2SC3772

T-31-17

2018A

NPN Epitaxial Planar Silicon Transistor

UHF OSC, MIX, Low-Noise Wide-Band Amp Applications

Applications

. UHF frequency converters, local oscillators, low-noise amplifiers, wide-band amplifiers.

Features

. Small noise figure: NF=2.5dB typ(f=0.9GHz).
. High power gain: MAG=12dB typ(f=0.9GHz).
. High cutoff frequency: f_T=3.0GHz typ.

Absolute Maximum Ratings at Ta=25°C

			unit
Collector to Base Voltage	V_{CBO}	25	V
Collector to Emitter Voltage	V_{CEO}	16	V
Emitter to Base Voltage	V_{EBO}	3	V
Collector Current	I_C	70	mA
Base Current	I_B	20	mA
Collector Dissipation	P_C	250	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to +150	°C

Electrical Characteristics at Ta=25°C

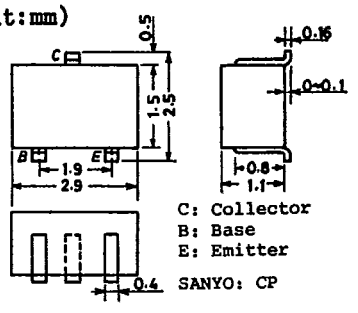
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=16V,I_E=0			1.0	uA
Emitter Cutoff Current	I_{EBO}	V_{EB}=2V,I_C=0			10	uA
DC Current Gain	h_{FE}	V_{CE}=10V,I_C=10mA	40*		200*	
Gain-Bandwidth Product	f_T	V_{CE}=10V,I_C=10mA	1.5	3.0		GHz
Output Capacitance	C_{ob}	V_{CB}=10V,f=1MHz		0.65	1.0	pF
Reverse Transfer Capacitance	C_{re}	V_{CB}=10V,f=1MHz		0.45		pF
Forward Transfer Gain	$\|S21e\|^2$	V_{CE}=10V,I_C=10mA,f=0.9GHz	7	9		dB
Maximum Available Power Gain	MAG	V_{CE}=10V,I_C=10mA,f=0.9GHz		12		dB
Noise Figure	NF	V_{CE}=10V,I_C=3mA,f=0.9GHz, See specified Test Circuit.		2.5		dB

*: The 2SC3772 is classified by 10mA h_{FE} as follows:

40	2	80	60	3	120	100	4	200

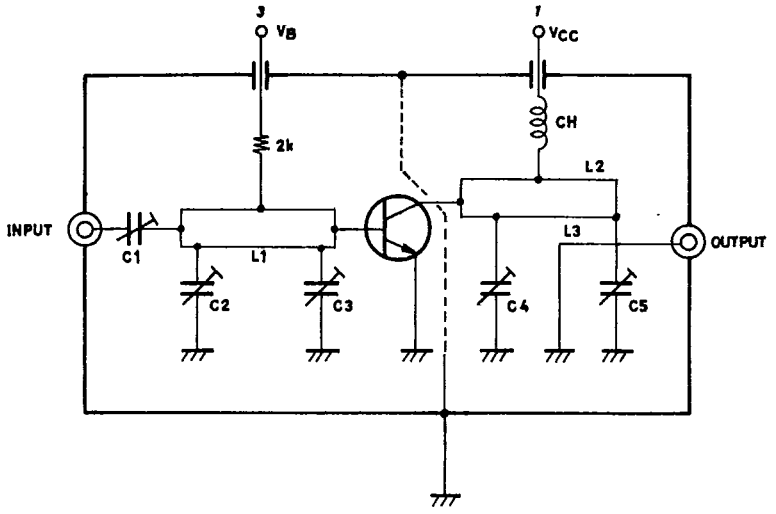
(Note) Marking :LY
h_{FE} rank :2,3,4

Case Outline 2018A
(unit:mm)



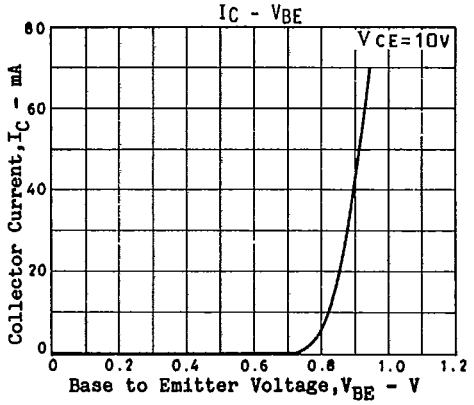
C: Collector
B: Base
E: Emitter
SANYO: CP

NF Test Circuit

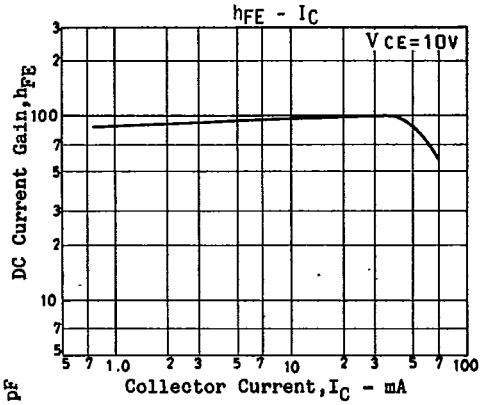


	900MHz
C1	~5pF
C2	~10pF
C3	~10pF
C4	~10pF
C5	~10pF
L1	W≒1.5mm, l≒25mm strip line
L2	W≒4mm, l≒25mm strip line
L3	0.5φ, l≒40mm
CH	2t+bead core

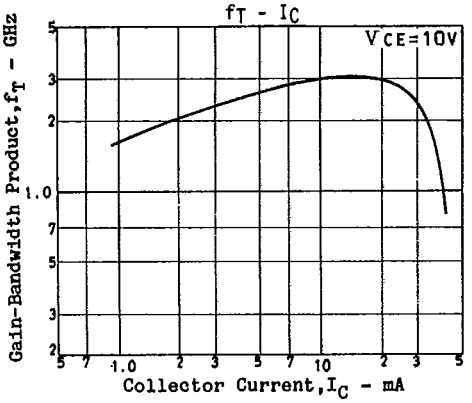
I_C - V_{BE}



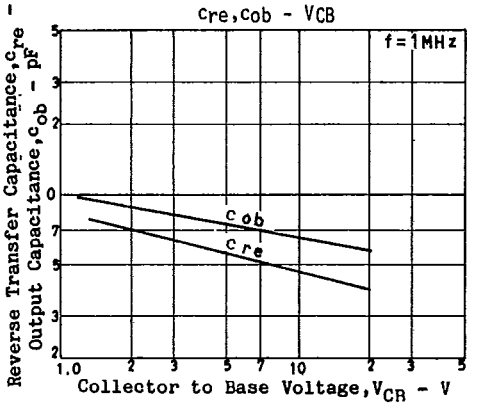
h_{FE} - I_C



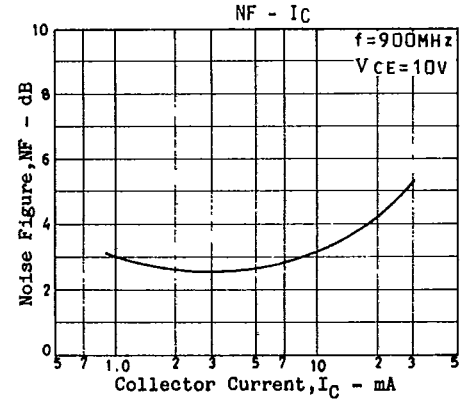
f_T - I_C



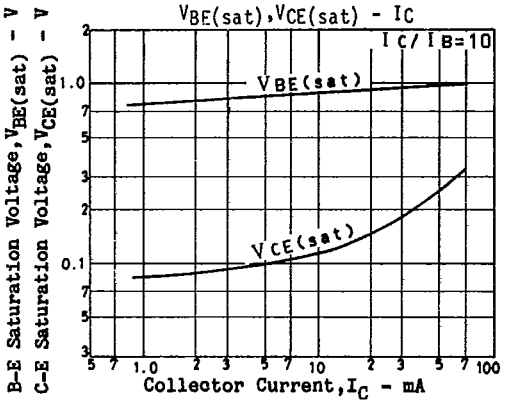
Cre, Cob - V_{CB}



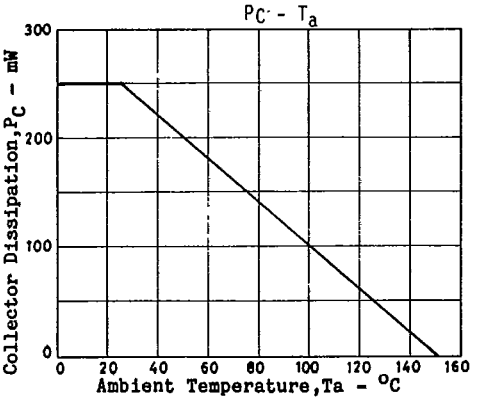
NF - I_C



$V_{BE(sat)}$, $V_{CE(sat)}$ - I_C



P_C - T_a



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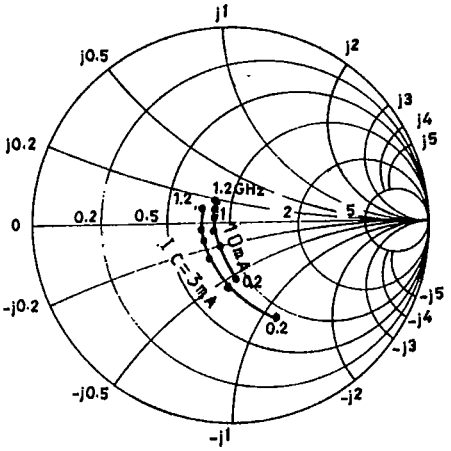
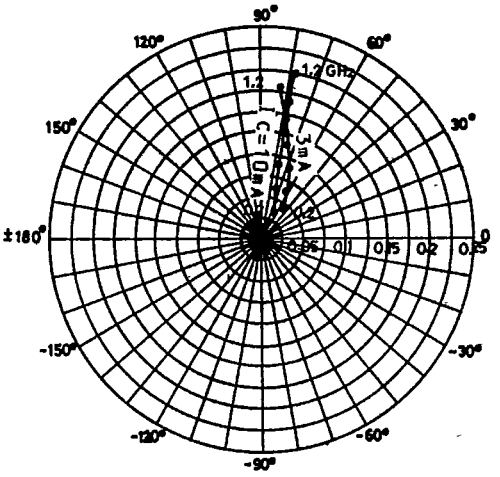
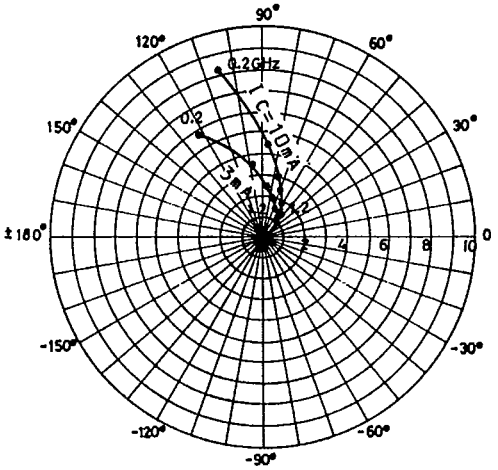
S11e : VCE=10V
f=200MHz step



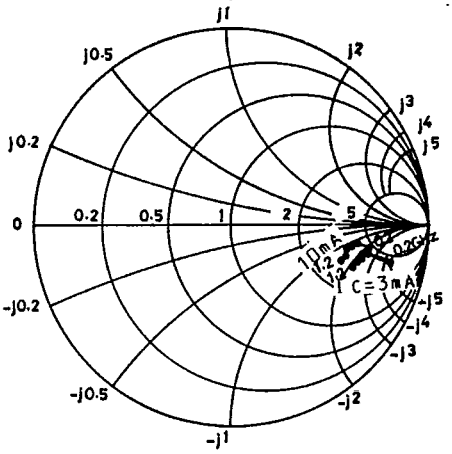
S12e : VCE=10V
f=200MHz step



S21e : VCE=10V
f=200MHz step



S22e : VCE=10V
f=200MHz step



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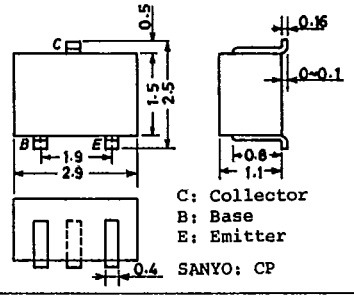
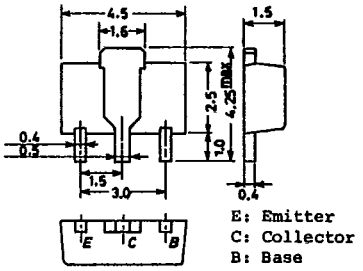
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- 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.

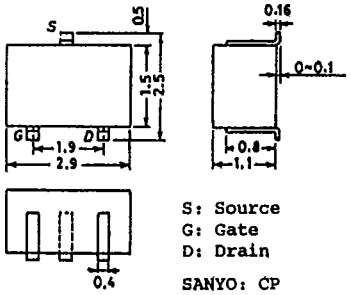
Case Outline—[2018A] unit: mm



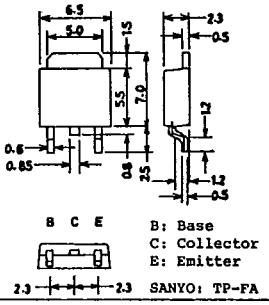
Case Outline—[2038] unit: mm



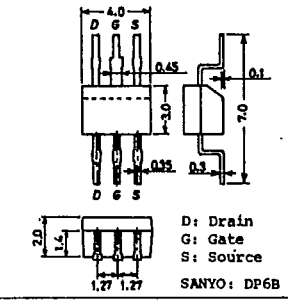
Case Outline—[2024A] unit: mm



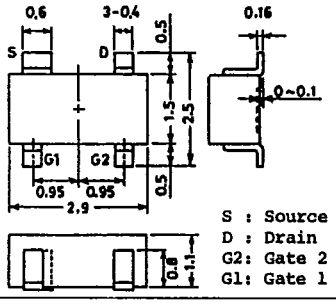
Case Outline—[2044] unit: mm



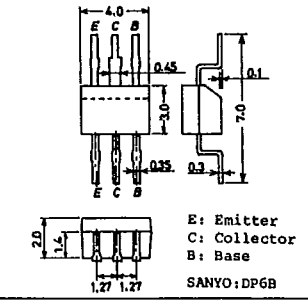
Case Outline—[2028A] unit: mm



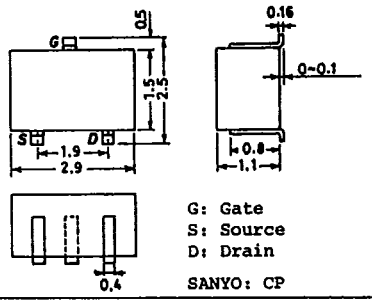
Case Outline—[2046] unit: mm



Case Outline—[2030A] unit: mm



Case Outline—[2050] unit: mm



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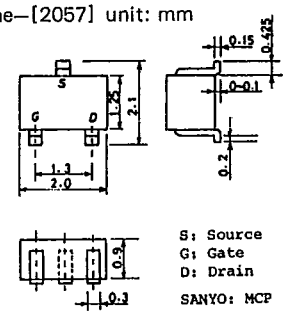
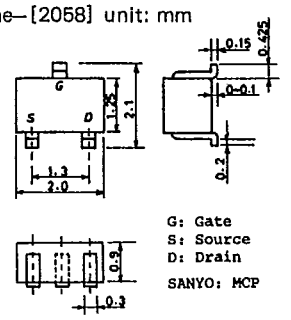
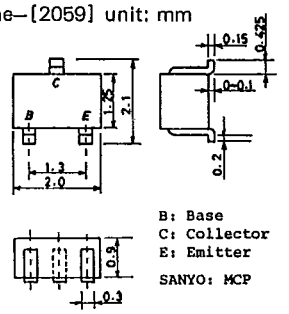
Case Outline—[2057] unit: mm



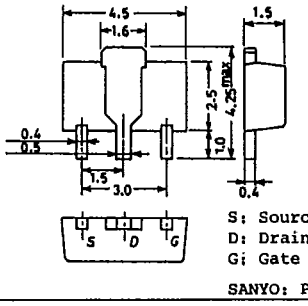
Case Outline—[2058] unit: mm



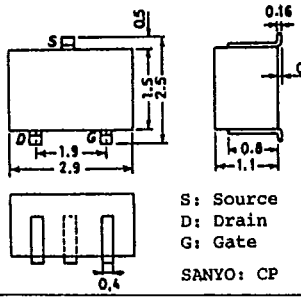
Case Outline—[2059] unit: mm



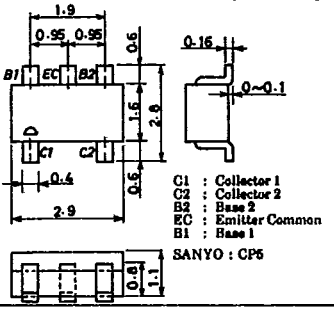
Case Outline—[2062] unit: mm



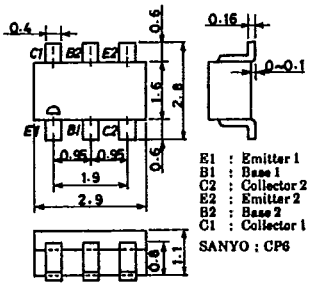
Case Outline—[2065] unit: mm



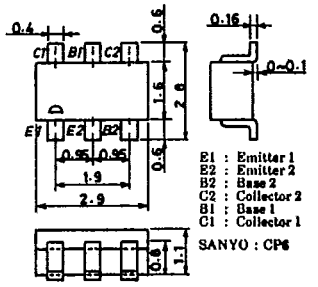
Case Outline—[2066] unit: mm



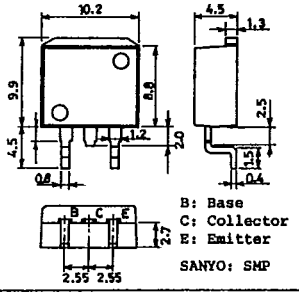
Case Outline—[2067] unit: mm



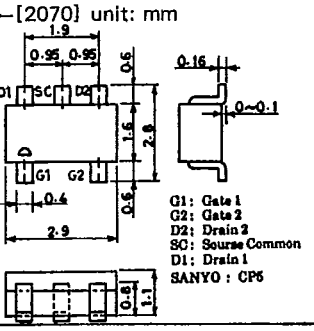
Case Outline—[2068] unit: mm



Case Outline—[2069] unit: mm



Case Outline—[2070] unit: mm



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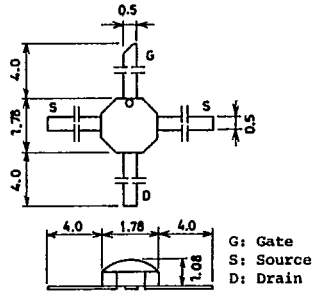
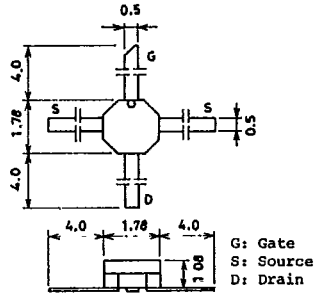
Case Outline—[2071] unit: mm



Case Outline—[2072] unit: mm



Case Outline—[2073] unit: mm