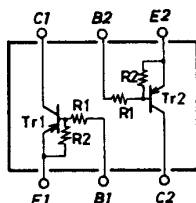


**FC109**

PNP Epitaxial Planar Silicon Composite Transistor

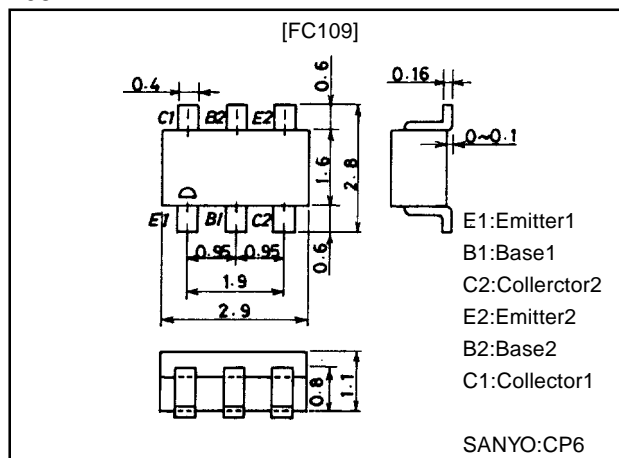
**Switching Applications****Features**

- On-chip bias resistors ( $R1=22k\Omega$ ,  $R2=22k\Omega$ )
- Composite type with 2 transistors contained in the CP package currently in use, improving the mounting efficiency greatly.
- The FC109 is formed with two chips, being equivalent to the 2SA1342, placed in one package.
- Excellent in thermal equilibrium and pair capability.

**Electrical Connection****Package Dimensions**

unit:mm

2067

**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	$V_{EBO}$		-10	V
Collector Current	$I_C$		-100	mA
Collector Current (Pulse)	$I_{CP}$		-200	mA
Collector Dissipation	$P_C$	1 unit	200	mW
Total 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	$\mu\text{A}$
Collector Cutoff Current	$I_{CEO}$	$V_{CE}=-40\text{V}$ , $I_B=0$			-0.5	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-5\text{V}$ , $I_C=0$	-70	-113	-160	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=-5\text{V}$ , $I_C=-5\text{mA}$	50			
Gain-Bandwidth Product	$f_T$	$V_{CE}=-10\text{V}$ , $I_C=-5\text{mA}$		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	$V_{I(off)}$	$V_{CE}=-5\text{V}$ , $I_C=-100\mu\text{A}$	-0.8	-1.1	-1.5	V
Input ON-State Voltage	$V_{I(on)}$	$V_{CE}=-0.2\text{V}$ , $I_C=-5\text{mA}$	-1.0	-1.9	-3.0	V
Input Resistance	$R_1$		15	22	29	$k\Omega$
Resistance Ratio	$R_1/R_2$		0.9	1.0	1.1	

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

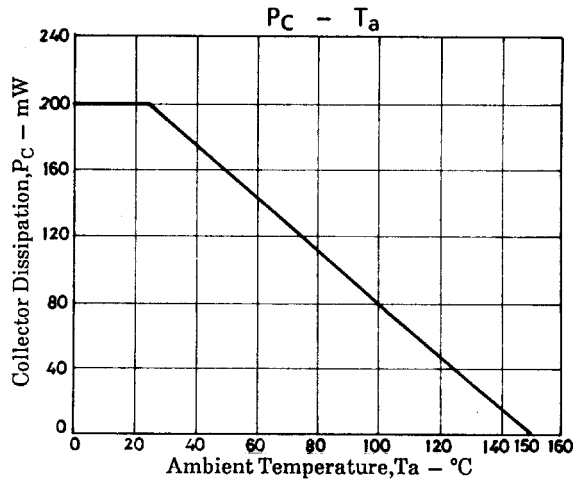
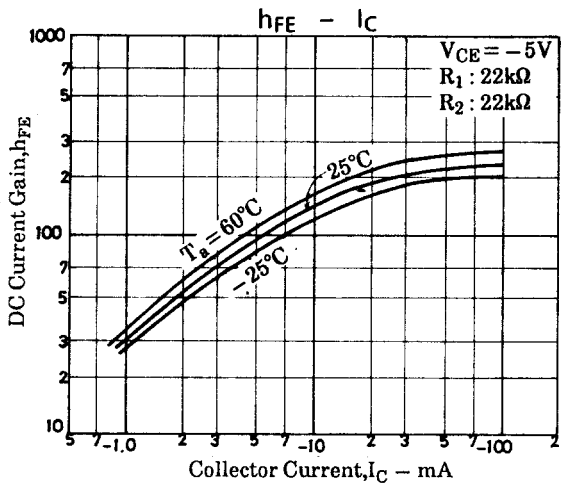
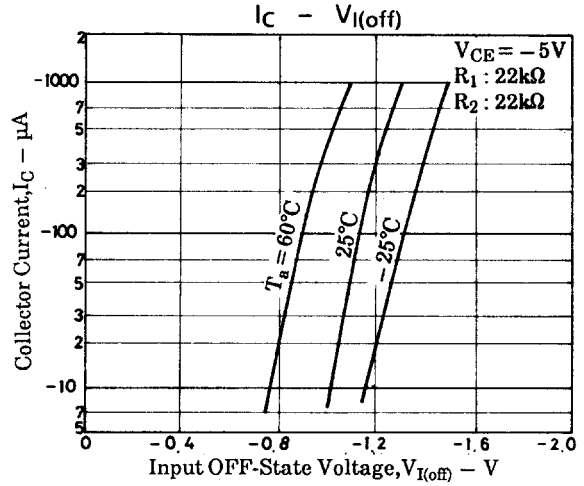
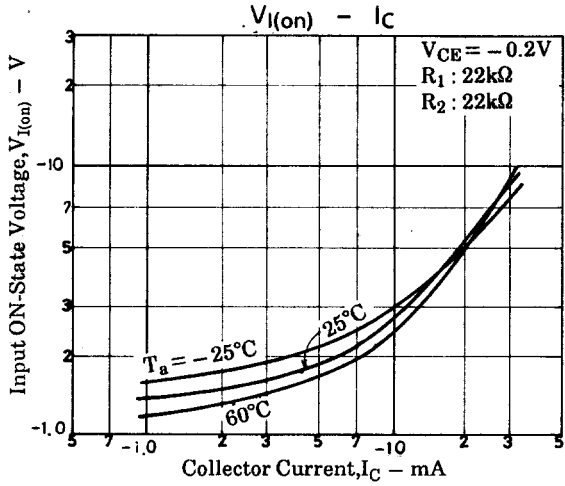
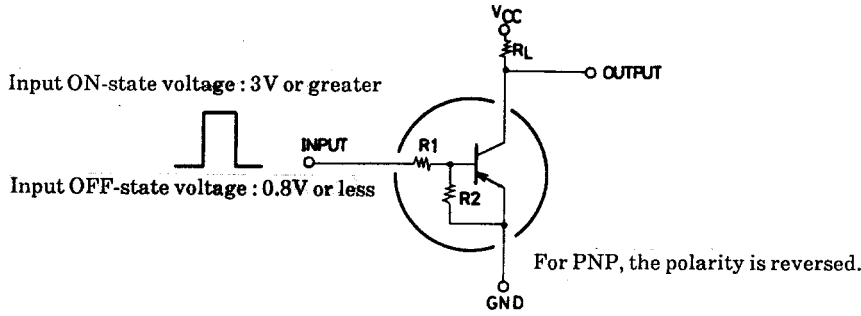
Marking:109

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Sample Application Circuit



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