



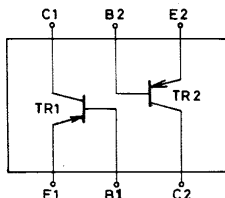
# FC149

## PNP Epitaxial Planar Silicon Composite Transistor Low-Frequency General-Purpose Amp, Driver Applications

### Features

- Composite type with 2 transistors contained in the CP package currently in use, improving the mounting efficiency greatly.
- The FC149 is formed with two chips, being equivalent to the 2SA1813, placed in one package.
- Adoption of FBET process.
- High DC current gain ( $h_{FE}=500$  to 1200).
- High  $V_{EBO}$  ( $V_{EBO} \geq 15V$ ).
- Excellent in thermal equilibrium and pair capability.

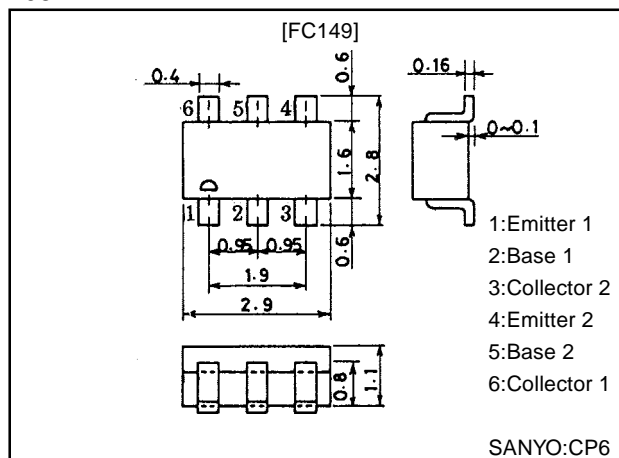
### Electrical Connection



### Package Dimensions

unit:mm

2067A



### Specifications

#### Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		-30	V
Collector-to-Emitter Voltage	$V_{CEO}$		-25	V
Emitter-to-Base Voltage	$V_{EBO}$		-15	V
Collector Current	$I_C$		-150	mA
Collector Current (Pulse)	$I_{CP}$		-300	mA
Base Current	$I_B$		-30	mA
Collector Dissipation	$P_C$	1 unit	200	mW
Total Dissipation	$P_T$		300	mW
Junction Temperature	$T_J$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

#### Electrical Characteristics at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-20V, I_E=0$			-0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-10V, I_E=0$			-0.1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=-5V, I_C=-1mA$	500	800	1200	
DC Current Gain Ratio	$h_{FE}(\text{small/large})$	$V_{CE}=-5V, I_C=-1mA$	0.7	0.98		
Gain-Bandwidth Product	$f_T$	$V_{CE}=-10V, I_C=10mA$		210		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-10V, f=1MHz$		2.6		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=-50mA, I_B=-1mA$	-0.15		-0.3	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=-50mA, I_B=-1mA$	-0.78		-1.1	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-30			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	-25			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-15			V

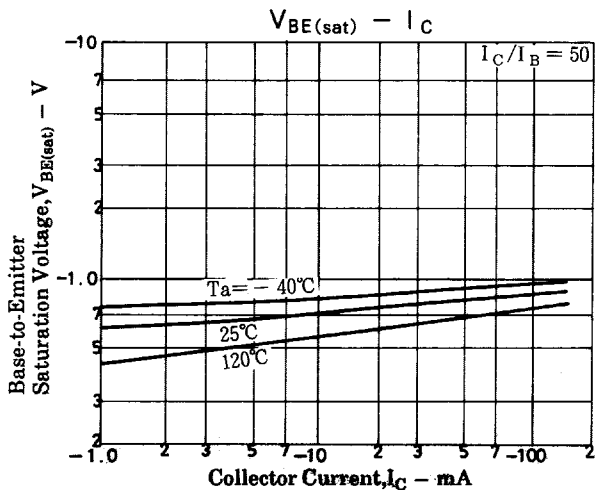
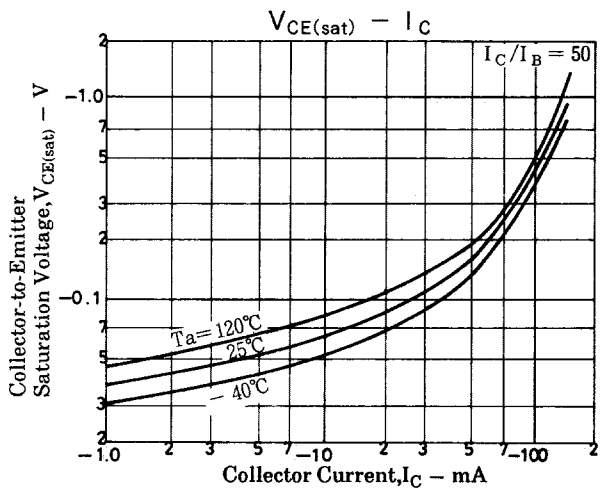
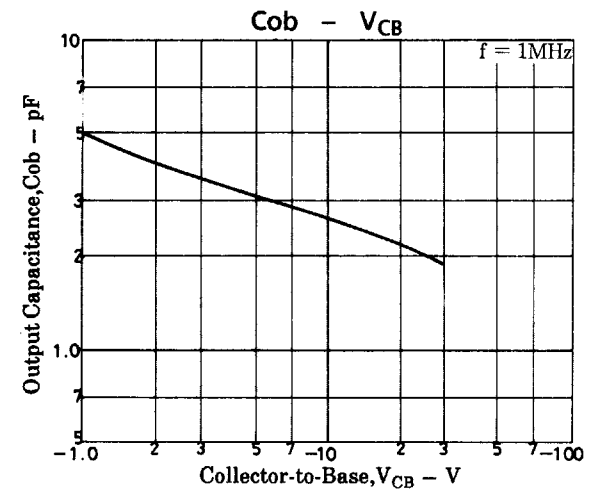
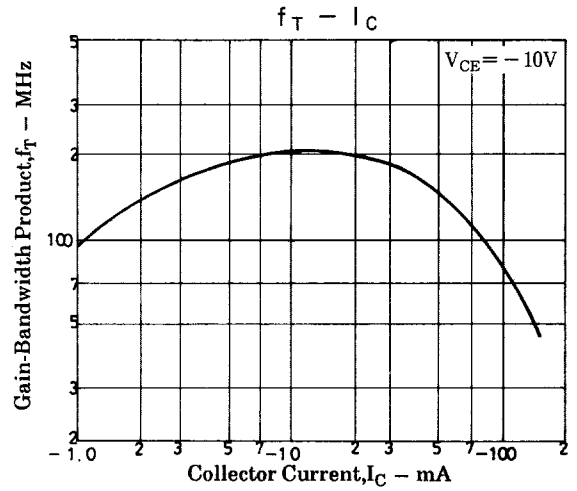
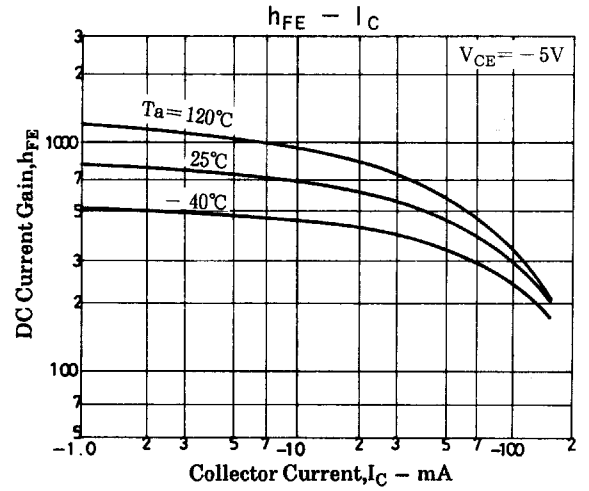
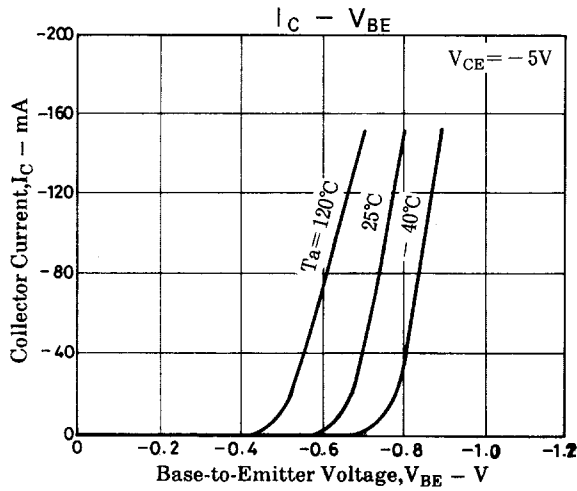
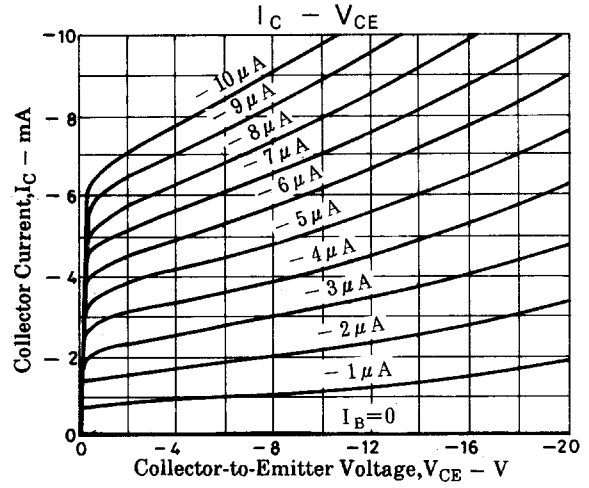
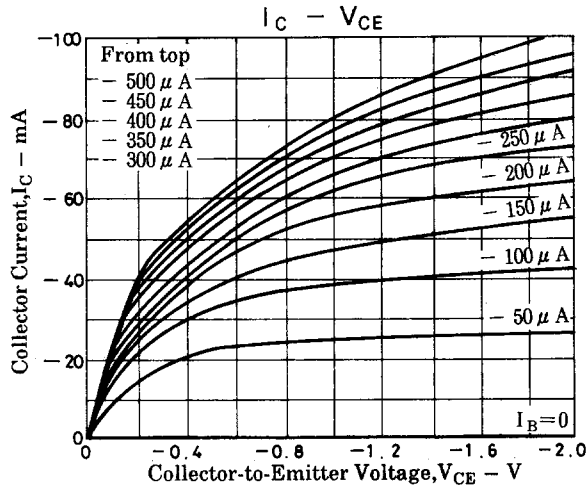
Note: The specifications shown above are for each individual transistor.

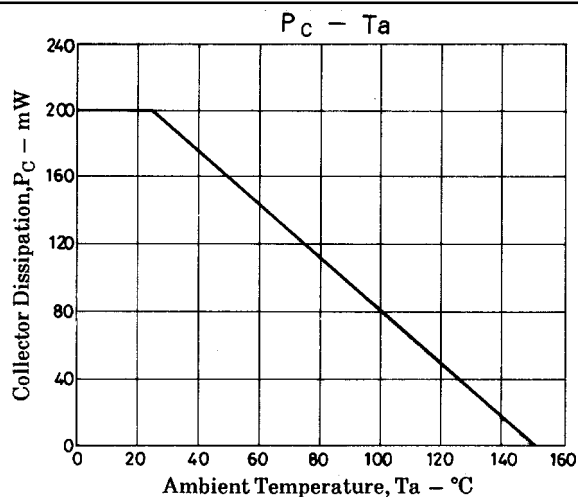
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# FC149





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