



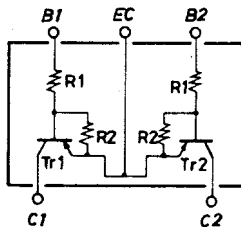
FC142

PNP Epitaxial Planar Silicon Composite Transistor Switching Applications (with Bias Resistance)

Features

- On-chip bias resistance ($R1=4.7k\Omega$, $R2=10k\Omega$).
- Composite type with 2 transistors contained in the CP package currently in use, improving the mounting efficiency greatly.
- The FC142 is formed with two chips, being equivalent to the 2SA1653, placed in one package.
- Excellent in thermal equilibrium and pair capability.

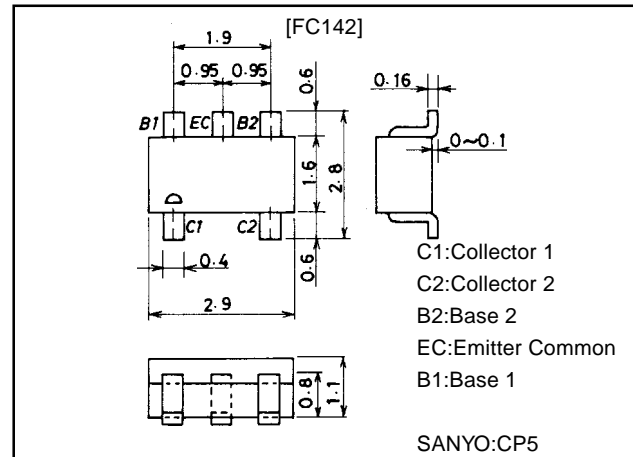
Electrical Connection



Package Dimensions

unit:mm

2066



Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-50	V
Collector-to-Emitter Voltage	V_{CEO}		-50	V
Emitter-to-Base Voltage	V_{EBO}		-6	V
Collector Current	I_C		-100	mA
Peak Collector Current	I_{CP}		-200	mA
Collector Dissipation	P_C	1 unit	200	mW
Total Power Dissipation	P_T		300	mW
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-40\text{V}$, $I_E=0$			-0.1	μA
Collector Cutoff Current	I_{CEO}	$V_{CB}=-40\text{V}$, $I_E=0$			-0.5	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-5\text{V}$, $I_C=0$	-262	-340	-485	μA
DC Current Gain	h_{FE}	$V_{CE}=-5\text{V}$, $I_C=-10\text{mA}$	50			
Gain-Bandwidth Product	f_T	$V_{CE}=-5\text{V}$, $I_C=5\text{mA}$		200		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}$, $f=1\text{MHz}$		5.1		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=-10\text{mA}$, $I_B=-0.5\text{mA}$		-0.1	-0.3	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}$, $I_E=0$	-50			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-100\mu\text{A}$, $R_{BE}=\infty$	-50			V
Input OFF-State Voltage	$V_{I(off)}$	$V_{CE}=-5\text{V}$, $I_C=-100\mu\text{A}$	-0.7	-0.85	-0.95	V
Input ON-State Voltage	$V_{I(on)}$	$V_{CE}=-0.2\text{V}$, $I_C=-10\text{mA}$	-0.95	-1.3	-2.0	V
Input Resistance	R1		3.3	4.7	6.1	k Ω
Resistance Ratio	R1/R2			0.47		

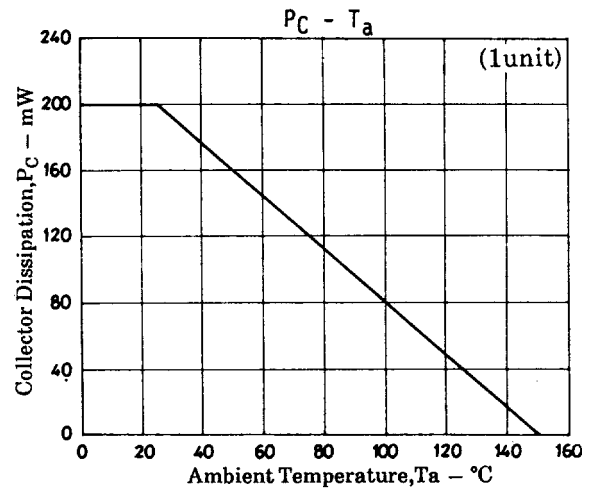
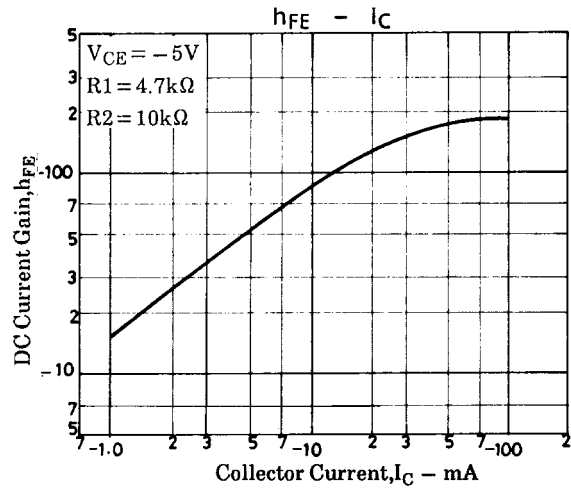
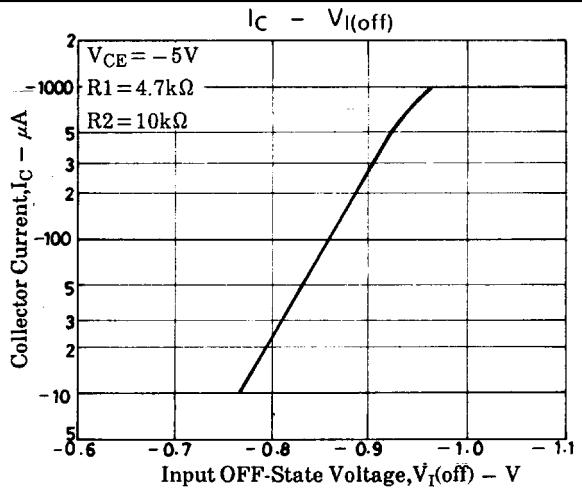
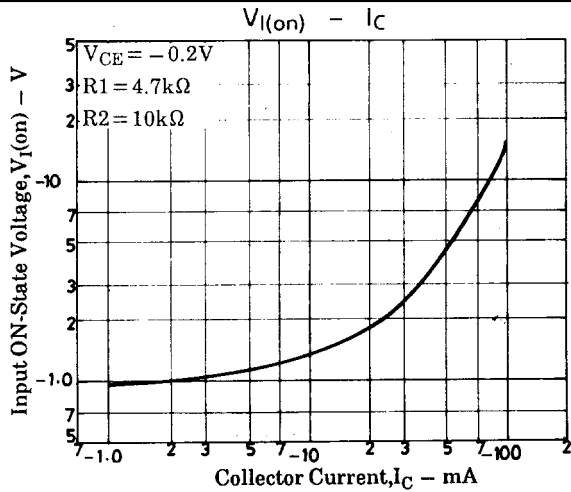
Note: The specifications shown above are for each individual transistor.

Marking:142

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FC142



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