FC103

T-27-09

2066

PNP Epitaxial Planar
Silicon Composite Transistor

Low-Frequency General-Purpose Amp, Differential Amp Applications

Features

- Composite type with 2 transistors contained in the CP package currently in use, improving the mounting efficiency greatly.
- The FC103 is formed with two chips, being equivalent to the 2SA1622, placed in one package.
- Excellent in thermal equilibrium and pair capability and suitable for use in differential amp.
- Common emitter.

Absolute Maximum Ratings at Ta = 25°C

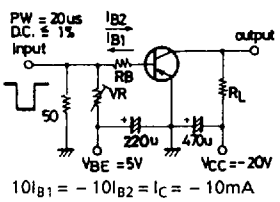
				unit
Collector to Base Voltage	V_{CBO}		−55	V
Collector to Emitter Voltage	V_{CEO}		−50	V
Emitter to Base Voltage	V_{EBO}		−6	V
Collector Current	I_C		−150	mA
Peak Collector Current	i_{cp}		−300	mA
Base Current	I_B		−30	mA
Collector Dissipation	P_C	1 unit	200	mW
Total Power Dissipation	P_T		300	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=-35V, I_E=0$			−0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4V, I_C=0$			−0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=-6V, I_C=-1mA$	160		600	
DC Current Gain Ratio	$h_{FE(small/large)}$	$V_{CE}=-6V, I_C=-1mA$	0.8	0.98		
Base to Emitter Voltage Drop	$V_{BE(large-small)}$	$V_{CE}=-6V, I_C=-1mA$		1.0	15	mV
Gain-Bandwidth Product	f_T	$V_{CE}=-6V, I_C=-10mA$		180		MHz
Output Capacitance	c_{ob}	$V_{CB}=-6V, f=1MHz$		2.9		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=-50mA, I_B=-5mA$		−0.11	−0.4	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=-50mA, I_B=-5mA$		−0.8	−1.0	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	−55			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	−50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	−6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		0.15		μs
Storage Time	t_{stg}	〃		0.60		μs
Fall Time	t_f	〃		0.20		μs

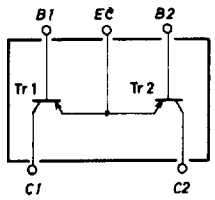
Note) The specifications shown above are for each individual transistor.
Marking : 103

Switching Time Test Circuit

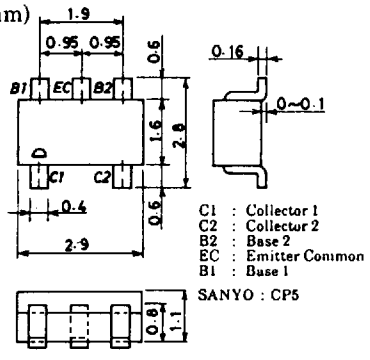


$10I_{B1} = -10I_{B2} = I_C = -10mA$

Electrical Connection

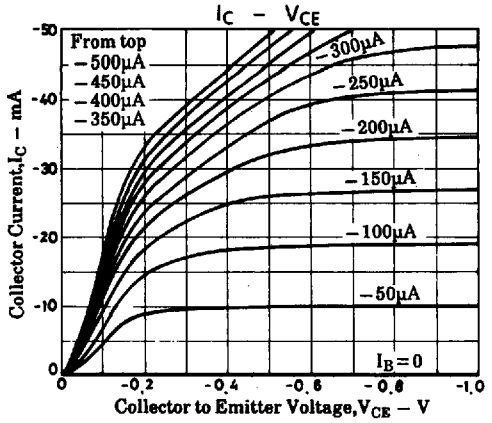


Case Outline 2066
(unit : mm)

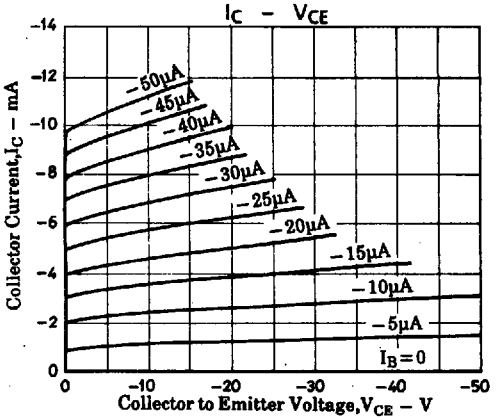


C1 : Collector 1
C2 : Collector 2
B2 : Base 2
EC : Emitter Common
B1 : Base 1
SANYO : CP5

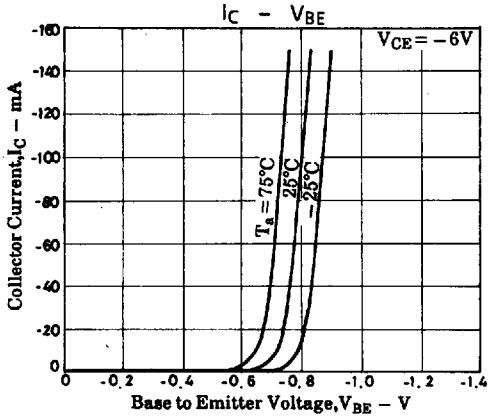
I_C – V_{CE}



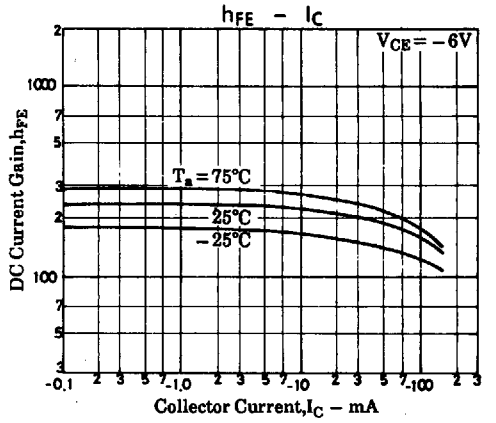
I_C – V_{CE}



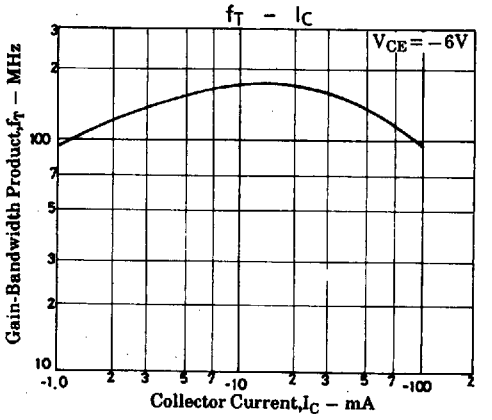
I_C – V_{BE}



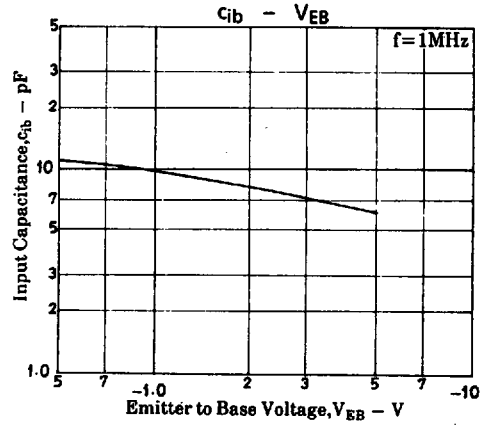
h_{FE} – I_C



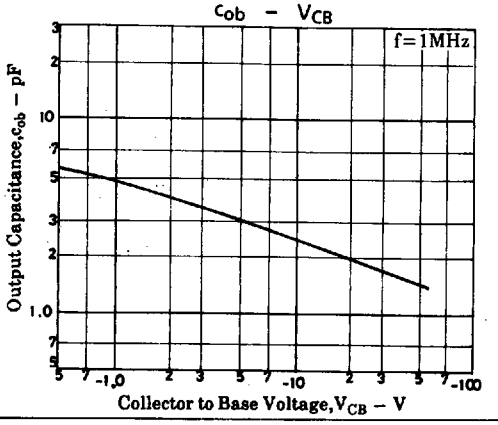
f_T – I_C



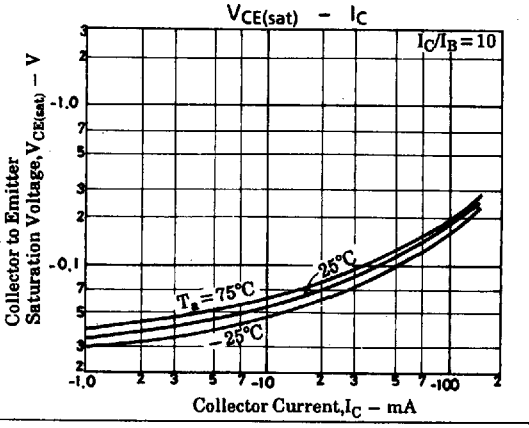
C_{ib} – V_{EB}

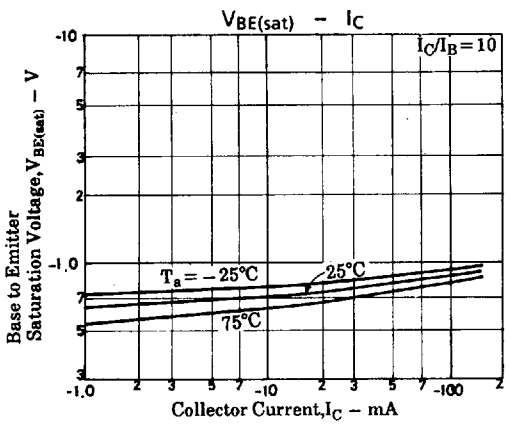


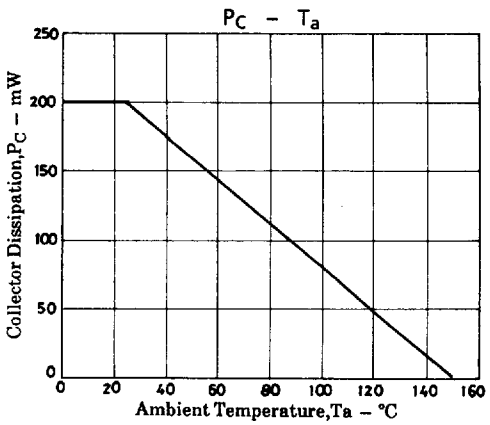
C_{ob} – V_{CB}



$V_{CE(sat)}$ – I_C




$V_{BE(sat)}$ – I_C
$I_C/I_B=10$
$T_a=-25°C$
25°C
75°C
Base to Emitter Saturation Voltage, $V_{BE(sat)}$ – V
Collector Current, I_C – mA


P_C – T_a
Collector Dissipation, P_C – mW
Ambient Temperature, Ta – °C

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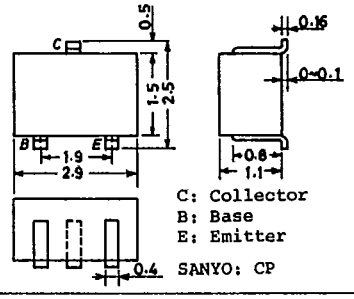
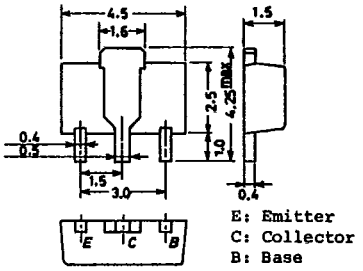
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- All of Sanyo surface mount transistor case outlines are illustrated below.
- All dimensions are in mm, and dimensions which are not followed by min. or max. are represented by typical values.
- No marking is indicated.

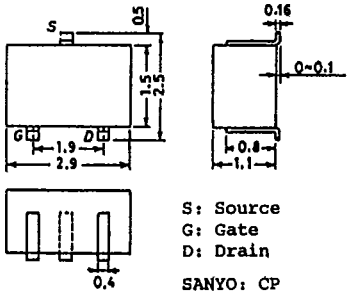
Case Outline—[2018A] unit: mm



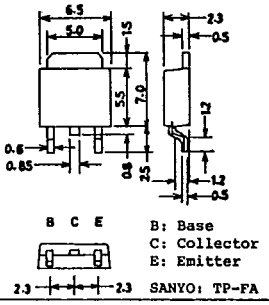
Case Outline—[2038] unit: mm



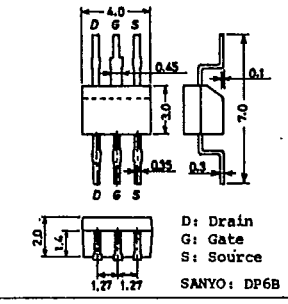
Case Outline—[2024A] unit: mm



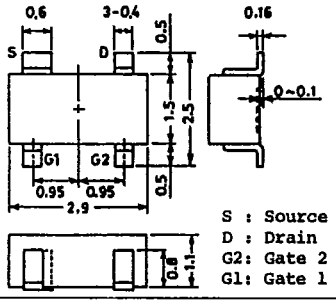
Case Outline—[2044] unit: mm



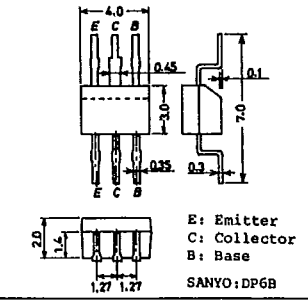
Case Outline—[2028A] unit: mm



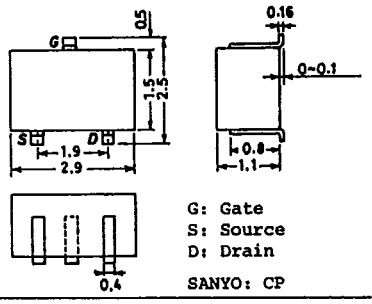
Case Outline—[2046] unit: mm



Case Outline—[2030A] unit: mm



Case Outline—[2050] unit: mm



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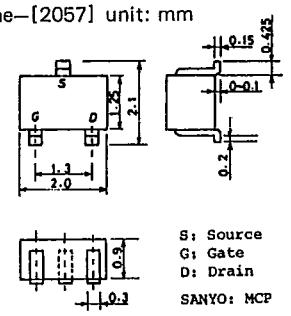
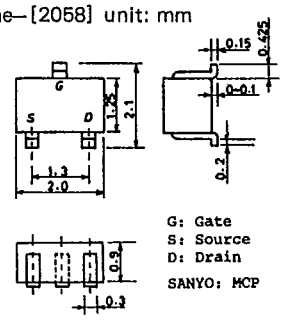
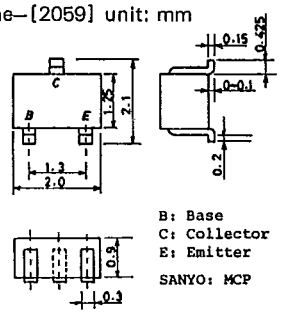
Case Outline—[2057] unit: mm



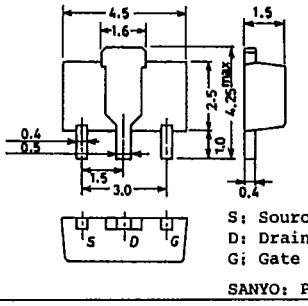
Case Outline—[2058] unit: mm



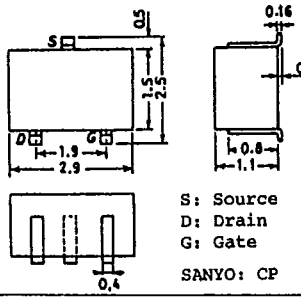
Case Outline—[2059] unit: mm



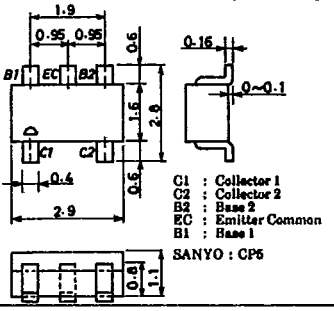
Case Outline—[2062] unit: mm



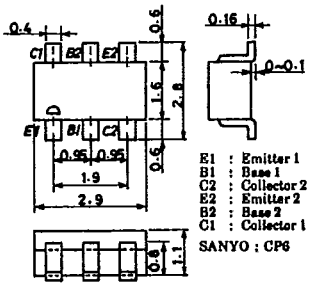
Case Outline—[2065] unit: mm



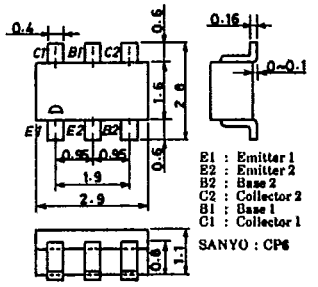
Case Outline—[2066] unit: mm



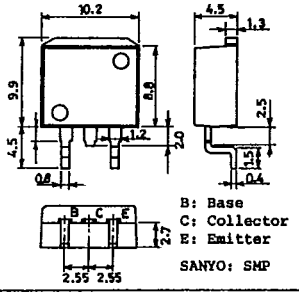
Case Outline—[2067] unit: mm



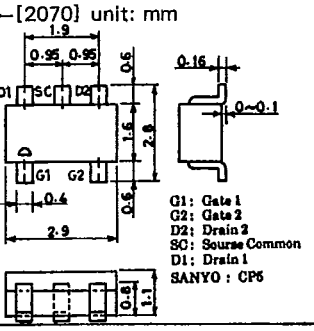
Case Outline—[2068] unit: mm



Case Outline—[2069] unit: mm



Case Outline—[2070] unit: mm



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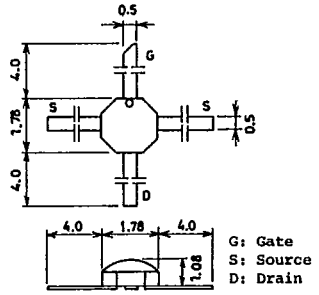
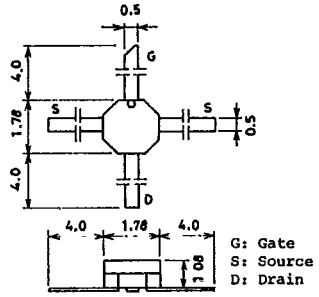
Case Outline—[2071] unit: mm



Case Outline—[2072] unit: mm



Case Outline—[2073] unit: mm