



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SA1705 — PNP Epitaxial Planar Silicon Transistor

Low-Frequency Power Amplifier Applications

Applications

- Voltage regulators, relay drivers, lamp drivers

Features

- Adoption of FBET process
- Fast switching speed

Specifications

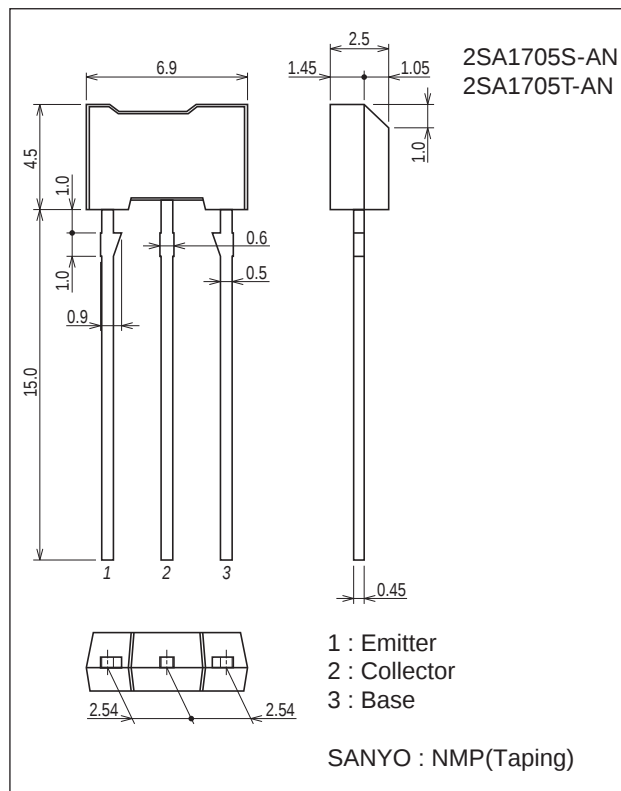
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		-60	V
Collector-to-Emitter Voltage	V _{CE0}		-50	V
Emitter-to-Base Voltage	V _{EB0}		-5	V
Collector Current	I _C		-1	A
Collector Current (Pulse)	I _{CP}		-2	A
Collector Dissipation	P _C		0.9	W
Junction Temperature	T _j		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Package Dimensions

unit : mm (typ)

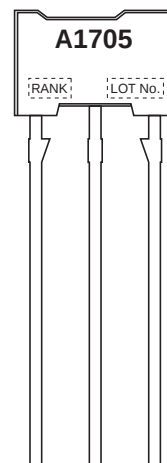
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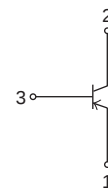
Product & Package Information

- Package : NMP(Taping)
- JEITA, JEDEC : SC-71
- Minimum Packing Quantity : 2,500 pcs./box

Marking(NMP(Taping))



Electrical Connection



SANYO Semiconductor Co., Ltd.

<http://www.sanyosemi.com/en/network/>

2SA1705

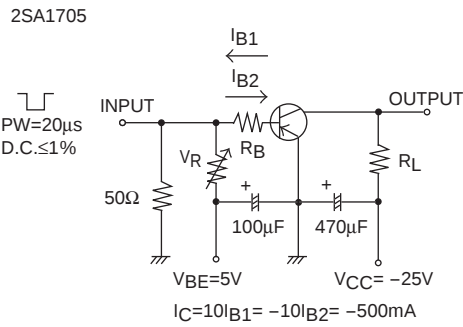
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =-50V, I _E =0A			-100	nA
Emitter Cutoff Current	IEBO	V _{EB} =-4V, I _C =0A			-100	nA
DC Current Gain	h _{FE1}	V _{CE} =-2V, I _C =-100mA	140*		400*	
	h _{FE2}	V _{CE} =-2V, I _C =-1A	30			
Gain-Bandwidth Product	f _T	V _{CE} =-10V, I _C =-50mA		150		MHz
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =-500mA, I _B =-50mA		-180	-500	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =-500mA, I _B =-50mA		-0.9	-1.2	V
Output Capacitance	C _{ob}	V _{CB} =-10V, f=1MHz		12		pF
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =-10μA, I _E =0A	-60			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =-1mA, R _{BE} =∞	-50			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =-10μA, I _C =0A	-5			V
Turn-ON Time	t _{on}	See specified Test Circuit.		40		ns
Storage Time	t _{stg}			300		ns
Fall Time	t _f			30		ns

* : The 2SA1705 is classified by 100mA h_{FE} as follows :

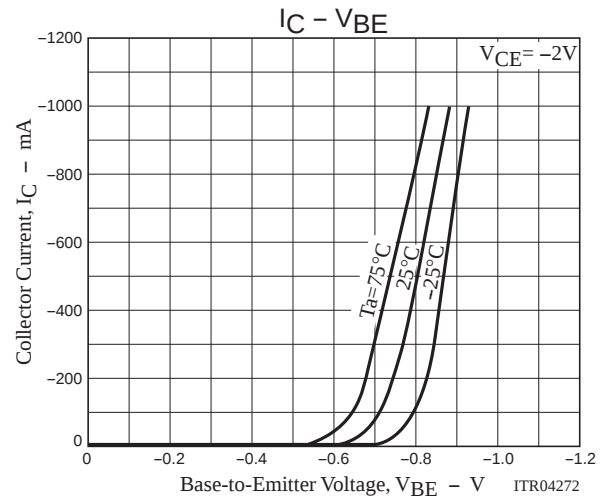
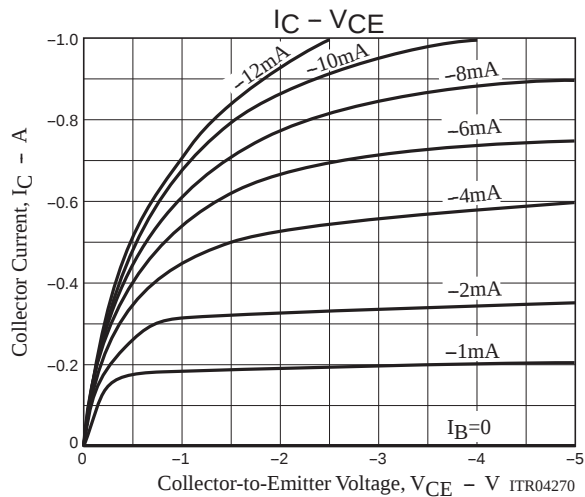
Rank	S	T
h _{FE}	140 to 280	200 to 400

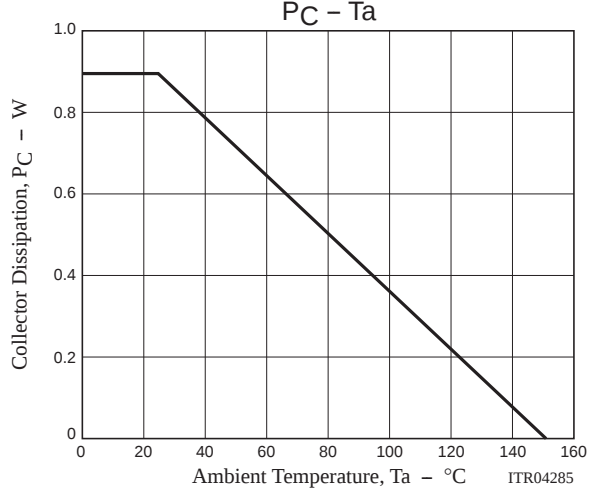
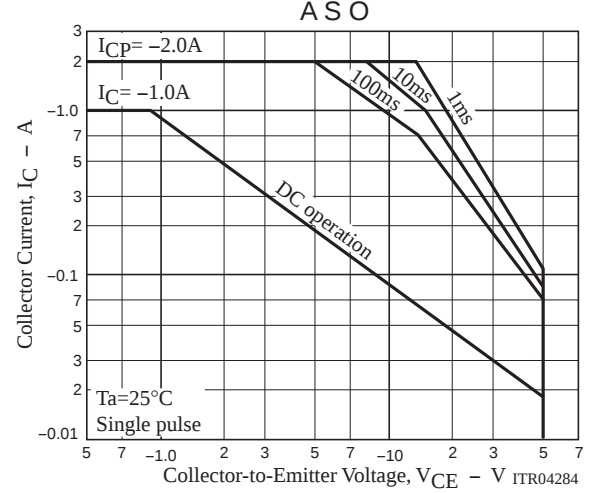
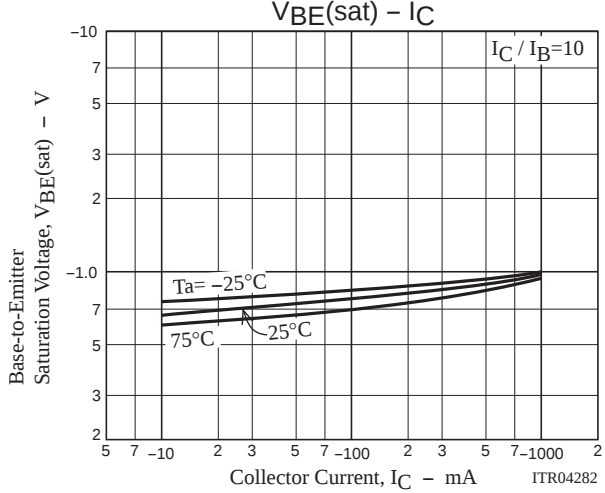
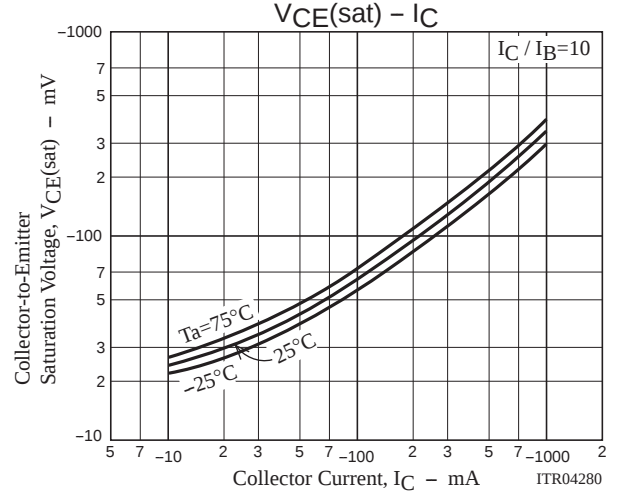
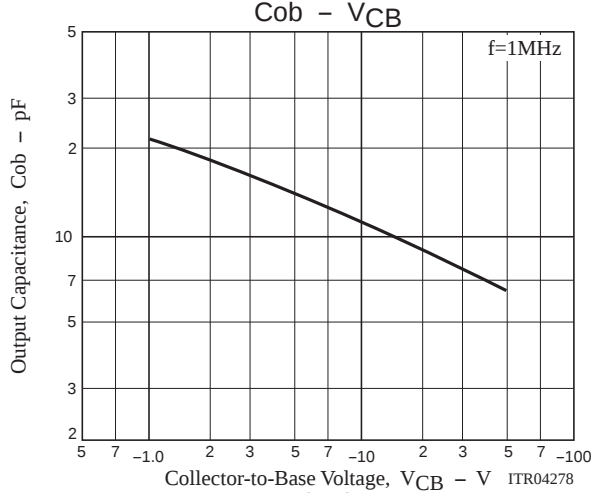
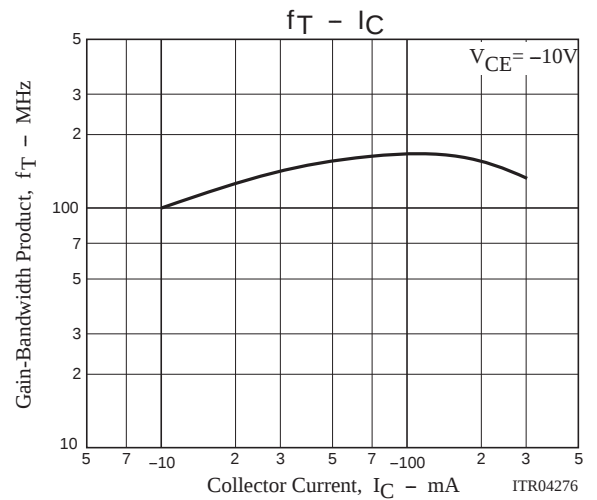
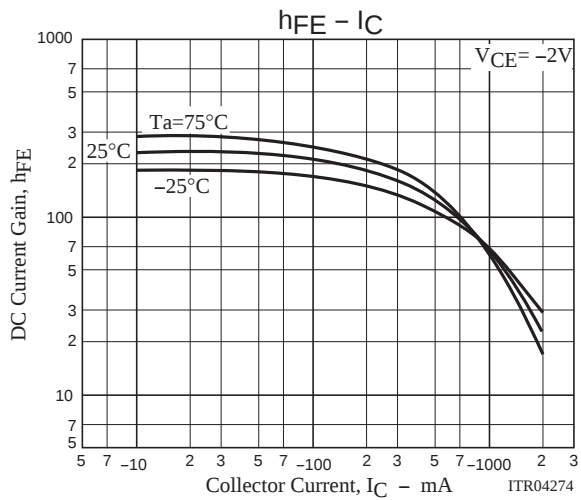
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
2SA1705S-AN	NMP(Taping)	2,500pcs./box	Pb Free
2SA1705T-AN	NMP(Taping)	2,500pcs./box	





Bag Packing Specification

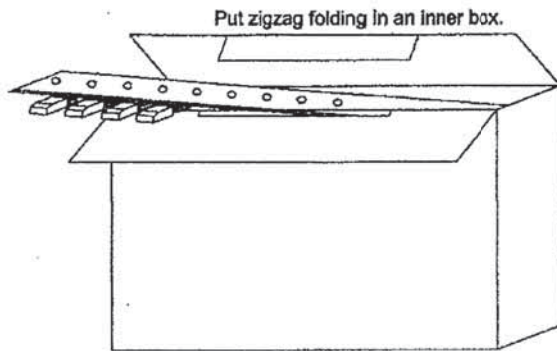
2SA1705S-AN, 2SA1705T-AN

NMP (Zigzag folding)

Storage package Outline name	Package type	Maximum Number of devices contained (pcs.)		Packing format	
		Inner box No.	Storage quantity	Outer box (C—6)	Outer box (C—8)
NMP	AN/AZ	C—3 Inner box Dimensions :mm(external) 330×45×125	2,500	8 inner boxes contained(20,000pcs.) Outer box Dimensions:mm(external) 585×345×195	4 inner boxes contained(10,000pcs.) Outer box Dimensions:mm(external) 345×300×195

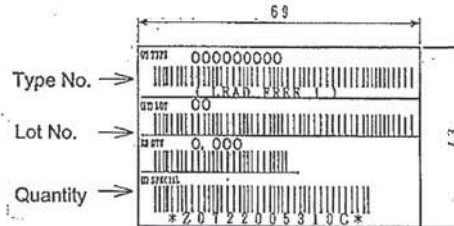
1. Packing format

Packing method



2. Bar code label

(Unit : mm)

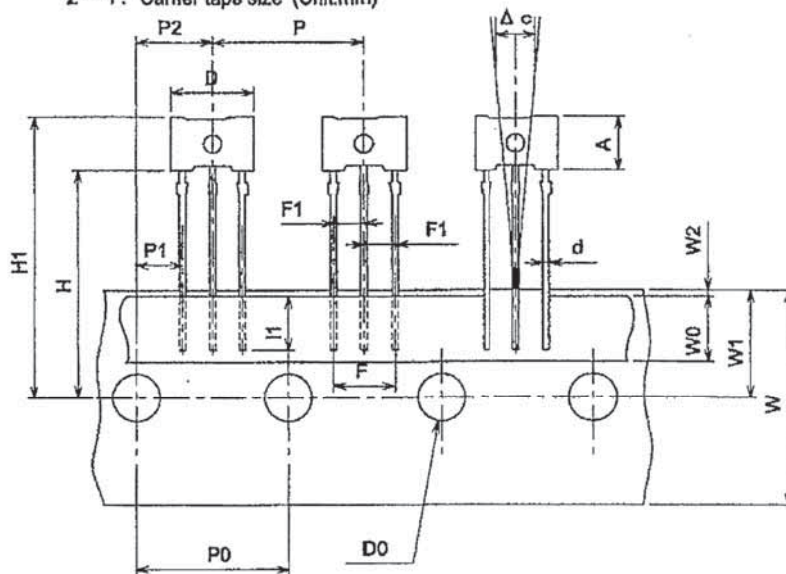


*LEAD FREE 1:

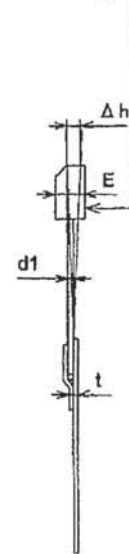
Lead-free External terminal surface treatment product.

2. Taping specifications

2—1. Carrier tape size (Unit:mm)



Marking surface



2—2. Taping size standard

Item	Symbol	Standard	Tolerance
Work piece outside diameter	D	6.9	±0.2
	E	2.5	±0.2
Work piece height	A	4.5	±0.2
Lead wire diameter	d	0.5	±0.1
Lead wire thickness	d1	0.45	±0.1
Bonded lead wire	I1	3.0MIN	
Pitch between products	P	12.7	±0.5
Pitch between perforations	P0	12.7	±0.2
Total pitch for 21 perforations	P0×20	254.0	±1.0
Distance between lead wire	F	5.0	+0.8 -0.2
Lead wire pitch distance	F1	2.54	+0.4 -0.1
Displacement of perforations	P1	3.81	±0.3
	P2	6.35	±0.3
Displacement of tape	W2	0~0.5	

Unit:mm

Item	Symbol	Standard	Tolerance
Tape width	W	18.0	±0.5
Adhesive tape	W0	6.0	±0.5
Displacement of perforations	W1	9.0	±0.5
Work piece bottom surface position	H	19.0	+1.0 -0.5
Work piece upper limit position	H1	23.5	±1.0
Perforations diameter	D0	φ4.0	±0.2
Tape thickness (total thickness)	t	0.6	±0.2
Product inclination	Δc	0	±0.7
Product inclination	Δh	0	±1.0

2—3. Taping structure

The diagram illustrates the taping structure for a composite material. It shows a cross-section of a board with an inserted section. The inserted section is labeled 'B' and 'E'. The board is labeled 'Board'. The taping process is labeled 'Thermo-compression taping'. The diagram shows the 'Empty section' and 'Inserted section' of the board. The 'Marking surface' is indicated on the right. The 'Marked in red' area is shown at the bottom right.

- ## Outline Drawing

Mass (g)	Unit
0.275	mm
* For reference	

Technical drawing of a 3D printed part, showing three views: front, side, and top.

Front View Dimensions:

- Overall width: 6.9 ± 0.2
- Overall height: 4.5 ± 0.2
- Top width (inner): 1.0 ± 0.2
- Support width: 0.6 ± 0.1
- Support height: 15 ± 0.5
- Distance between supports: 0.9 ± 0.15
- Support spacing: $3 - 0.5 \pm 0.1$

Side View Dimensions:

- Overall width: 2.5 ± 0.2
- Overall height: 1.0
- Support width: 0.45 ± 0.1

Top View Dimensions:

- Overall width: 2.54 ± 0.1
- Overall height: 2.54 ± 0.1

Labels:

- *1: Administration No.
- *2: Rank

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