Ordering number : EN7508A

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

NPN Epitaxial Planar Silicon Transistor

15C01SS — Low-Frequency General-Purpose Amplifier Applications

Applications

- Low-frequency Amplifier, muting circuit

Features

- Large current capacity
- Low collector-to-emitter saturation voltage (resistance) : R_{CE}(sat) typ=0.58Ω [I_C=0.7A, I_B=35mA]
- Ultrasmall, slim flat-lead package (1.4mm×0.8mm×0.6mm)
- Small ON-resistance (Ron)

Specifications

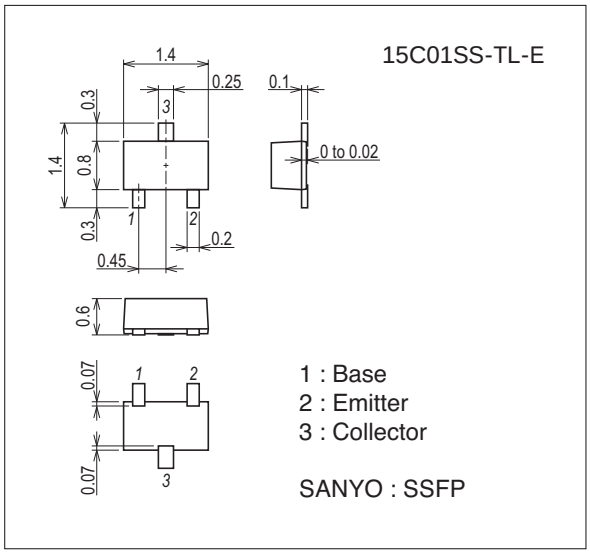
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		20	V
Collector-to-Emitter Voltage	V_{CEO}		15	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		600	mA
Collector Current (Pulse)	I_{CP}		1.2	A
Collector Dissipation	P_C	Mounted on a glass epoxy board (20×30×1.6mm)	200	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Package Dimensions

unit : mm (typ)

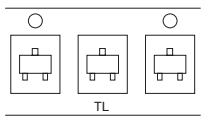
7029A-002



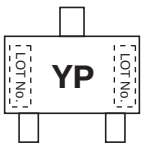
Product & Package Information

- Package : SSFP
- JEITA, JEDEC : SC-81
- Minimum Packing Quantity : 8,000 pcs./reel

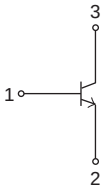
Packing Type: TL



Marking



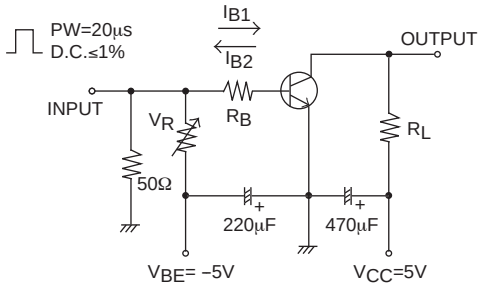
Electrical Connection



Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=15V, I_E=0A			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0A			0.1	μA
DC Current Gain	h_{FE}	V_{CE}=2V, I_C=10mA	300		800	
Gain-Bandwidth Product	f_T	V_{CE}=2V, I_C=50mA		330		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		3.2		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=200mA, I_B=10mA		150	300	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=200mA, I_B=10mA		0.9	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0A	20			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	15			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.		30		ns
Storage Time	t_{stg}			77		ns
Fall Time	t_f			40		ns

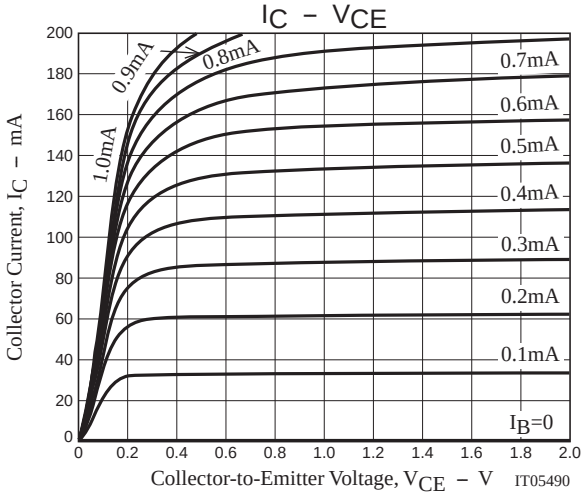
Switching Time Test Circuit

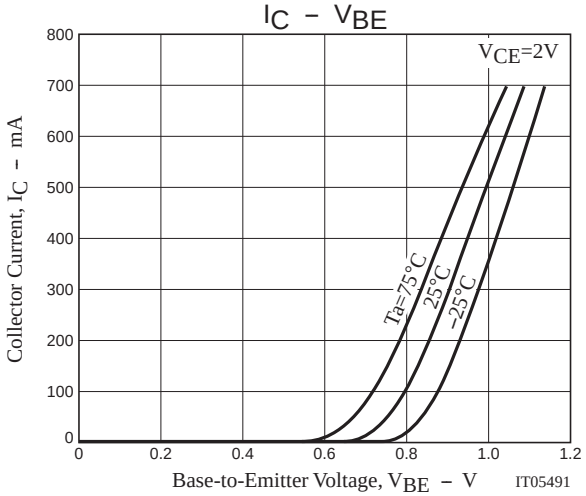


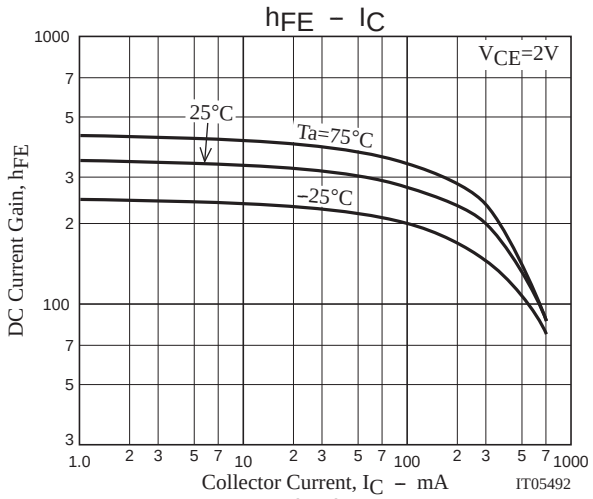
I_C=20I_{B1}= −20I_{B2}=500mA

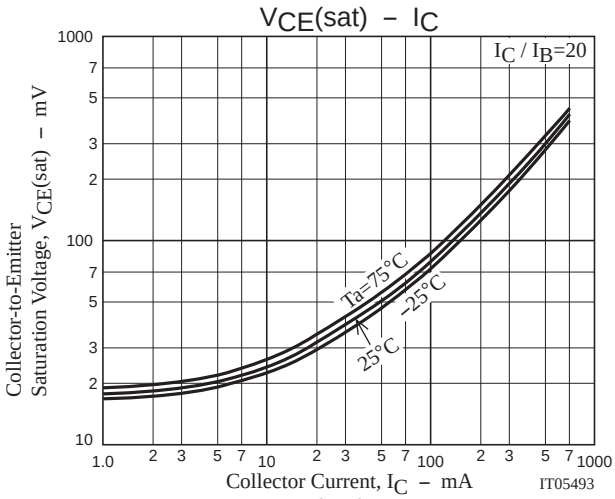
Ordering Information

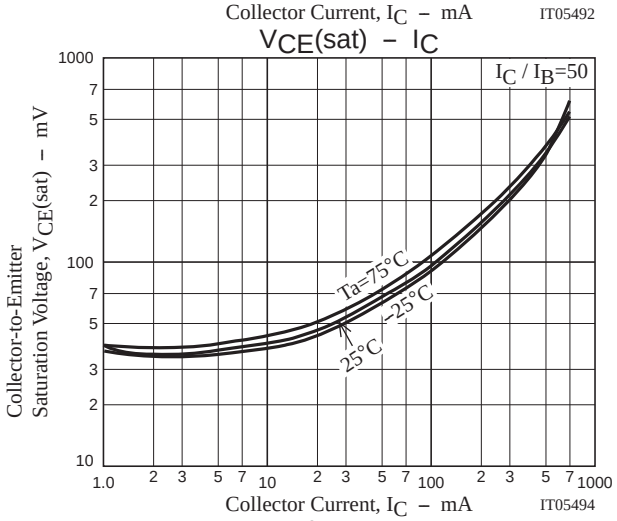
Device	Package	Shipping	memo
15C01SS-TL-E	SSFP	8,000pcs./reel	Pb Free

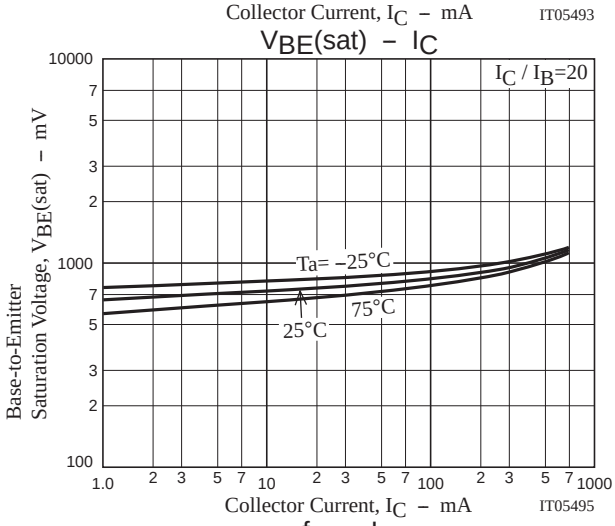


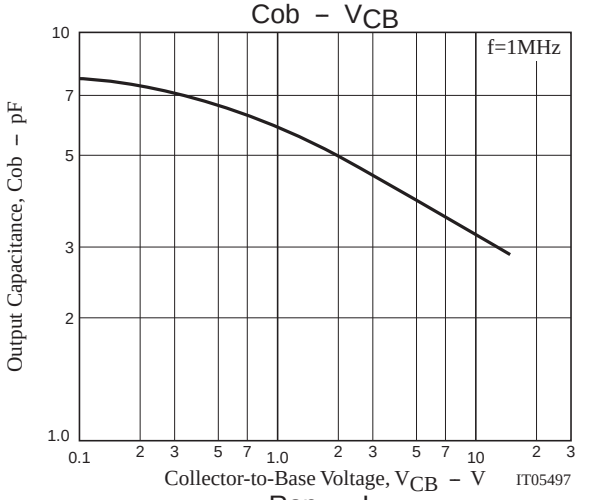


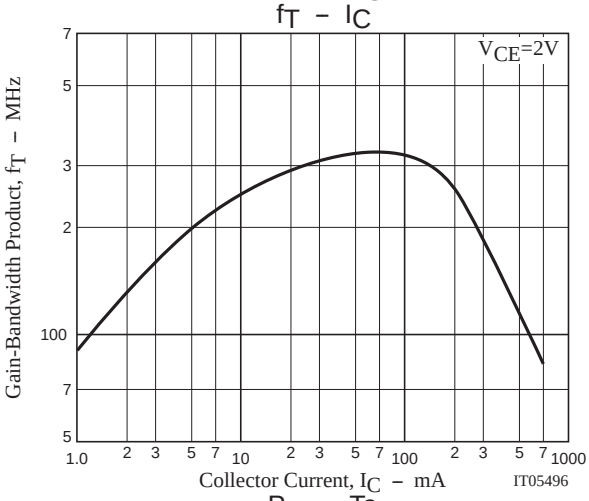

hFE – IC
VCE=2V
25°C
Ta=75°C
–25°C
DC Current Gain, hFE
Collector Current, IC – mA
IT05492

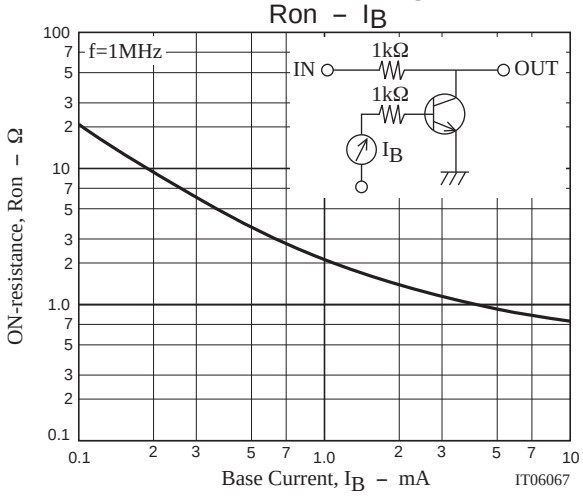

VCE(sat) – IC
IC / IB=20
Ta=75°C
–25°C
25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA
IT05493

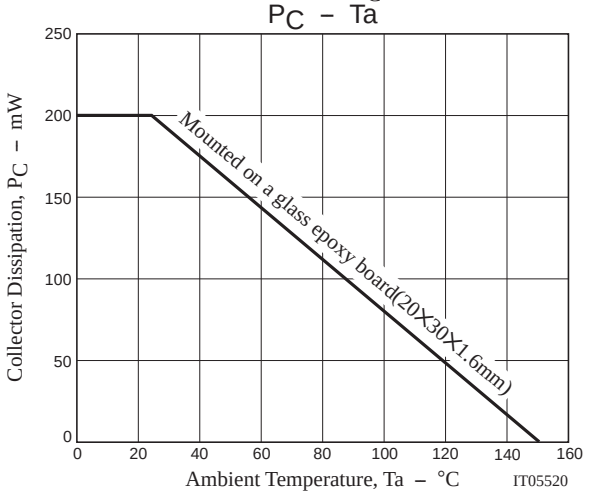

VCE(sat) – IC
IC / IB=50
Ta=75°C
–25°C
25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA
IT05494


VBE(sat) – IC
IC / IB=20
Ta= –25°C
75°C
25°C
Base-to-Emitter Saturation Voltage, VBE(sat) – mV
Collector Current, IC – mA
IT05495


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT05497


fT – IC
VCE=2V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
IT05496


Ron – IB
f=1MHz
IN
1kΩ
1kΩ
OUT
IB
ON-resistance, Ron – Ω
Base Current, IB – mA
IT06067


PC – Ta
Mounted on a glass epoxy board(20X30X1.6mm)
Collector Dissipation, PC – mW
Ambient Temperature, Ta – °C
IT05520

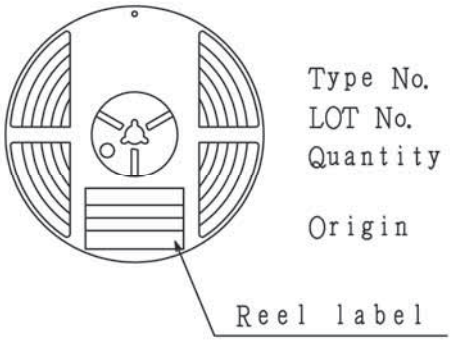
Embossed Taping Specification

15C01SS-TL-E

1. Packing Format

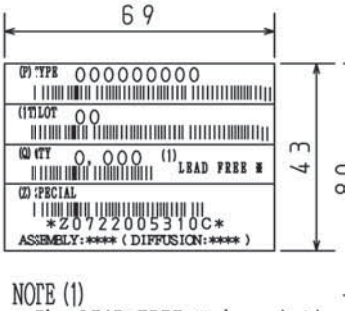
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
SSFP	SSFP	8,000	40,000	240,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



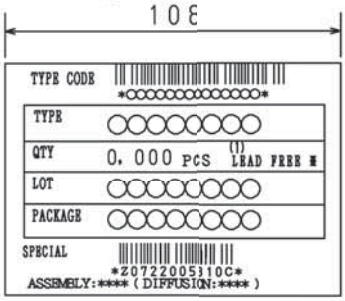
Reel label, Inner box label

(unit:mm)



Outer box label

It is a label at the time of factory shipments. The form of a label may change in physical distribution process.



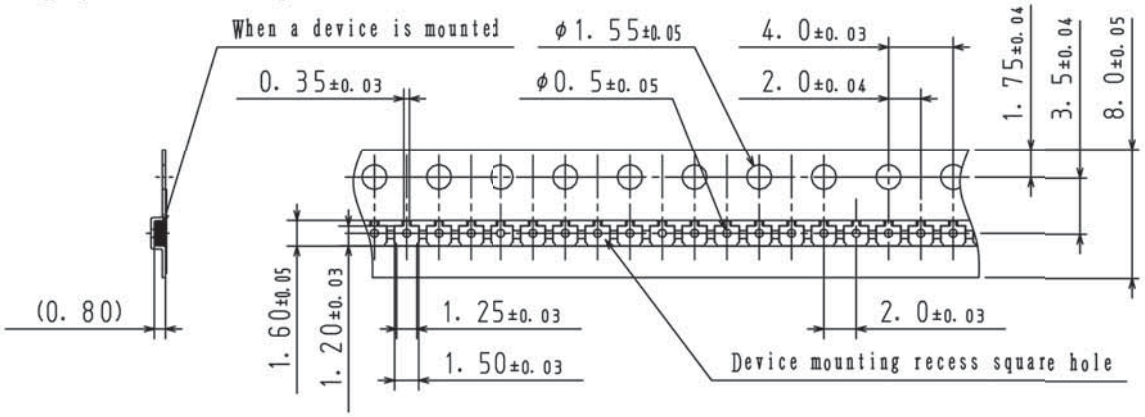
NOTE (1)

The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

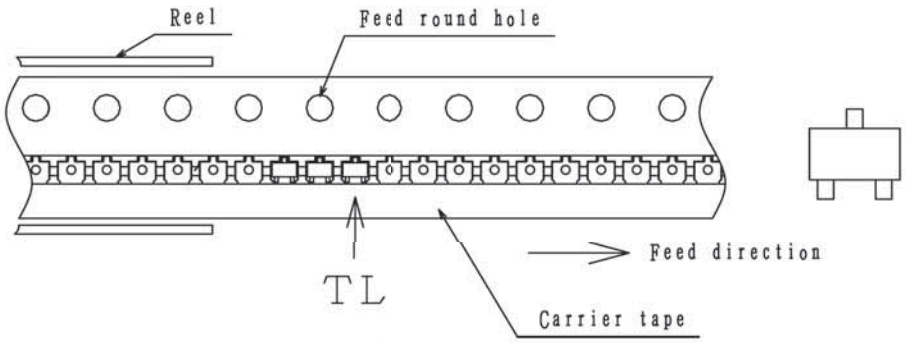
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



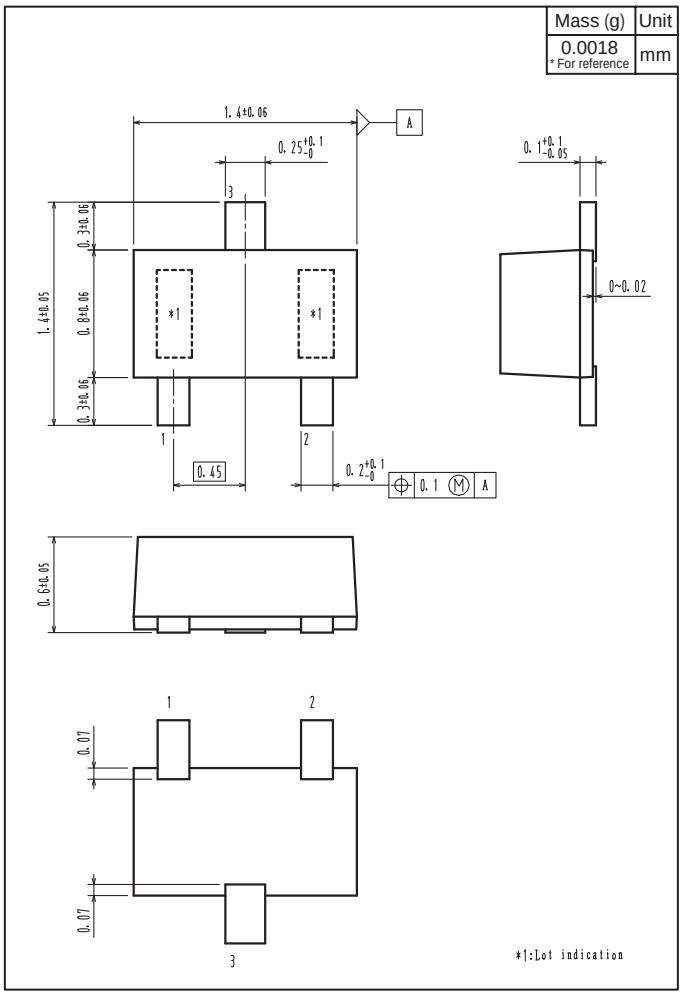
2-2. Device placement direction



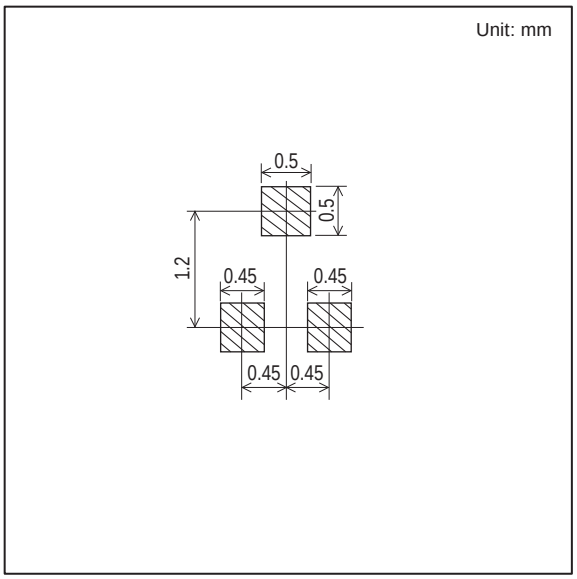
Those with pin 1 index on the feed hole side·····TL

Outline Drawing

15C01SS-TL-E



Land Pattern Example



This catalog provides information as of July, 2012. Specifications and information herein are subject to change without notice.