



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

50C02SS — NPN Epitaxial Planar Silicon Transistor Low-Frequency General-Purpose Amplifier Applications

Applications

- Low-frequency Amplifier, high-speed switching small motor drive, muting circuit

Features

- Large current capacity
- Low collector-to-emitter saturation voltage (resistance) : $R_{CE(sat)}$ typ=175m Ω [$I_C=0.5A$, $I_B=50mA$]
- Ultrasmall package facilitates miniaturization in end products
- Small ON-resistance (R_{on})

Specifications

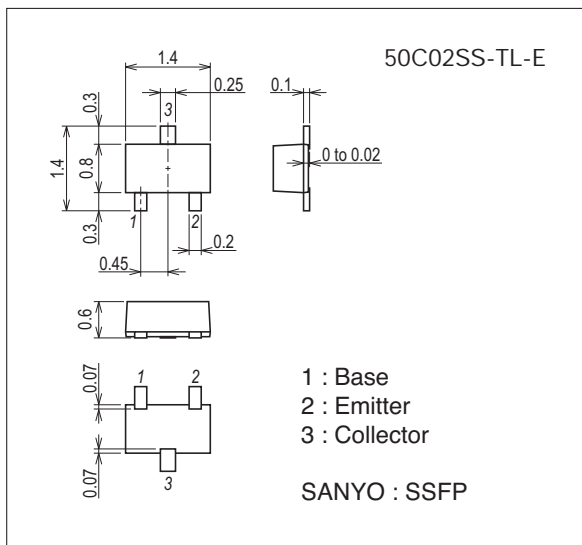
Absolute Maximum Ratings at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		400	mA
Collector Current (Pulse)	I_{CP}		800	mA
Collector Dissipation	P_C	Mounted on a glass-epoxy board (20x30x1.6mm)	200	mW
Junction Temperature	T_j		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

Package Dimensions

unit : mm (typ)

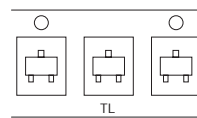
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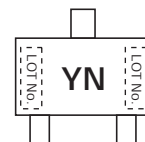
Product & Package Information

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

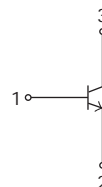
Packing Type: TL



Marking



Electrical Connection

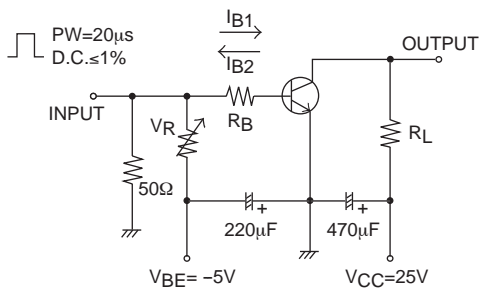


50C02SS

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40V, I_E=0A$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4V, I_C=0A$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=2V, I_C=10mA$	300		800	
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=50mA$		500		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		2.8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=10mA$		50	100	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=10mA$		0.9	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}			340		ns
Fall Time	t_f			55		ns

Switching Time Test Circuit

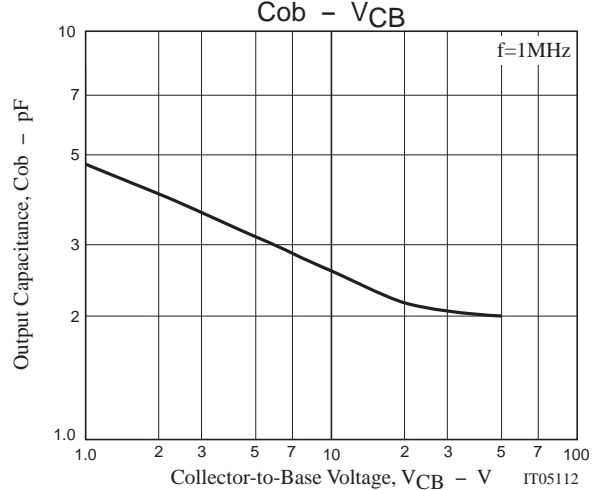
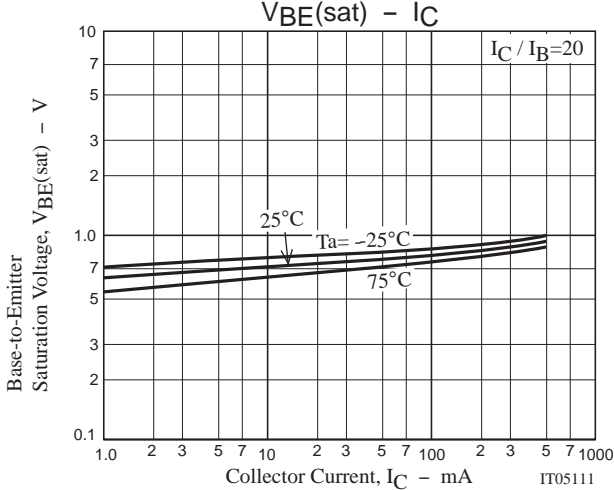
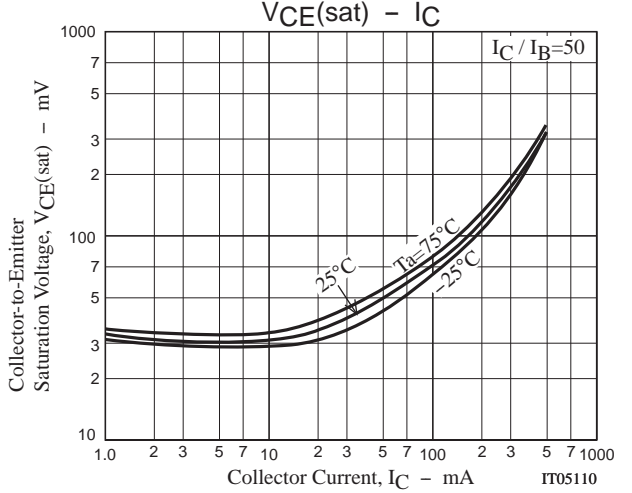
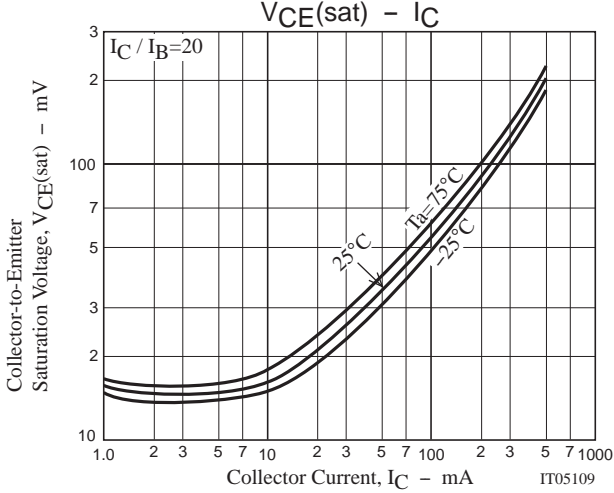
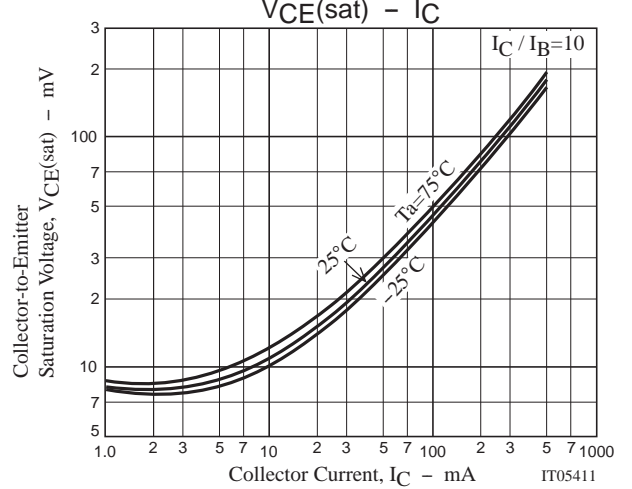
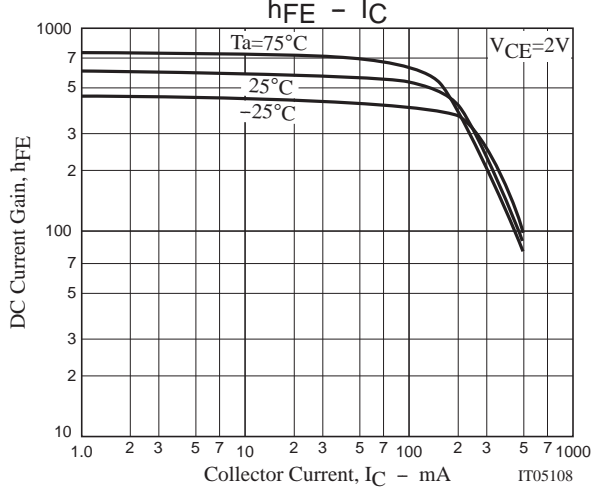
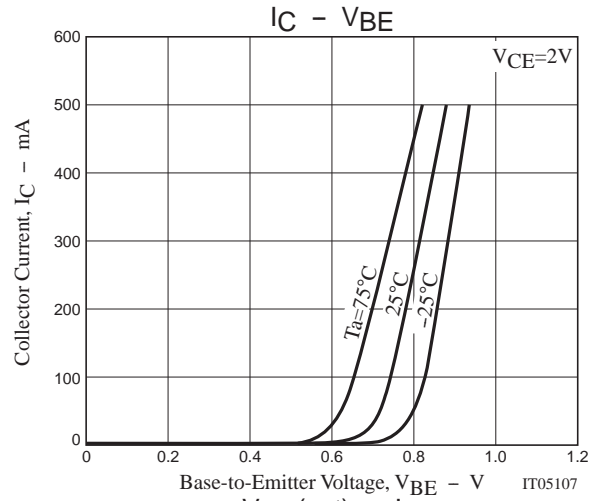
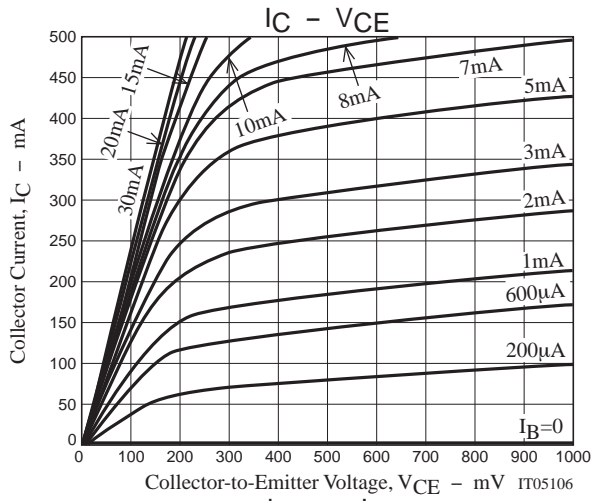


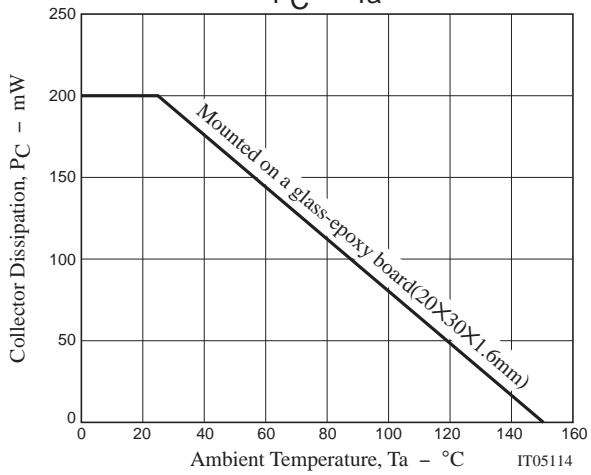
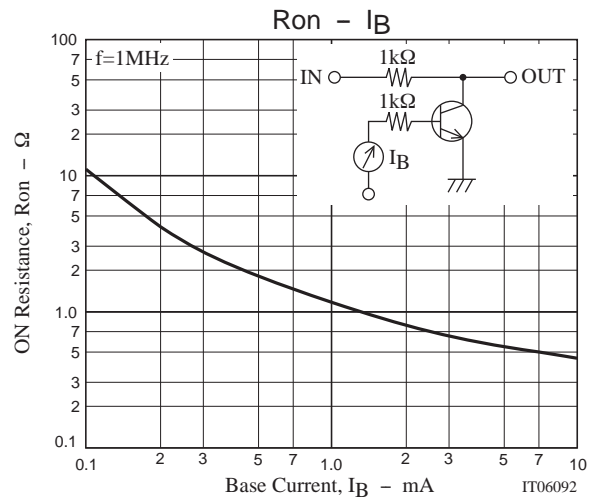
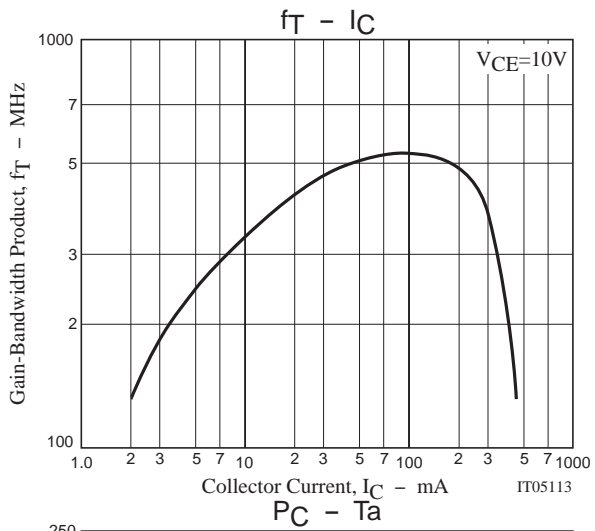
$$I_C = 20I_{B1} = -20I_{B2} = 200mA$$

Ordering Information

Device	Package	Shipping	memo
50C02SS-TL-E	SSFP	8,000pcs./reel	Pb Free

50C02SS





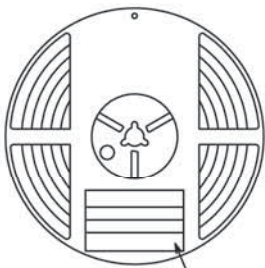
Embossed Taping Specification

50C02SS-TL-E

1. Packing Format

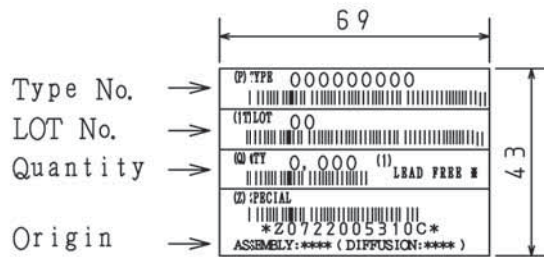
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
SSFP	SSFP	8,000	40,000	240,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimension::mm (external) 440×195×210

Packing method

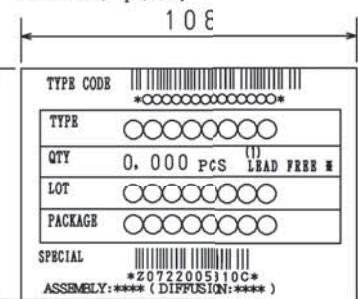


Reel label

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.



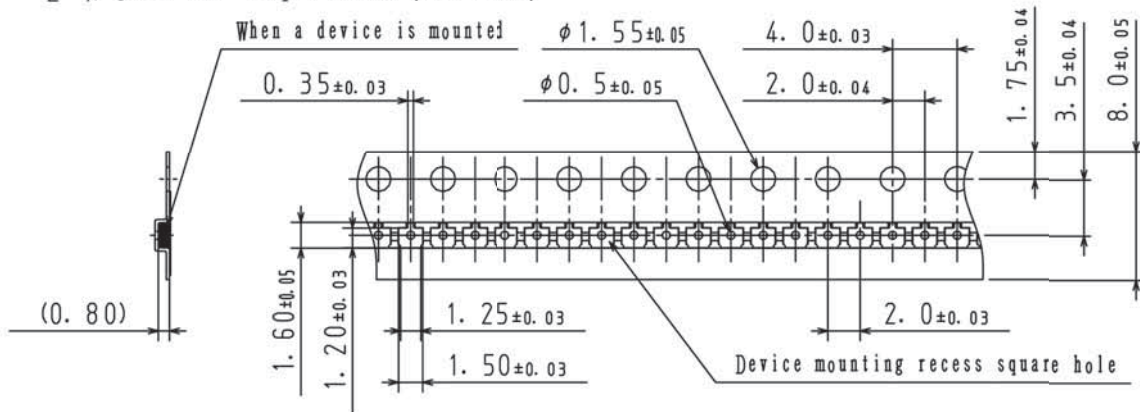
NOTE (1)

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

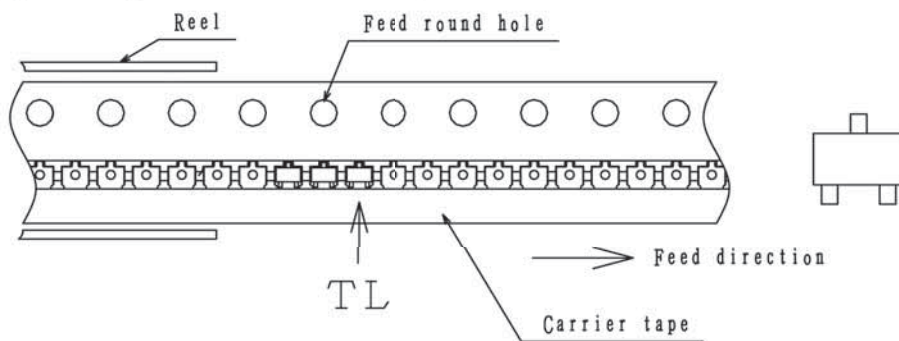
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

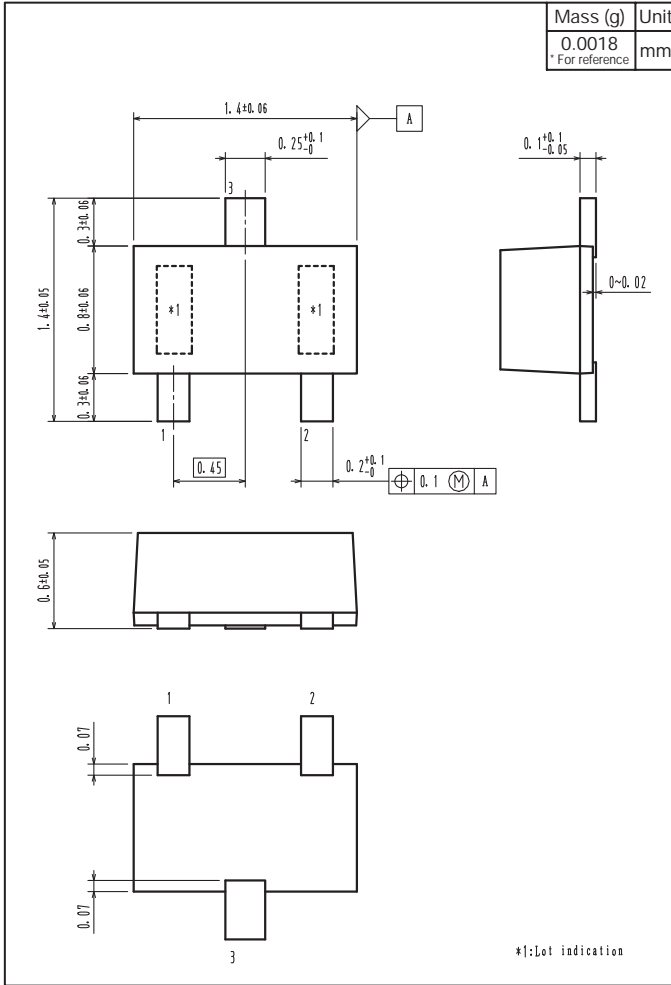


Those with pin 1 index on the feed hole side.....TL

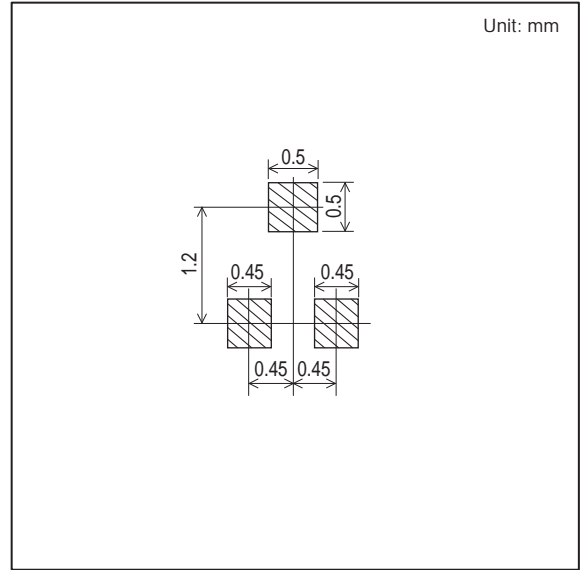
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Outline Drawing

50C02SS-TL-E



Land Pattern Example



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