



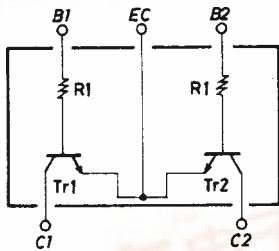
FC138

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

Features

- On-chip bias resistance ($R1=4.7k\Omega$).
- Composite type with 2 transistors contained in the CP package currently in use, improving the mounting efficiency greatly.
- The FC138 is formed with two chips, being equivalent to the 2SC3900, placed in one package.
- Excellent in thermal equilibrium and pair capability.

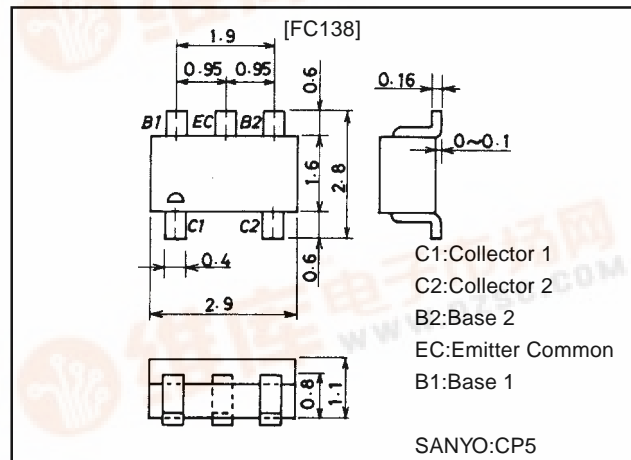
Electrical Connection



Package Dimensions

unit:mm

2066



Specifications

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

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}		5	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	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

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

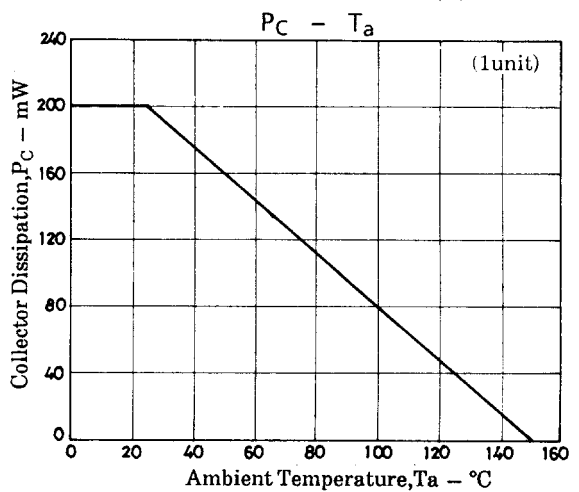
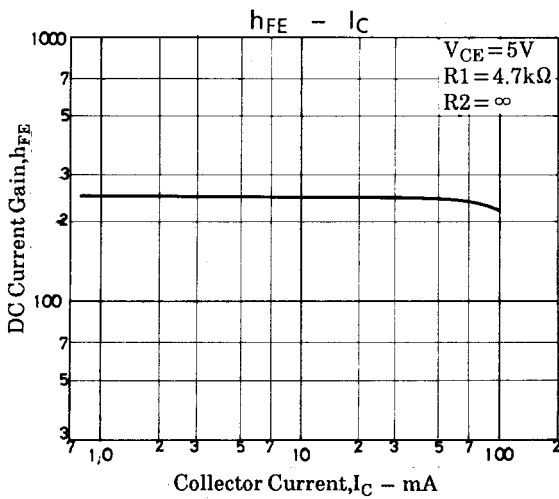
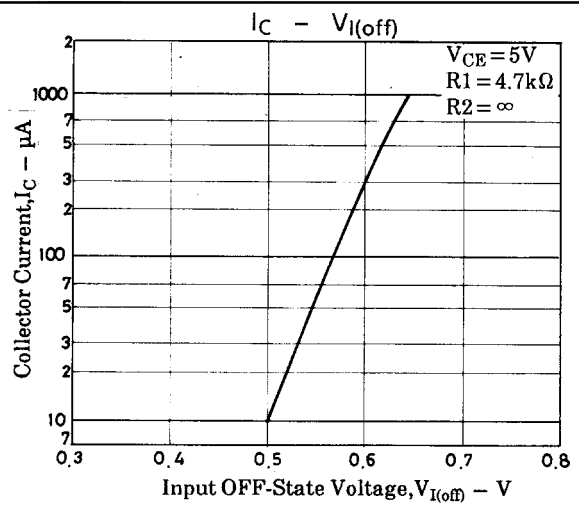
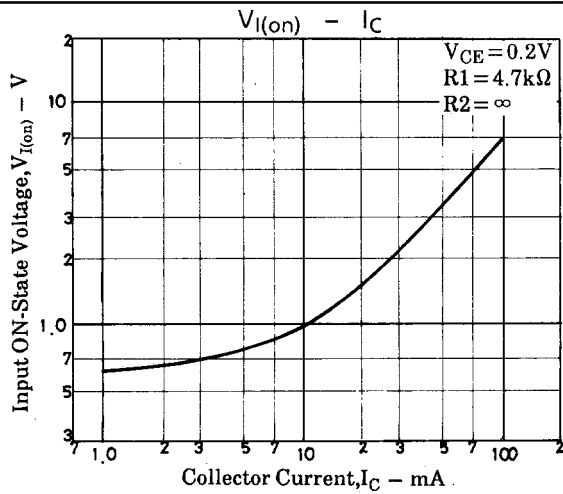
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40V, I_E=0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=10mA$	100			
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=5mA$		250		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		3.3		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA, I_B=0.5mA$		0.1	0.3	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	50			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=100\mu A, R_{BE}=\infty$	50			V
Input OFF-State Voltage	$V_{I(off)}$	$V_{CE}=5V, I_C=100\mu A$	0.4	0.55	0.8	V
Input ON-State Voltage	$V_{I(on)}$	$V_{CE}=0.2V, I_C=10mA$	0.6	1.0	2.0	V
Input Resistance	$R1$		3.3	4.7	6.1	k Ω

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

Marking:138



FC138



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