. 4 - Typical dc beta characteristics for all types.

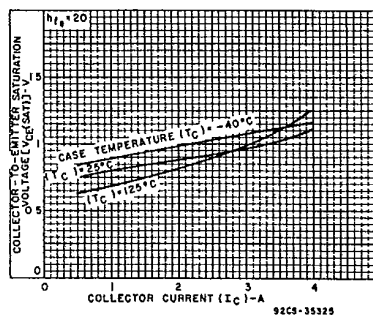


Fig. 5 - Typical saturation characteristics for all types.

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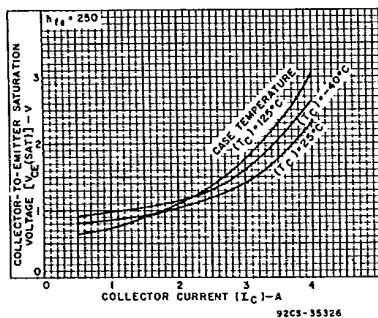


Fig. 6 - Typical saturation characteristics for all types.

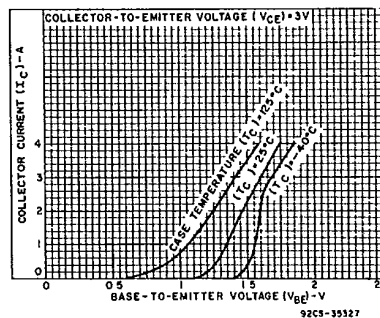


Fig. 7 - Typical transfer characteristics for all types.

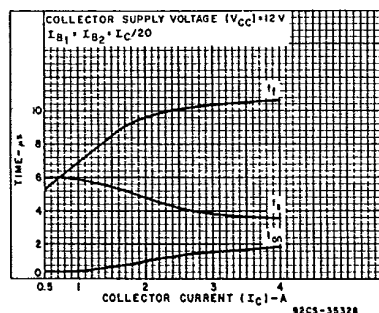


Fig. 8 - Typical saturated switching characteristics for all types.

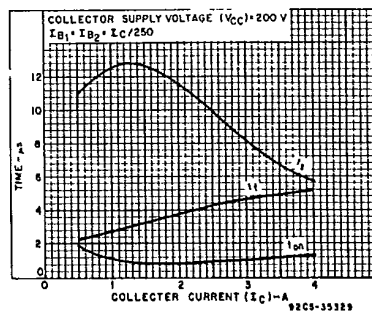


Fig. 9 - Typical saturated switching characteristics for all types.

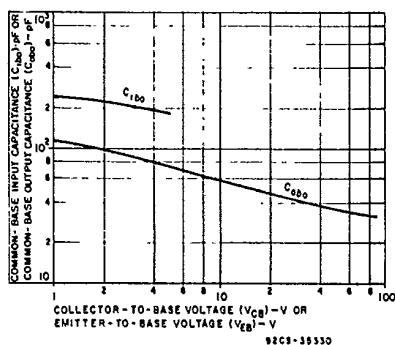


Fig. 10 - Typical common-base input (C_{ibo}) or output (C_{obo}) capacitance characteristics (all types).