



SANYO Semiconductors

## DATA SHEET

An ON Semiconductor Company

# 15C01C — NPN Epitaxial Planar Silicon Transistor

## 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.= $0.58\Omega$  [ $I_C=0.7A$ ,  $I_B=35mA$ ]
- Ultrasmall package facilitates miniaturization in end products
- Small ON-resistance ( $R_{on}$ )

### Specifications

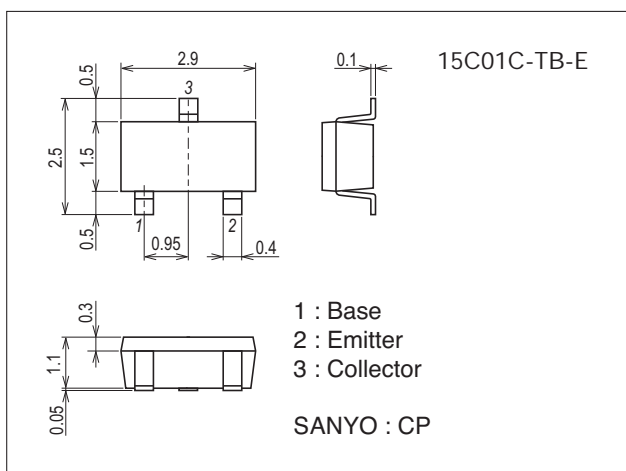
Absolute Maximum Ratings at  $T_a=25^\circ C$ 

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	$I_C$		700	mA
Collector Current (Pulse)	$I_{CP}$		1.4	A
Collector Dissipation	$P_C$	Mounted on a glass epoxy board (20×30×1.6mm)	300	mW
Junction Temperature	$T_j$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

### Package Dimensions

unit : mm (typ)

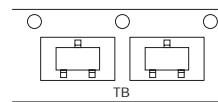
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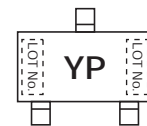
### Product & Package Information

- Package : CP
- JEITA, JEDEC : SC-59, TO-236, SOT-23, TO-236AB
- Minimum Packing Quantity : 3,000 pcs./reel

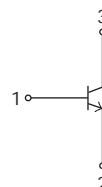
### Packing Type: TB



### Marking



### Electrical Connection

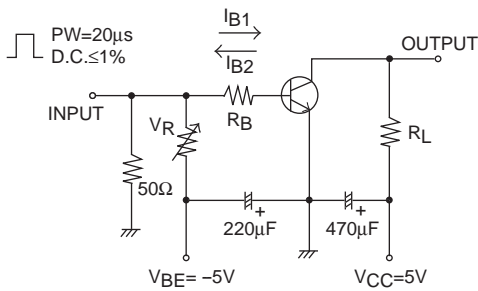


# 15C01C

## Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit	
			min	typ	max		
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=15\text{V}, I_E=0\text{A}$			0.1	$\mu\text{A}$	
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0\text{A}$			0.1	$\mu\text{A}$	
DC Current Gain	$h_{FE}$	$V_{CE}=2\text{V}, I_C=10\text{mA}$	300		800		
Gain-Bandwidth Product	$f_T$	$V_{CE}=2\text{V}, I_C=50\text{mA}$		330		MHz	
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		3.2		pF	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=200\text{mA}, I_B=10\text{mA}$		150	300	mV	
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=200\text{mA}, I_B=10\text{mA}$		0.9	1.2	V	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0\text{A}$	20			V	
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	15			V	
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0\text{A}$	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

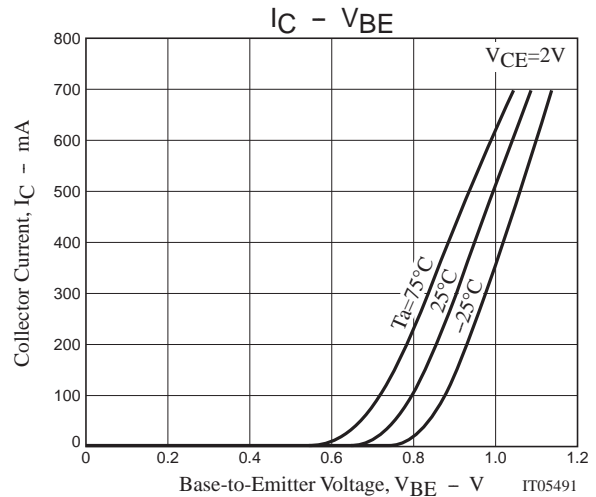
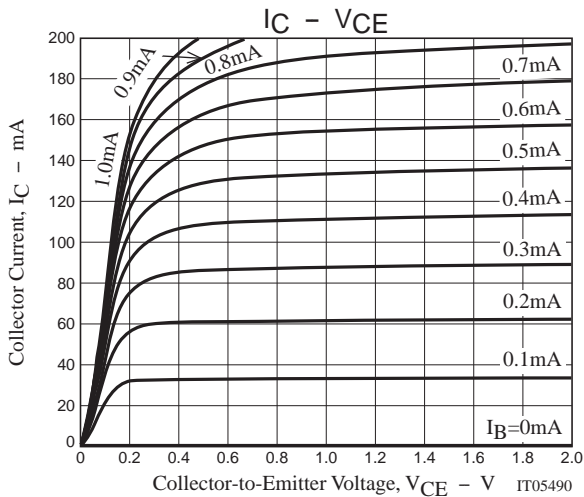
## Switching Time Test Circuit

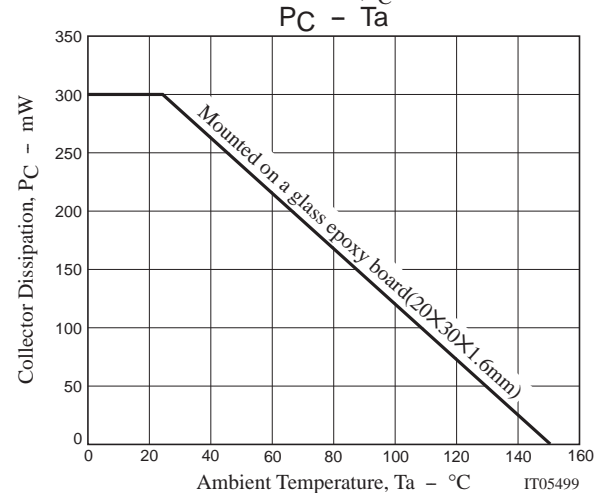
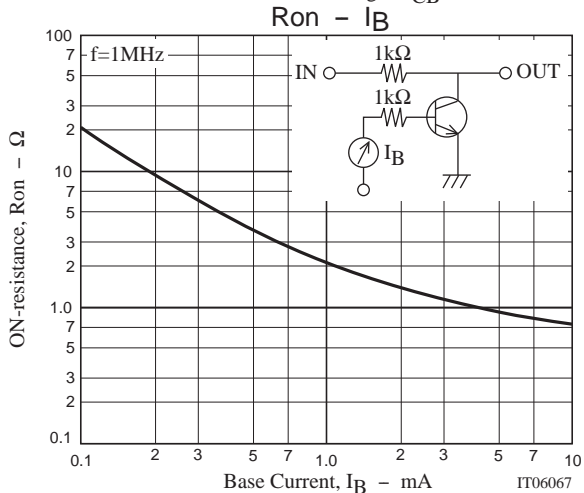
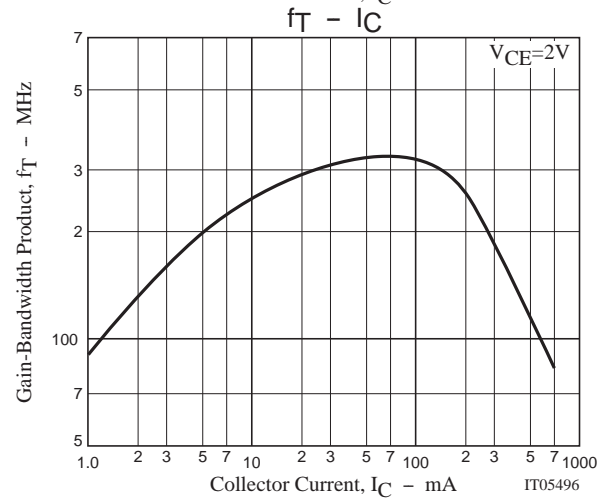
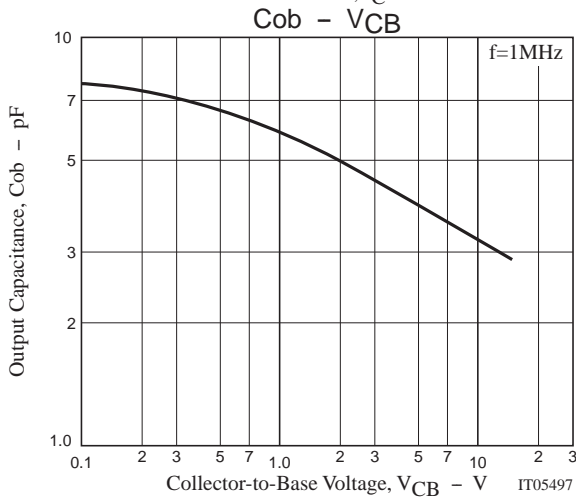
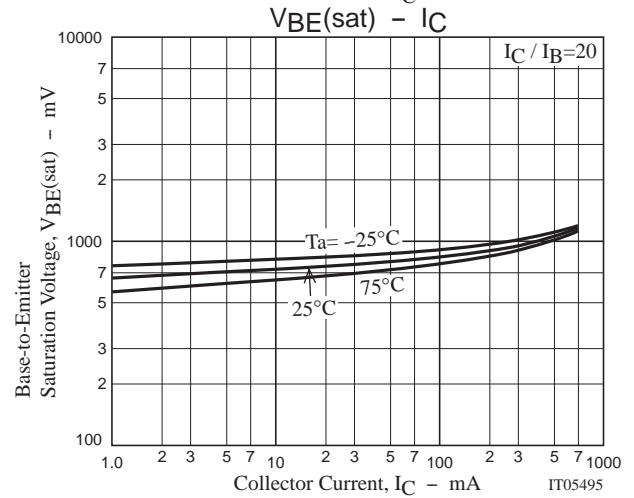
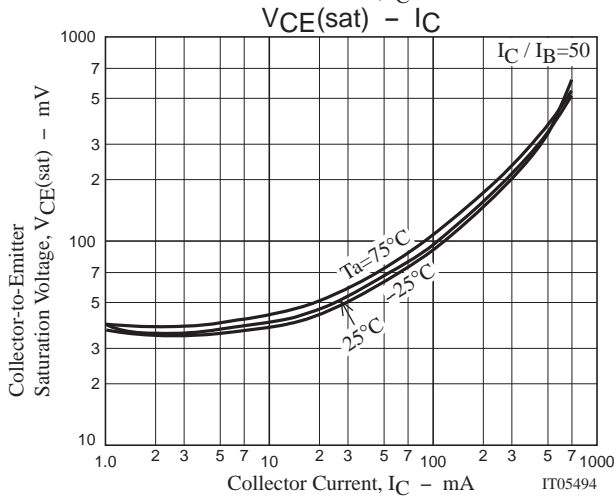
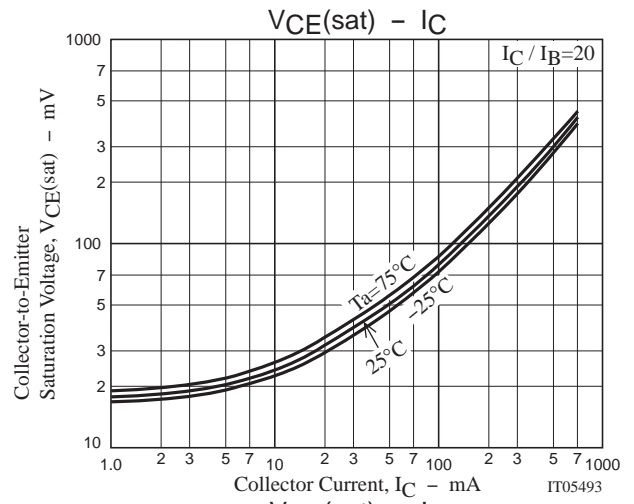
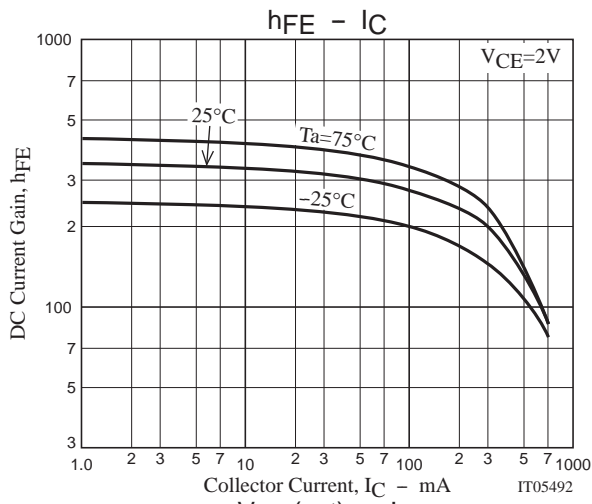


$$I_C = 20I_{B1} = -20I_{B2} = 500\text{mA}$$

## Ordering Information

Device	Package	Shipping	memo
15C01C-TB-E	CP	3,000pcs./reel	Pb Free





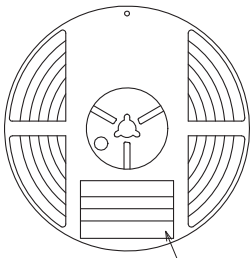
Embossed Taping Specification

15C01C-TB-E

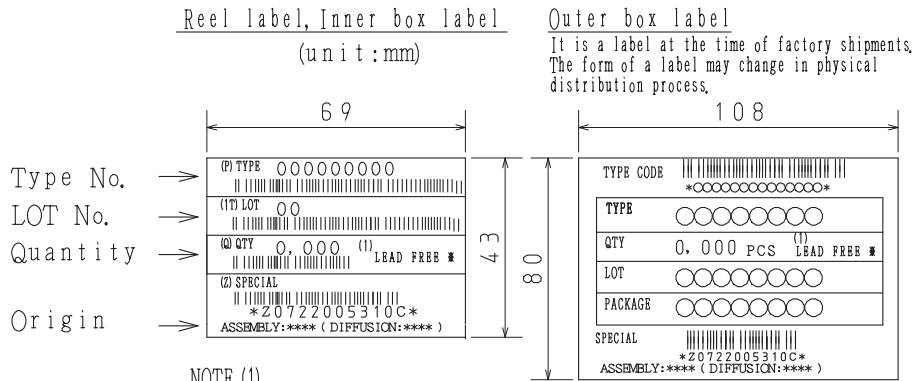
1. Packing Format

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)
CP	CP	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method

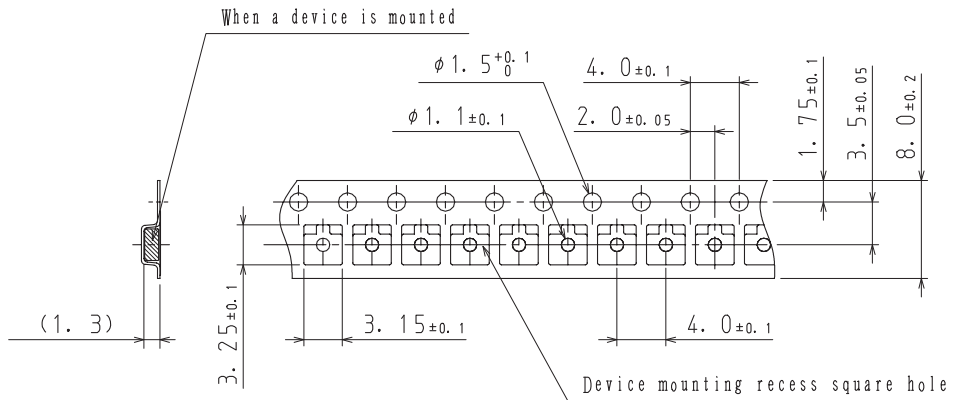


Reel label

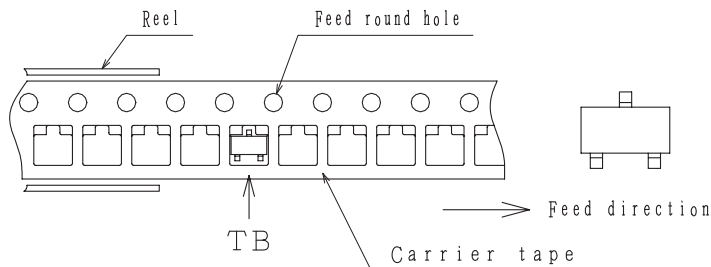


2. Taping configuration

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



2-2. Device placement direction

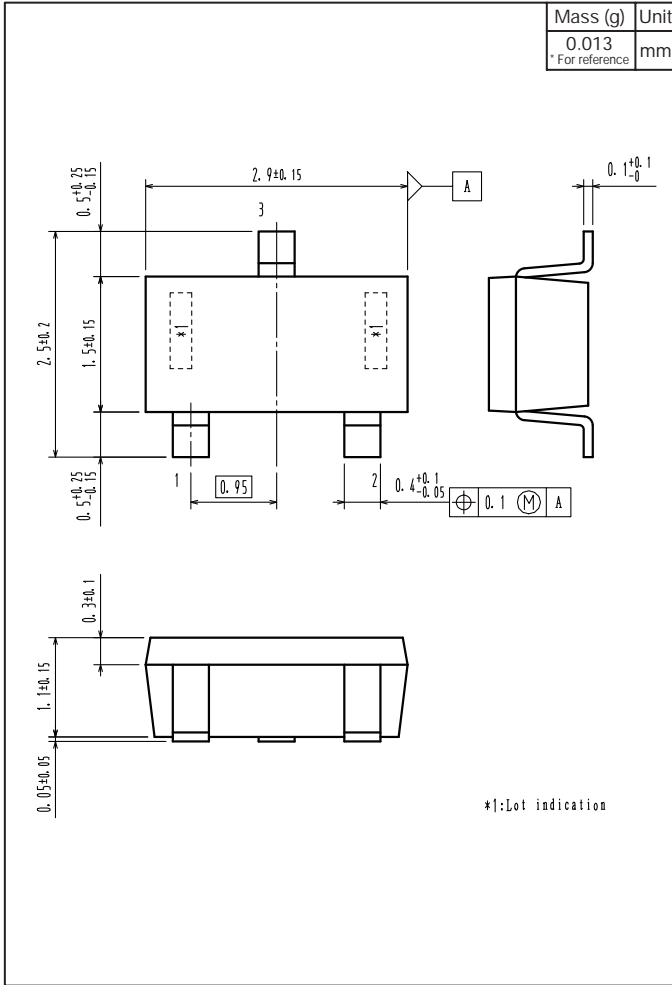


Those with one electrode terminal on the feed hole side.....TB

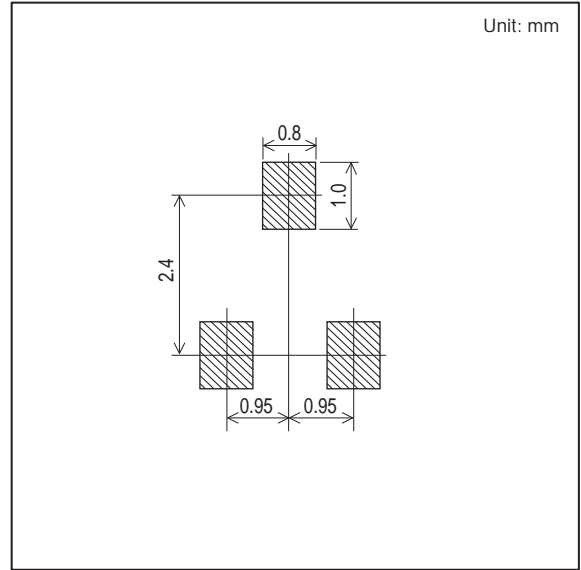
15C01C

Outline Drawing

15C01C-TB-E



Land Pattern Example



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