

3875081 G E SOLID STATE
General-Purpose Power Transistors

01E 17424 DT-33-11

T-33-19

2N6121-2N6123, 2N6124-2N6126

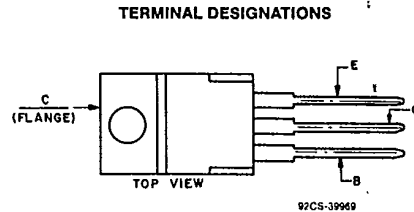
File Number 1149

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 specified for dc operation



The RCA-2N6121, 2N6122, and 2N6123 are epitaxial-base n-p-n transistors. The 2N6124, 2N6125, and 2N6126 are epitaxial-base p-n-p transistors. They are complements to 2N6121, 2N6122, and 2N6123, respectively.

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

All these transistors are 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 amplifiers.

MAXIMUM RATINGS, Absolute-Maximum Values:

	N-P-N P-N-P	2N6121 2N6124	2N6122 2N6125	2N6123 2N6126	
*V _{CB0}		45	60	80	V
*V _{CEO(SUS)}		45	60	80	V
*V _{EBO}			5		V
*I _C			4		A
*I _B			1		A
P _T			40		W
T _C ≥ 25°C			16		W
T _C > 25°C ≤ 100°C			Derate linearly 0.32		W/°C
T _C > 25°C			1.8		W
T _A ≤ 25°C			Derate linearly 0.0144		W/°C
T _A > 25°C			-65 to 150		°C
*T _{slgr} , T _J					
T _L			235		°C
At distances ≥ 1/8 in. (3.17 mm) from case for 10 s max.					

*In accordance with JEDEC registration data. For p-n-p devices, voltage and current values are negative.

2N6121-2N6123, 2N6124-2N6126

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

T-33-19

CHARACTERISTIC	TEST CONDITIONS [♦]				LIMITS						UNITS
	VOLTAGE V dc		CURRENT A dc		2N6121 2N6124 [♦]		2N6122 2N6125 [♦]		2N6123 2N6126 [♦]		
	V _{CE}	V _{BE}	I _C	I _B	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	
I _{CBO}	45 ^a				-	0.1	-	-	-	-	mA
	60 ^a				-	-	-	0.1	-	-	
	80 ^a				-	-	-	-	-	0.1	
* I _{CEX}	45	-1.5			-	0.1	-	-	-	-	mA
	60	-1.5			-	-	-	0.1	-	-	
	80	-1.5			-	-	-	-	-	0.1	
T _C = 125°C	45	-1.5			-	2	-	-	-	-	mA
	60	-1.5			-	-	-	2	-	-	
	80	-1.5			-	-	-	-	-	2	
* I _{CEO}	45			0	-	1	-	-	-	-	mA
	60			0	-	-	-	1	-	-	
	80			0	-	-	-	-	-	1	
* I _{EBO}		-5	0		-	1	-	1	-	1	V
* V _{CEO (sus)} ^b			0.1 ^c	0	45	-	60	-	80	-	
* h _{FE}	2		1.5 ^c		25	100	25	100	20	80	
	2		4 ^c		10	-	10	-	7	-	V
* V _{BE}	2		1.5 ^c		-	1.2	-	1.2	-	1.2	
V _{CE(sat)}			1.5 ^c	0.15	-	0.6	-	0.6	-	0.6	
			4 ^c	1	-	1.4	-	1.4	-	1.4	V
* h _{fe} (f=1 MHz)	4		1		2.5	-	2.5	-	2.5	-	
* h _{fe} (f=1 kHz)	2		0.1		25	-	25	-	25	-	
R _{θJC}					-	3.125	-	3.125	-	3.125	°C/W

^a In accordance with JEDEC registration data.
^b CAUTION: The sustaining voltage V_{CEO(sus)} MUST NOT be measured on a curve tracer.

^a V_{CB} value.
^c Pulsed: Pulse duration = 300 μs, duty factor = 0.018.
[♦] For p-n-p devices, voltage and current values are negative.

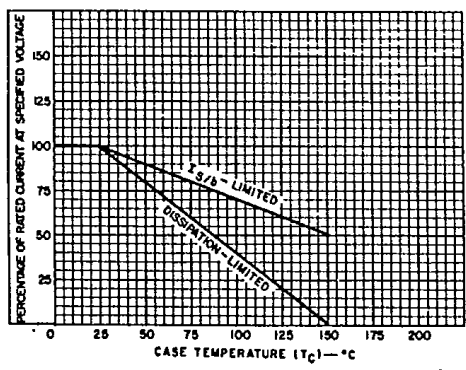


Fig. 1 - Current derating curves for all types.

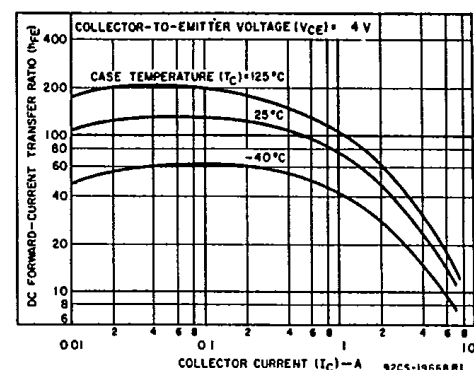


Fig. 2 - Typical dc beta characteristics for all types.

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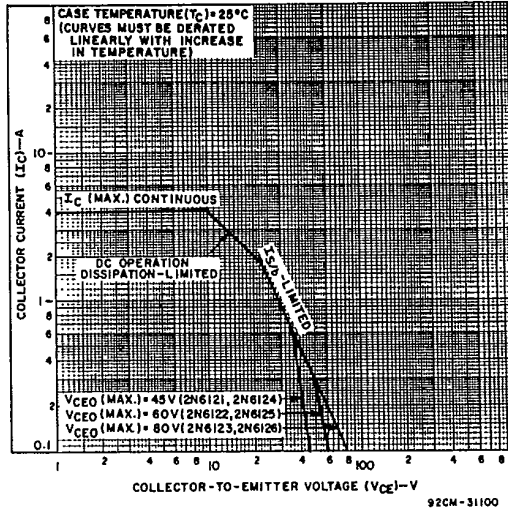


Fig. 3 - Maximum operating areas for all types.

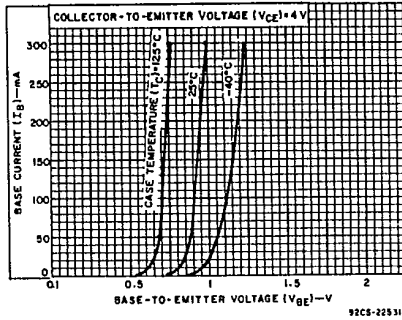


Fig. 4 - Typical input characteristics for all types.

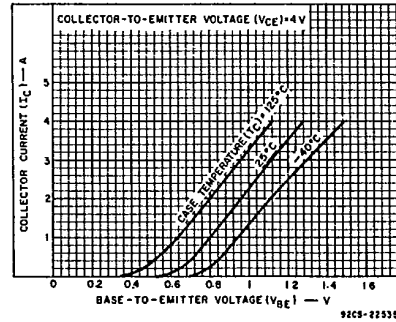


Fig. 5 - Typical transfer characteristics for all types.

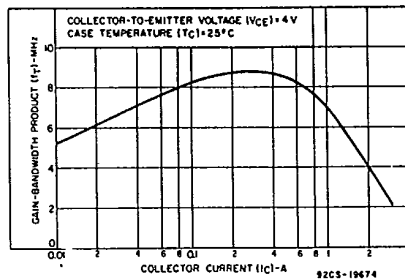


Fig. 6 - Typical gain-bandwidth product.

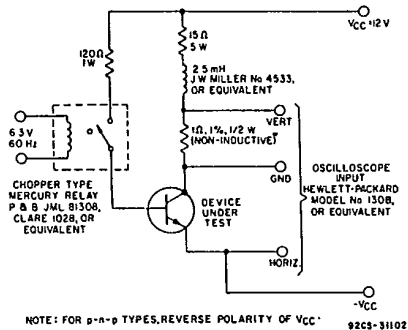


Fig. 7 - Circuit used to measure sustaining voltage $V_{CE0}(sus)$ for all types.