Ordering number:EN4698

FP215

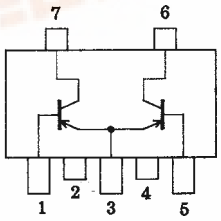
PNP Epitaxial Planar Silicon Composite Transistors

High-Frequency Amp, Differential Amp Applications

Features

- Composite type with 2 transistors contained in the PCP package currently in use, improving the mounting efficiency greatly.
- The FP215 is formed with two chips, being equivalent to the 2SA1724, placed in one package.
- Excellent in thermal equilibrium and pair capability.

Electrical Connection



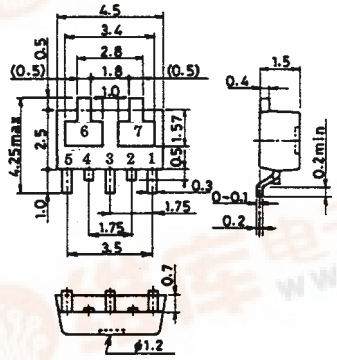
1:Base (PNP TR)
2:Collector (PNP TR)
3:Emitter Common
4:Collector (PNP TR)
5:Base (PNP TR)
6:Collector (PNP TR)
7:Collector (PNP TR)
(Top view)

Package Dimensions

unit:mm

2108A

[FP215]



1:Base (PNP TR)
2:Collector (PNP TR)
3:Emitter Common
4:Collector (PNP TR)
5:Base (PNP TR)
6:Collector (PNP TR)
7:Collector (PNP TR)

SANYO:PCP5
(Bottom view)

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		–30	V
Collector-to-Emitter Voltage	V_{CEO}		–20	V
Emitter-to-Base Voltage	V_{EBO}		–3	V
Collector Current	I_C		–300	mA
Collector Current (Pulse)	I_{CP}		–600	mA
Collector Dissipation	P_C	Mounted on ceramic board (250mm²×0.8mm) 1 unit	0.75	W
Total Dissipation	P_T	Mounted on ceramic board (250mm²×0.8mm)	1.0	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta=25˚C

Parameter	Symbol	Conditons	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=–20V, I_E=0			–0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–2V, I_C=0			–1.0	μA
DC Current Gain	$h_{FE}1$	V_{CE}=–5V, I_C=–50mA	15		100	
	$h_{FE}2$	V_{CE}=–5V, I_C=–3000mA	5			
DC Current Gain Ratio	$h_{FE}1$ (small-large)	V_{CE}=–5V, I_C=–50mA	0.6	0.93		
Base-to-Emitter Voltage Difference	V_{BE} (large-small)	V_{CE}=–5V, I_C=–100mA		3.0	25	mV
Gain-Bandwidth Product	f_T	V_{CE}=–5V, I_C=–50mA		1.5		GHz
Output Capacitance	Cob	V_{CB}=–10V, f=1MHz		4.9		pF
Reverse Transfer Capacitance	Cre	V_{CB}=–10V, f=1MHz		4.4		pF
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=–100mA, I_B=–10mA		–0.4	–1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	I_C=–100mA, I_B=–10mA		–0.9	–1.2	V

Note:The specifications shown above are for individual transistor.
However, the DC Current Gain Ratio and Base-to-Emitter Voltage Difference are for the paired transistors.

Marking:215

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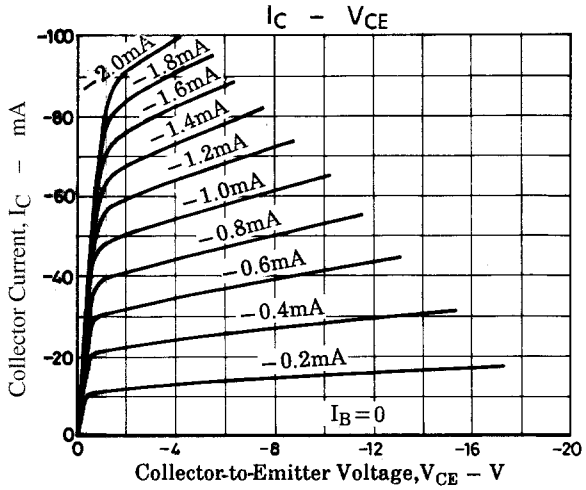
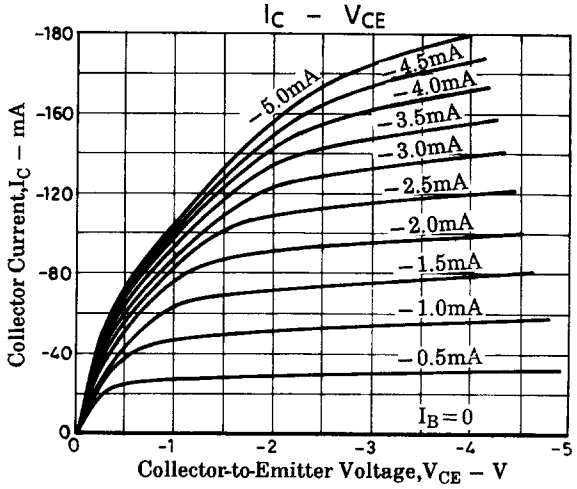
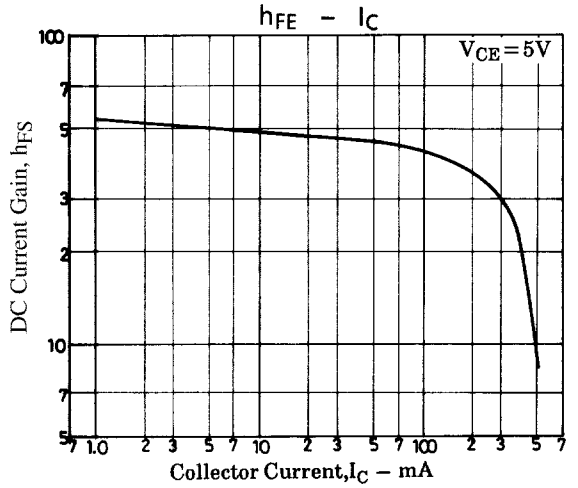
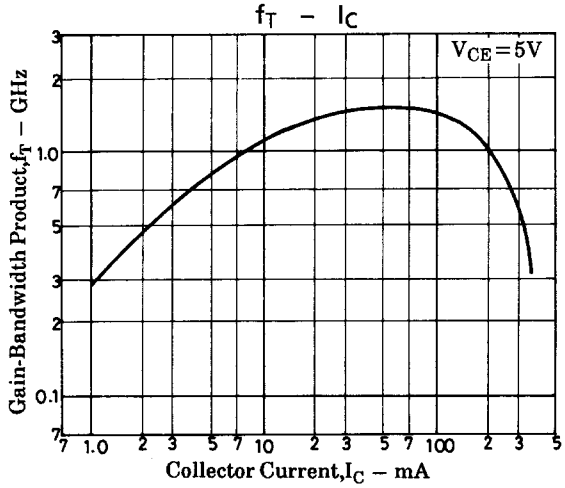
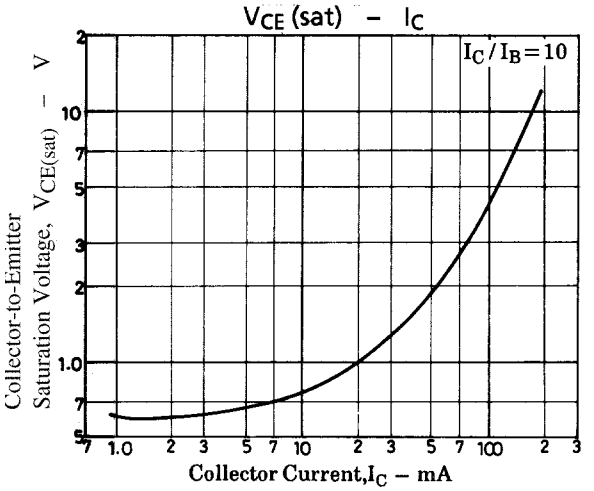
FP215

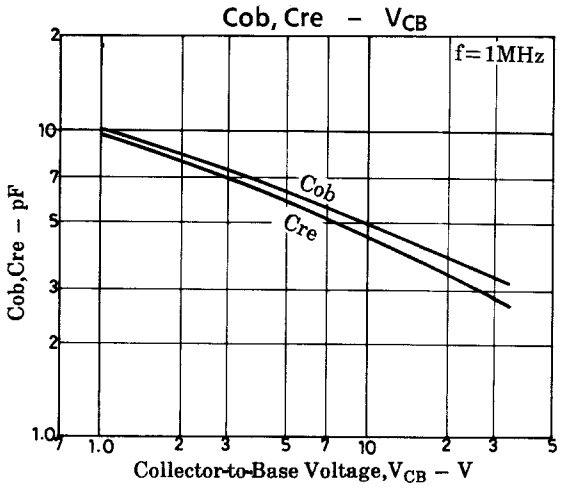

I_C – V_{CE}
Collector Current, I_C – mA
Collector-to-Emitter Voltage, V_{CE} – V
−2.0mA
−1.8mA
−1.6mA
−1.4mA
−1.2mA
−1.0mA
−0.8mA
−0.6mA
−0.4mA
−0.2mA
I_B=0

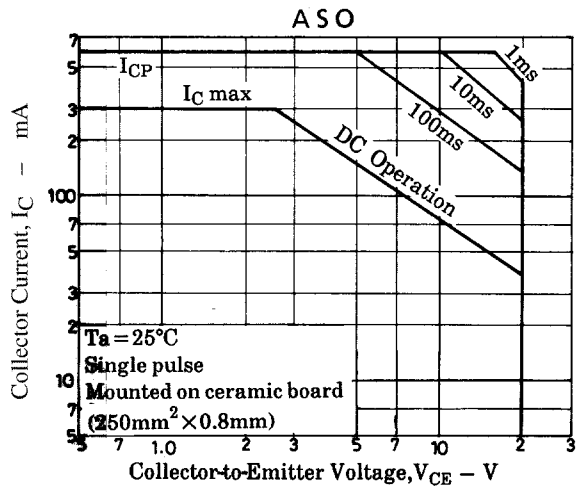

I_C – V_{CE}
Collector Current, I_C – mA
Collector-to-Emitter Voltage, V_{CE} – V
−5.0mA
−4.5mA
−4.0mA
−3.5mA
−3.0mA
−2.5mA
−2.0mA
−1.5mA
−1.0mA
−0.5mA
I_B=0

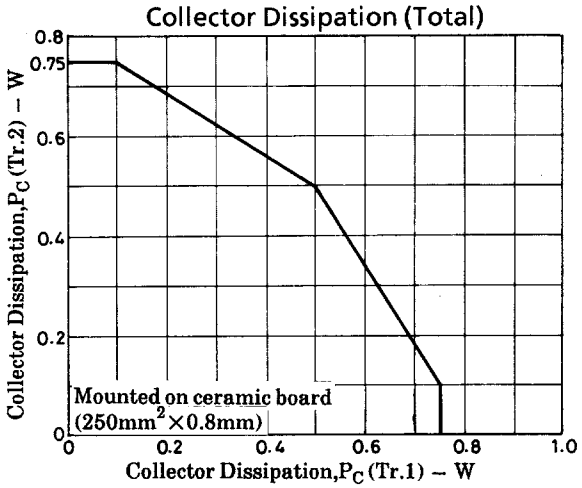

h_{FE} – I_C
DC Current Gain, h_{FE}
V_{CE}=5V
Collector Current, I_C – mA


f_T – I_C
Gain-Bandwidth Product, f_T – GHz
V_{CE}=5V
Collector Current, I_C – mA


V_{CE} (sat) – I_C
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$ – V
I_C / I_B=10
Collector Current, I_C – mA


Cob, Cre – V_{CB}
Cob, Cre – pF
f=1MHz
Cob
Cre
Collector-to-Base Voltage, V_{CB} – V


ASO
Collector Current, I_C – mA
I_{CP}
I_C max
1ms
10ms
100ms
DC Operation
Ta=25°C
Single pulse
Mounted on ceramic board
(250mm²×0.8mm)
Collector-to-Emitter Voltage, V_{CE} – V


Collector Dissipation (Total)
Collector Dissipation, P_C (Tr.2) – W
Mounted on ceramic board
(250mm²×0.8mm)
Collector Dissipation, P_C (Tr.1) – W