

2SA1688

T-31-15

2059

PNP Epitaxial Planar Silicon Transistor

High-Frequency General-Purpose Amp Applications

©2798

Applications

- Ideally suited for use in FM RF amplifiers, mixers, oscillators, converters, IF amplifiers

Features

- High power gain : PG=22dB typ (f=100MHz)
- Very small-sized package permitting the 2SA1688-applied sets to be made small and slim

Absolute Maximum Ratings at Ta=25°C

		unit
Collector to Base Voltage	V _{CB0}	-30 V
Collector to Emitter Voltage	V _{CE0}	-20 V
Emitter to Base Voltage	V _{EB0}	-5 V
Collector Current	I _C	-30 mA
Collector Dissipation	P _C	150 mW
Junction Temperature	T _j	150 °C
Storage Temperature	T _{stg}	-55 to +150 °C

Electrical Characteristics at Ta=25°C

		min	typ	max	unit
Collector Cutoff Current	I _{CB0}	V _{CB} =-10V, I _E =0		-0.1	μA
Emitter Cutoff Current	I _{EB0}	V _{EB} =-4V, I _C =0		-0.1	μA
DC Current Gain	h _{FE}	V _{CE} =-6V, I _C =-1mA	*60	*270	
Gain-Bandwidth Product	f _T	V _{CE} =-6V, I _C =-1mA	150	230	MHz
Reverse Transfer Capacitance	c _{re}	V _{CB} =-6V, f=1MHz	1.1	1.7	pF
Base to Collector Time Constant	r _{bb} 'C _b	V _{CE} =-6V, I _C =-1mA, f=31.9MHz	11	20	ps
Power Gain	PG	See specified Test Circuit.	22		dB
Noise Figure	NF	V _{CE} =-6V, I _C =-1mA, f=100MHz	2.5		dB

* : The 2SA1688 is classified by 1mA h_{FE} as follows:

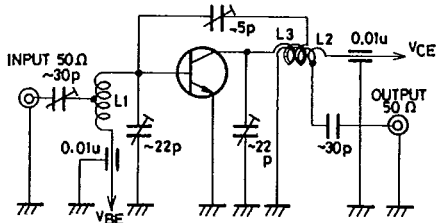
60	3	120	90	4	180	135	5	270
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(Note) Marking : E

h_{FE} rank : 3,4,5

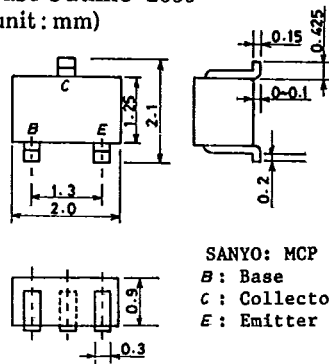
· For CP package, use the 2SA1256

NF,PG Test Circuit



- L1 : 1mm \varnothing plated wire, 10mm \varnothing 5T, tap : 2T from V_{BE} side
- L2 : 1mm \varnothing plated wire, 10mm \varnothing 7T, tap : 1T from V_{CE} side
- L3 : 1mm \varnothing enameled wire, 10mm \varnothing 3T

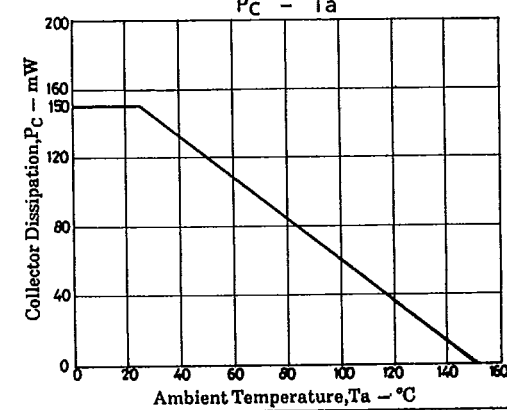
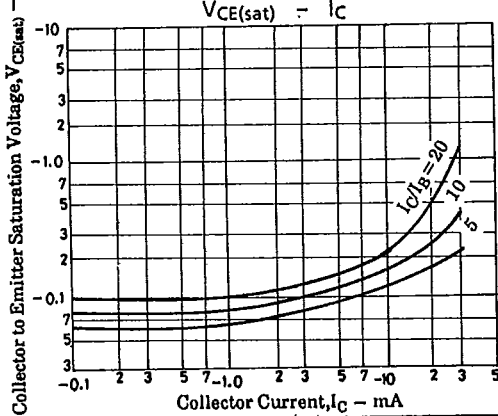
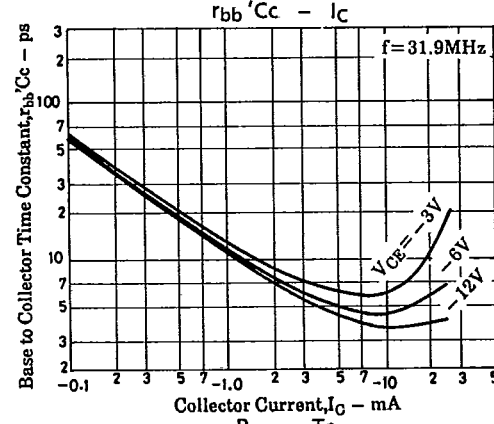
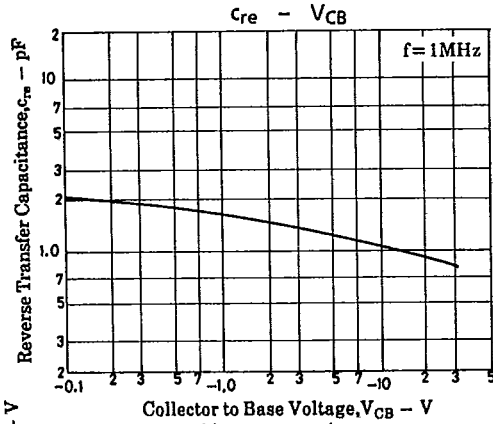
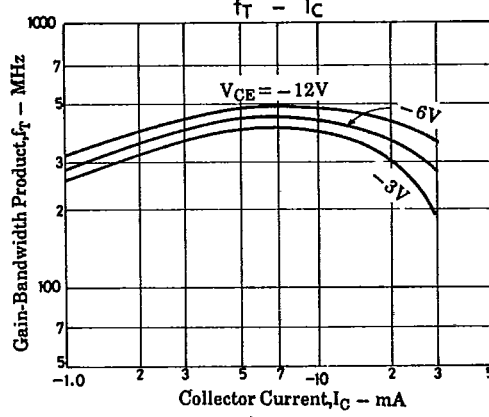
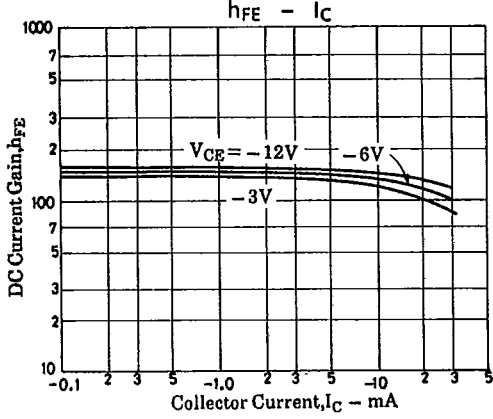
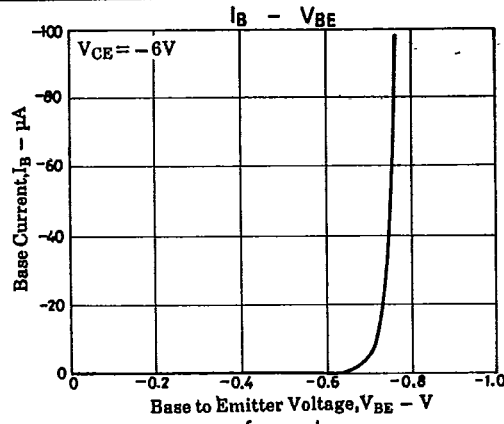
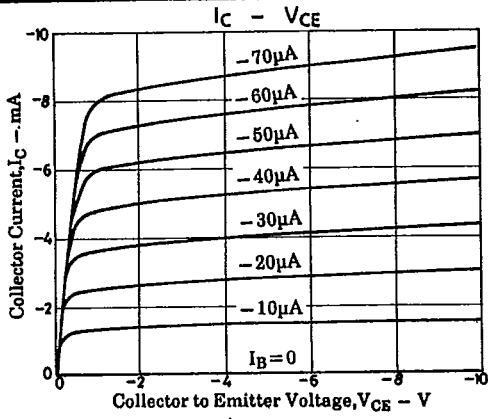
Case Outline 2059 (unit : mm)



SANYO: MCP
 B : Base
 C : Collector
 E : Emitter

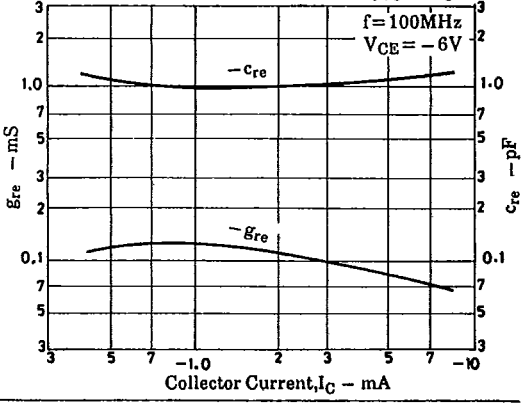
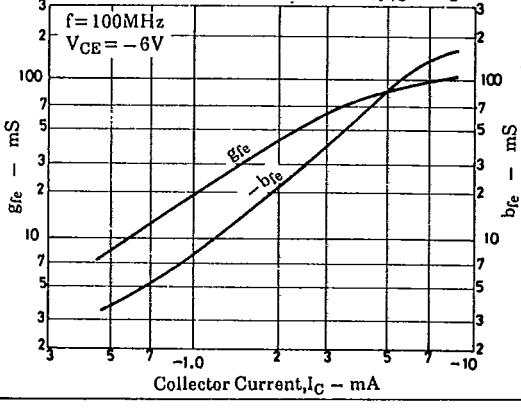
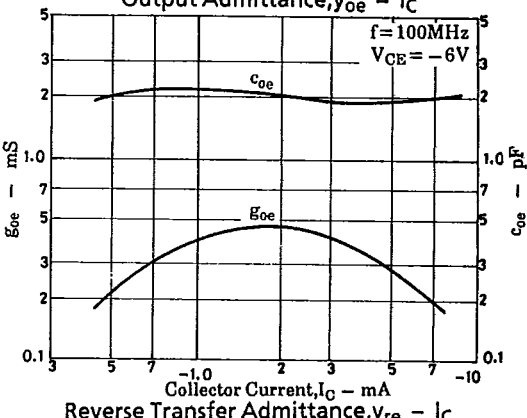
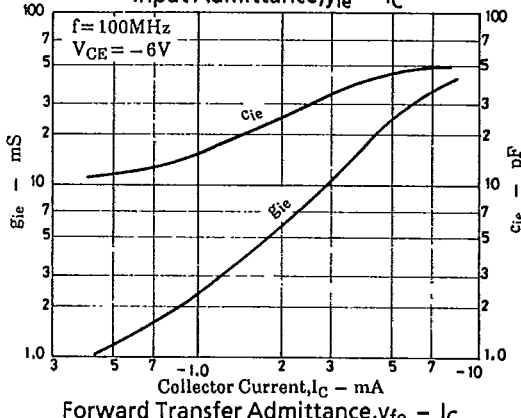
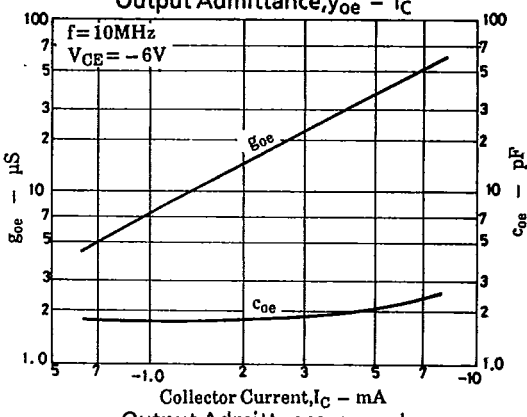
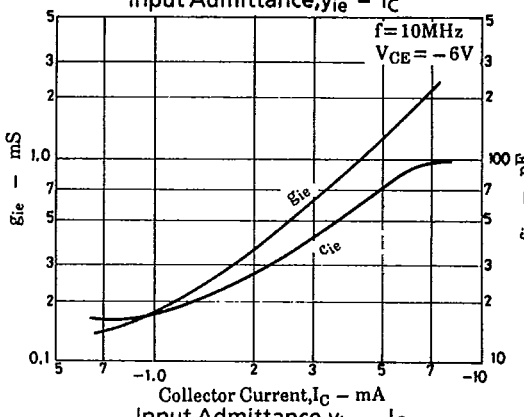
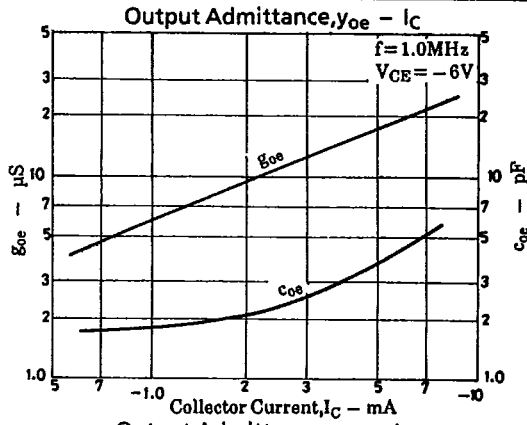
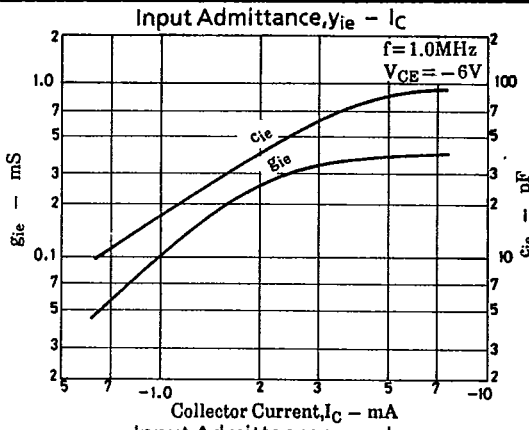
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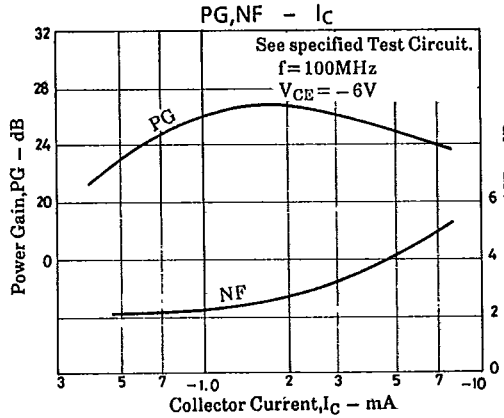
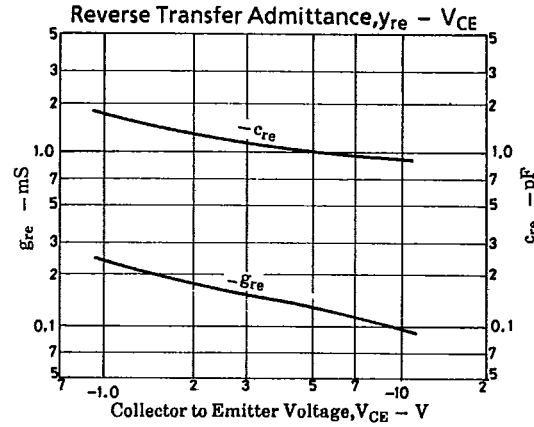
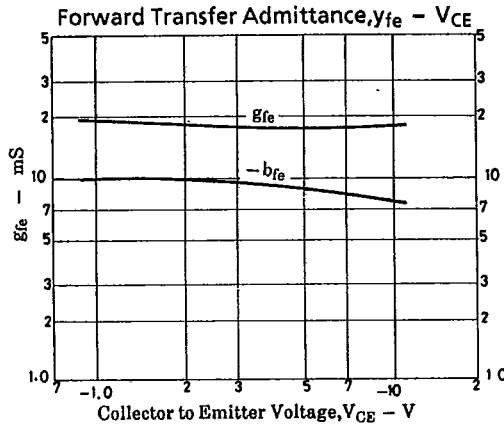
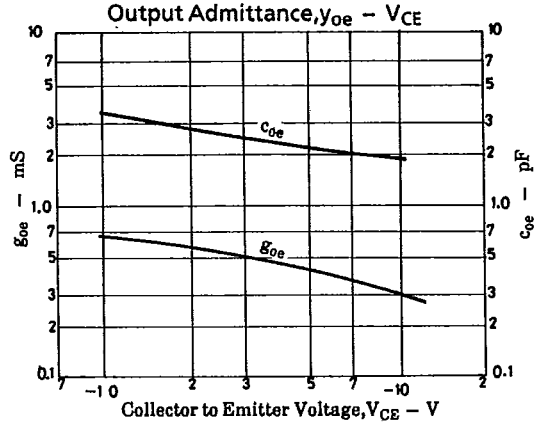
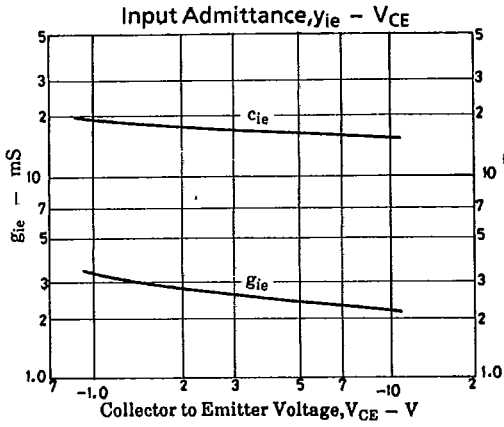
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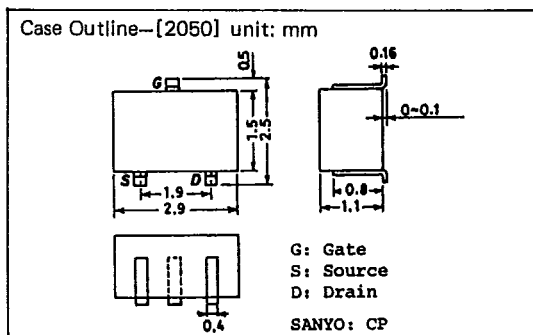
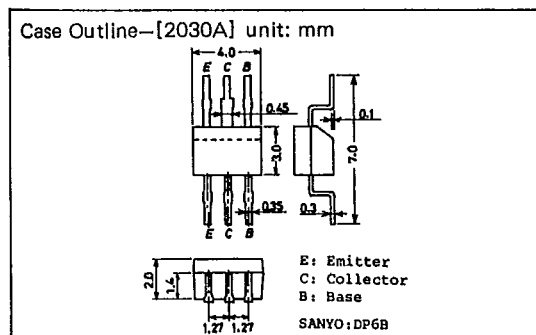
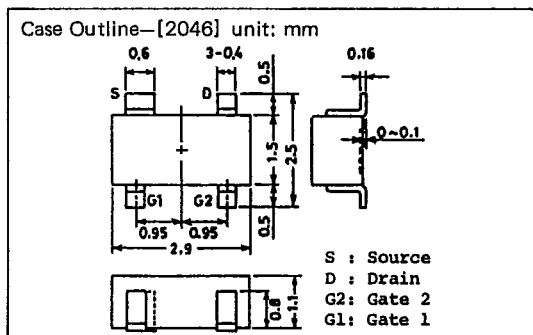
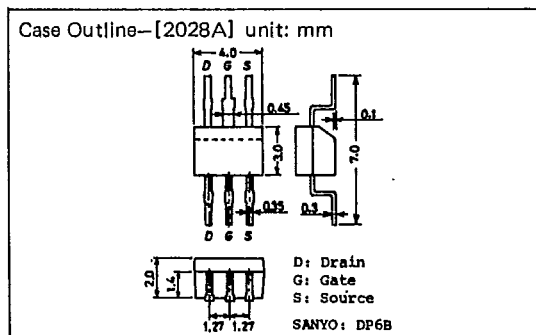
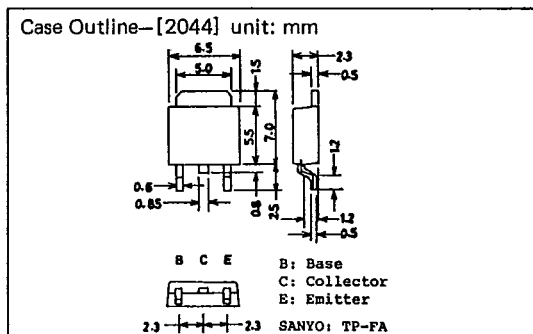
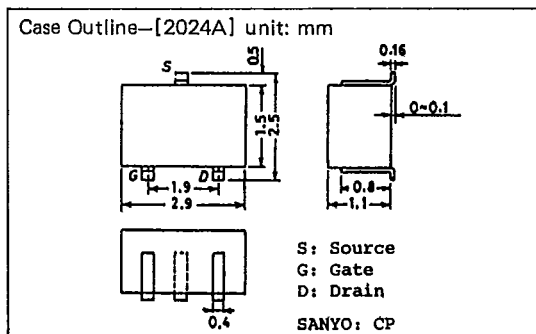
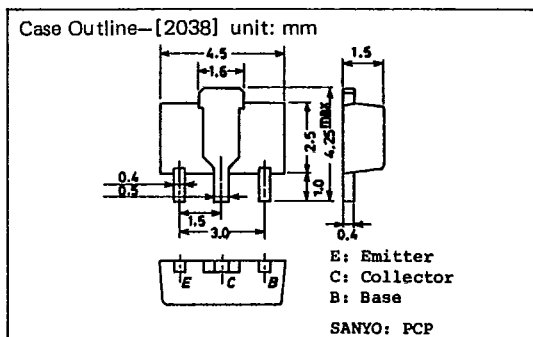
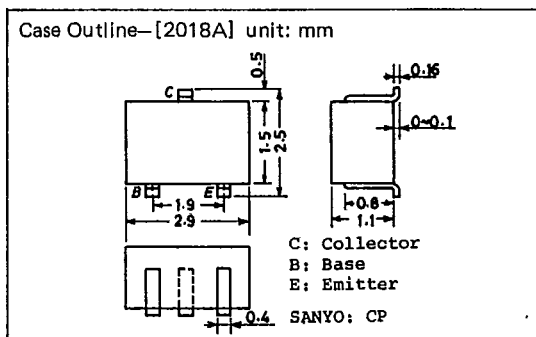
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T-91-20

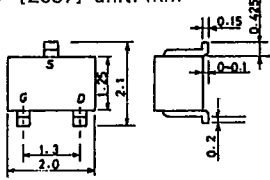
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- 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.



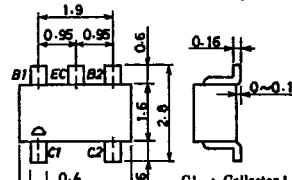
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Case Outline—[2057] unit: mm



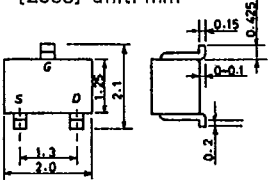
S: Source
G: Gate
D: Drain
SANYO: MCP

Case Outline—[2066] unit: mm



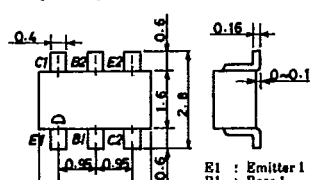
C1 : Collector 1
C2 : Collector 2
B2 : Base 2
EC : Emitter Common
B1 : Base 1
SANYO : CP6

Case Outline—[2058] unit: mm



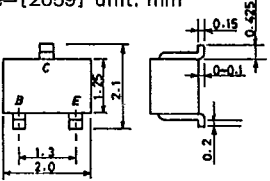
G: Gate
S: Source
D: Drain
SANYO: MCP

Case Outline—[2067] unit: mm



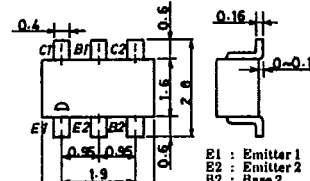
E1 : Emitter 1
B1 : Base 1
C2 : Collector 2
E2 : Emitter 2
B2 : Base 2
C1 : Collector 1
SANYO : CP6

Case Outline—[2059] unit: mm



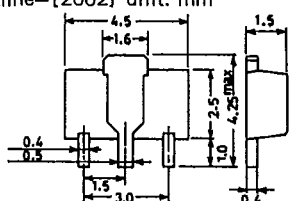
B: Base
C: Collector
E: Emitter
SANYO: MCP

Case Outline—[2068] unit: mm



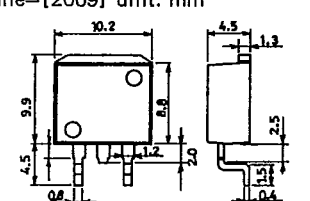
B1 : Emitter 1
E2 : Emitter 2
B2 : Base 2
C2 : Collector 2
B1 : Base 1
C1 : Collector 1
SANYO : CP6

Case Outline—[2062] unit: mm



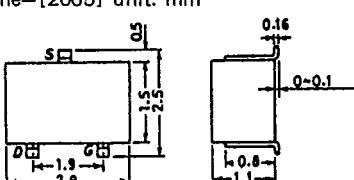
S: Source
D: Drain
G: Gate
SANYO: PCP

Case Outline—[2069] unit: mm



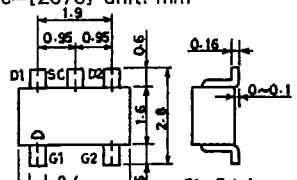
B: Base
C: Collector
E: Emitter
SANYO: SMP

Case Outline—[2065] unit: mm



S: Source
D: Drain
G: Gate
SANYO: CP

Case Outline—[2070] unit: mm



G1 : Gate 1
G2 : Gate 2
D2 : Drain 2
SC : Source Common
D1 : Drain 1
SANYO : CP6

T-9120

