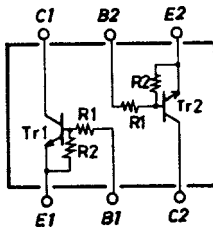


**SANYO****FC110**

NPN Epitaxial Planar Silicon Composite Transistor

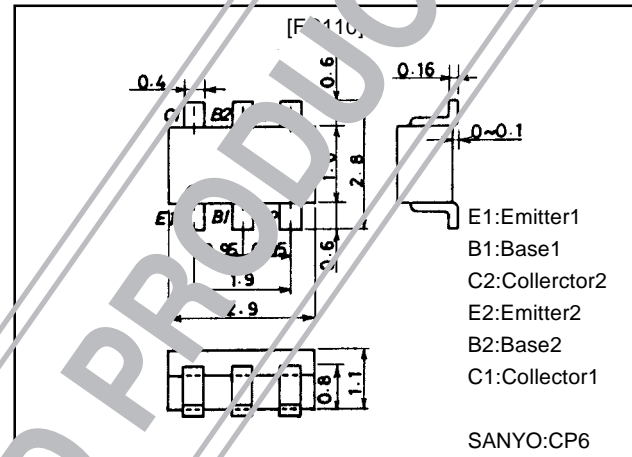
**Switching Applications****Features**

- 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 FC110 is formed with two chips, being equivalent to the 2SC3396, 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	$V_{CB0}$		50	V
Collector-to-Emitter Voltage	$V_{CEO}$		50	V
Emitter-to-Base Voltage	$V_{EB0}$		10	V
Collector Current	$I_C$		100	mA
Collector Current (Pulse)	$I_{CP}$		200	mA
Collector Dissipation	$P_C$	unit	200	mW
Total Dissipation	$P_T$		300	mW
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Storage Temperature	$T_S$		-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	$f_T$	$V_{CE}=10\text{V}$ , $I_C=5\text{mA}$		250		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ , $f=1\text{MHz}$		3.3		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:110

**SANYO Electric Co.,Ltd. Semiconductor Business Headquarters**

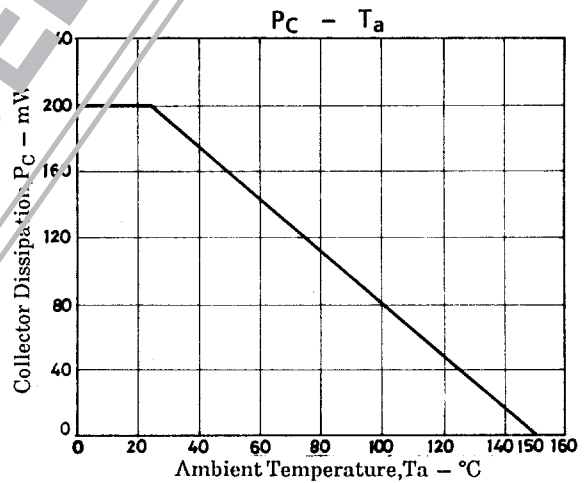
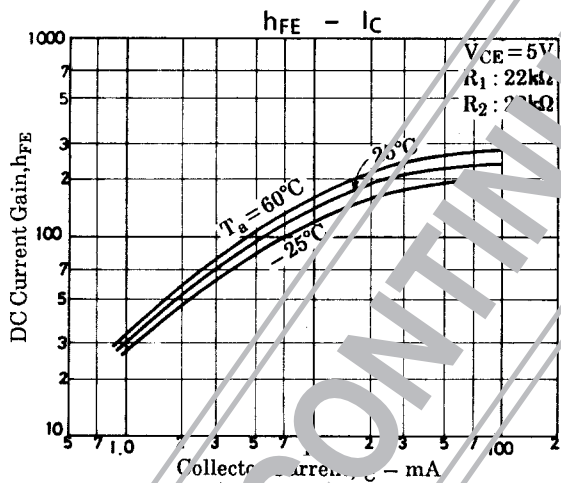
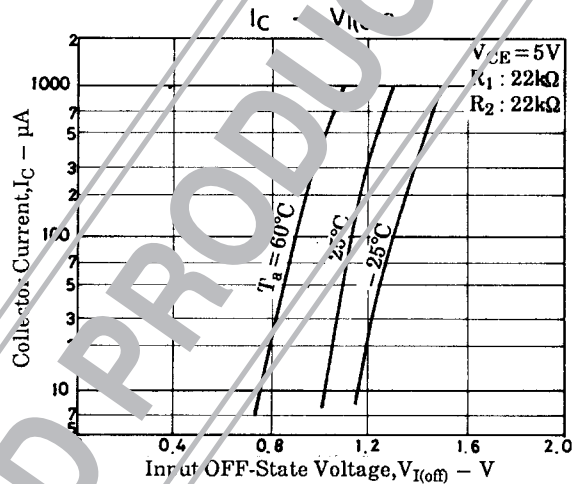
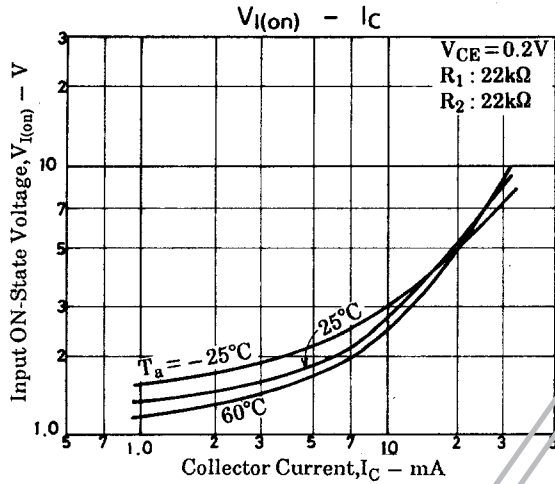
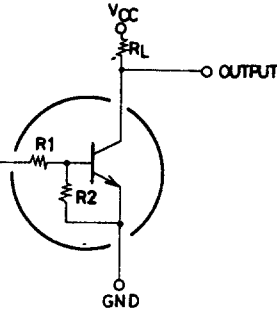
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52098HA (KT)/4139MO, TS No.3078-1/2

Sample Application Circuit

Input ON-state voltage : 3V or greater

Input OFF-state voltage : 0.8V or less



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