Ordering number : ENA1118A

2SC5551A

RF Transistor

30V, 300mA, f_T=3.5GHz, NPN Single PCP

ON Semiconductor®

http://onsemi.com

Features

- High f_T : (f_T=3.5GHz typ)
- Large current : (I_C=300mA)
- Large allowable collector dissipation (1.3W max)

Specifications

Absolute Maximum Ratings at Ta=25°C

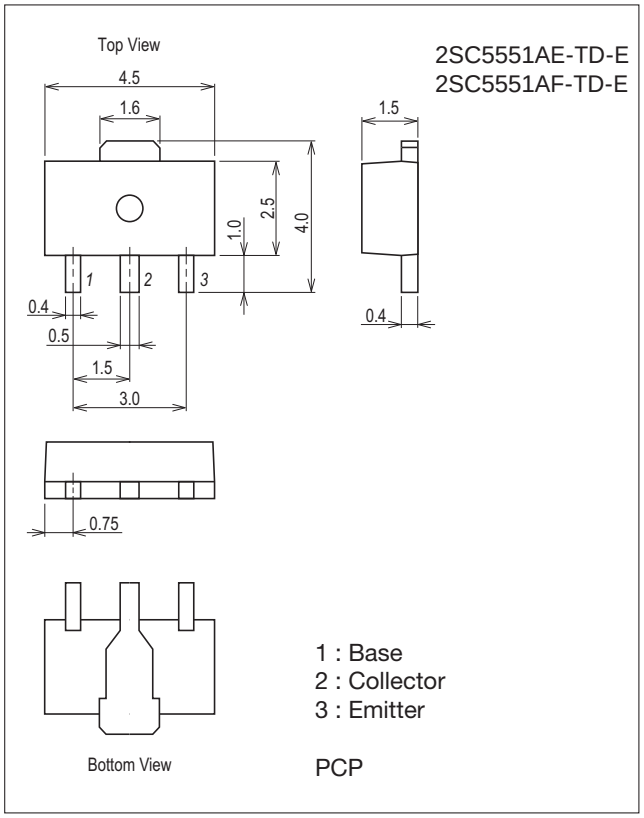
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		40	V
Collector-to-Emitter Voltage	V_{CEO}		30	V
Emitter-to-Base Voltage	V_{EBO}		2	V
Collector Current	I_C		300	mA
Collector Current (Pulse)	I_{CP}		600	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (250mm^2×0.8mm)	1.3	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

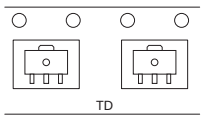
7007B-004



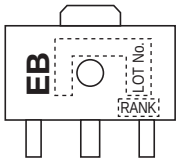
Product & Package Information

- Package : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- Minimum Packing Quantity : 1,000 pcs./reel

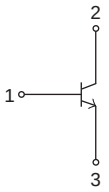
Packing Type: TD



Marking



Electrical Connection



Electrical Characteristics at Ta=25°C

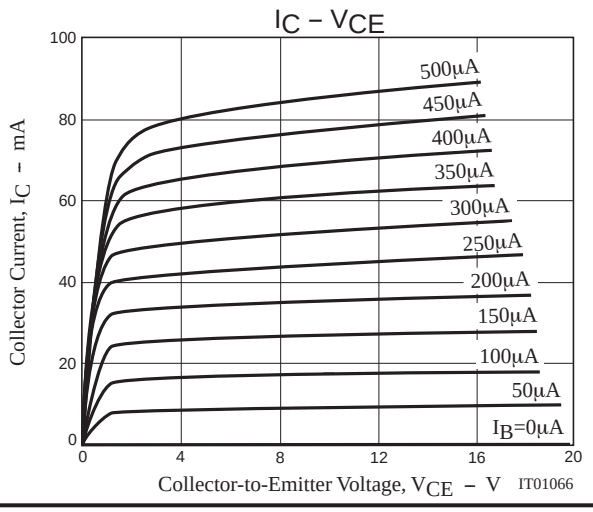
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=20V, I_E=0A			1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=1V, I_C=0A			5.0	μA
DC Current Gain	$h_{FE}1$	V_{CE}=5V, I_C=50mA	90		270	
	$h_{FE}2$	V_{CE}=5V, I_C=300mA	20			
Gain-Bandwidth Product	f_T	V_{CE}=5V, I_C=50mA		3.5		GHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		2.9	4.0	pF
Reverse Transfer Capacitance	Cre			1.5		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=50mA, I_B=5mA		0.07	0.3	V
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=50mA, I_B=5mA		0.8	1.2	V

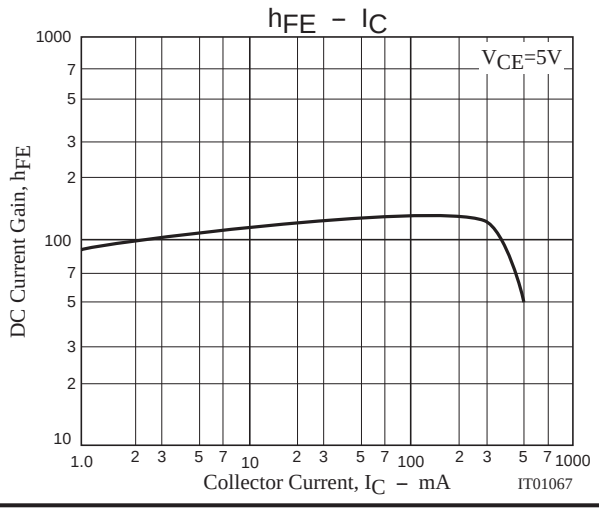
* : The 2SC5551A is classified by 50mA h_{FE} as follows :

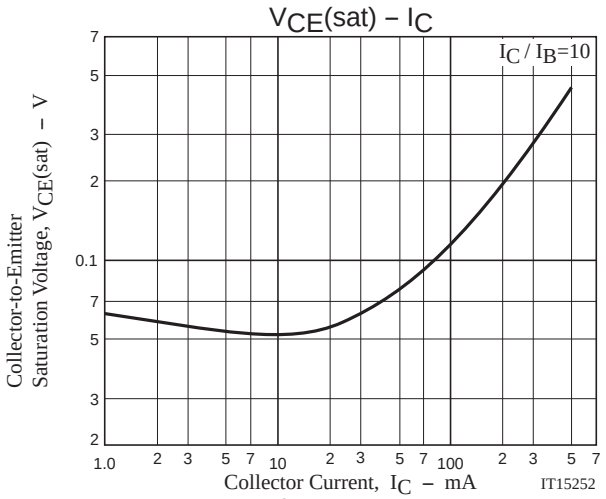
Rank	E	F
h_{FE}	90 to 180	135 to 270

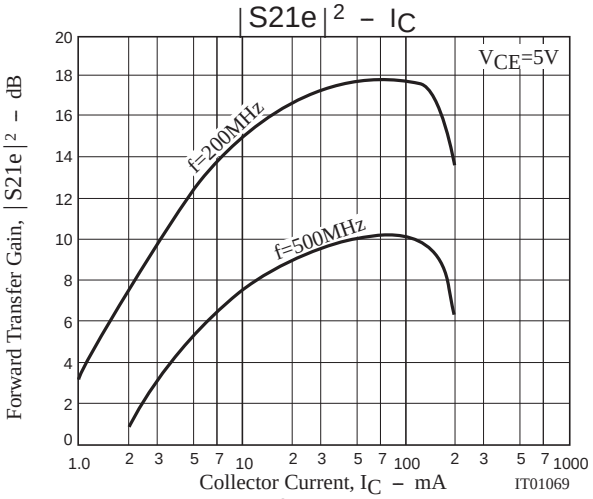
Ordering Information

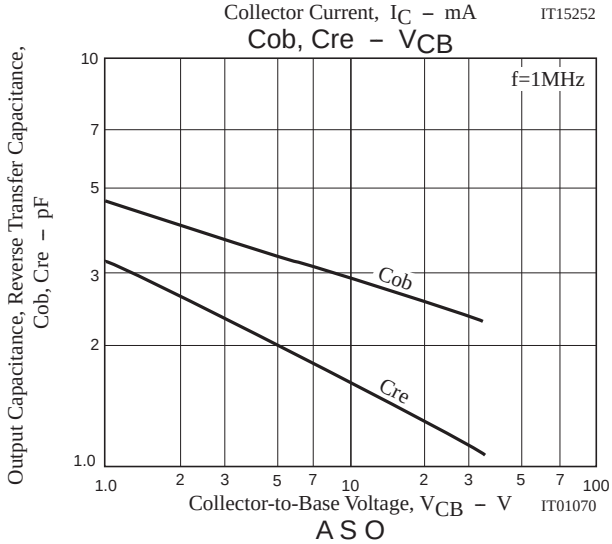
Device	Package	Shipping	memo
2SC5551AE-TD-E	PCP	1,000pcs./reel	Pb Free
2SC5551AF-TD-E	PCP	1,000pcs./reel	

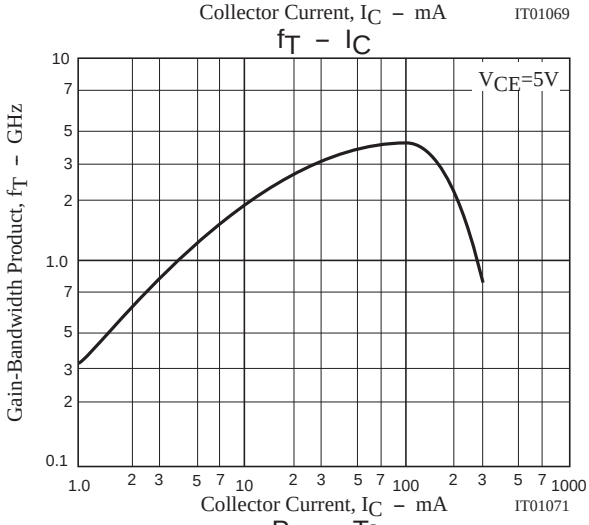


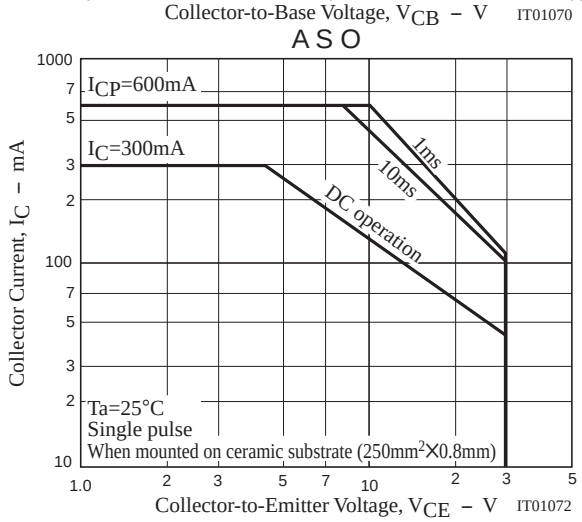


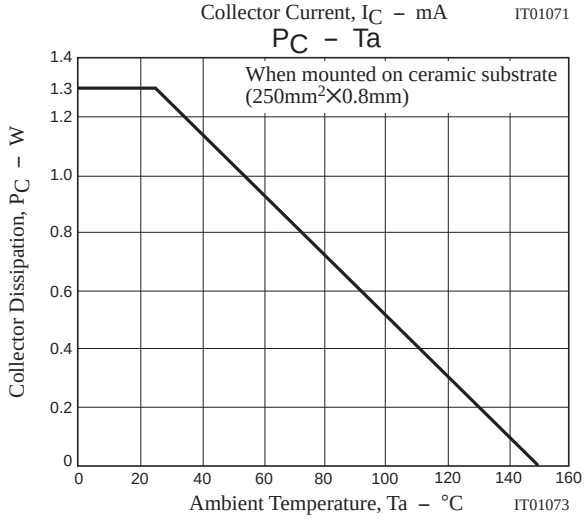

VCE(sat) – IC
IC / IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – mA
IT15252


|S21e|2 – IC
VCE=5V
f=200MHz
f=500MHz
Forward Transfer Gain, |S21e|2 – dB
Collector Current, IC – mA
IT01069


Cob, Cre – VCB
f=1MHz
Cob
Cre
Output Capacitance, Reverse Transfer Capacitance, Cob, Cre – pF
Collector-to-Base Voltage, VCB – V
IT01070


fT – IC
VCE=5V
Gain-Bandwidth Product, fT – GHz
Collector Current, IC – mA
IT01071


A S O
ICP=600mA
IC=300mA
1ms
10ms
DC operation
Ta=25°C
Single pulse
When mounted on ceramic substrate (250mm2×0.8mm)
Collector Current, IC – mA
Collector-to-Emitter Voltage, VCE – V
IT01072


PC – Ta
When mounted on ceramic substrate
(250mm2×0.8mm)
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
IT01073

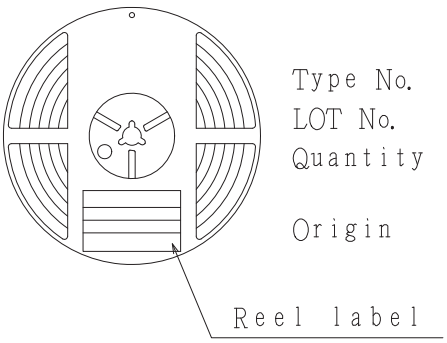
Bag Packing Specification

2SC5551AE-TD-E, 2SC5551AF-TD-E

1. Packing Format

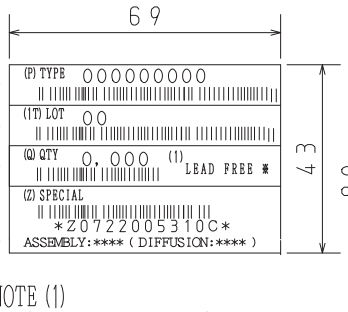
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
PCP	PCP	1,000	4,000	24,000	4 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



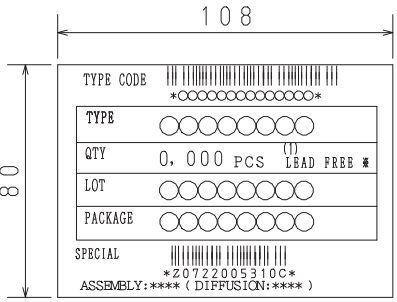
Reel label, Inner box label

(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.

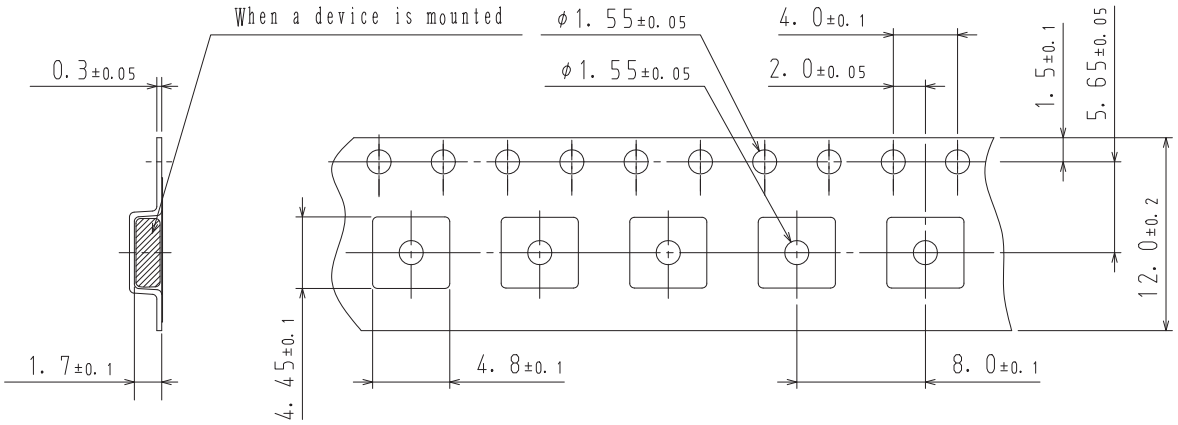


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

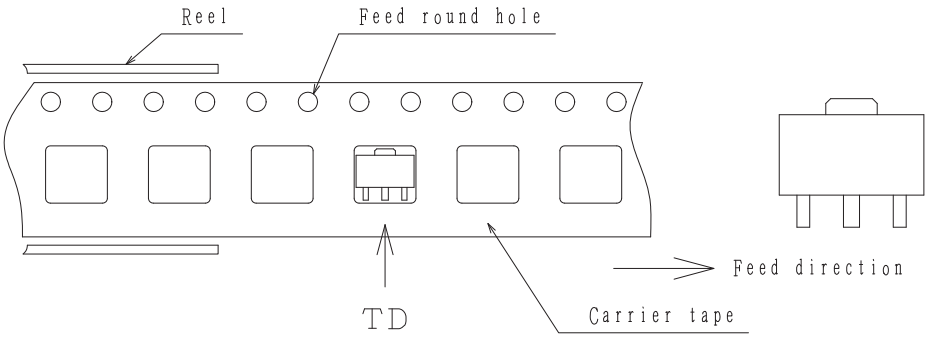
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



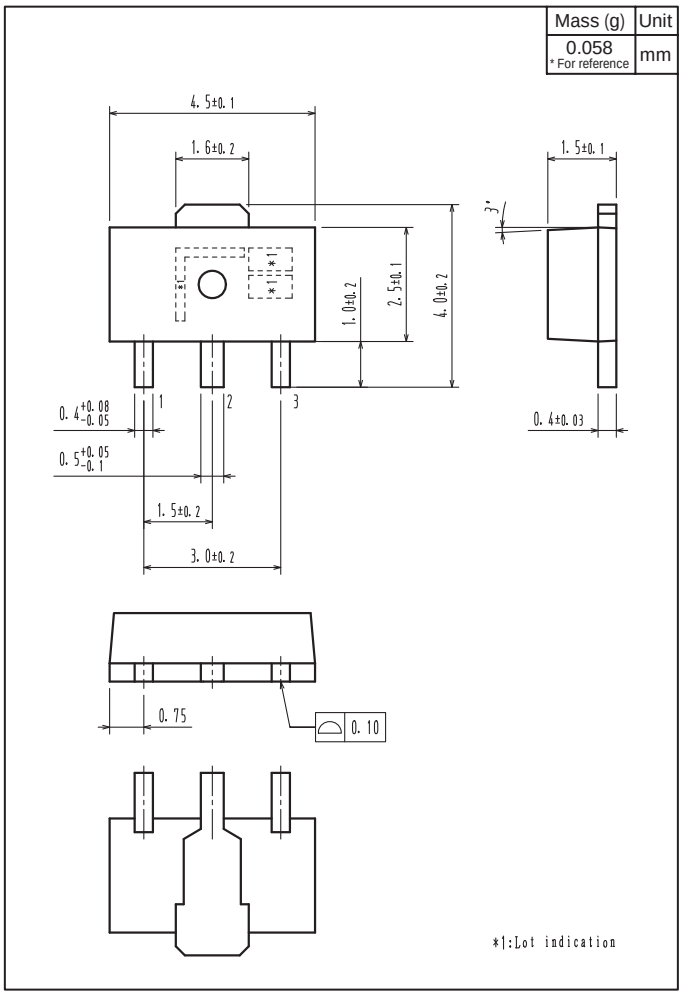
2-2. Device placement direction



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

Outline Drawing

2SC5551AE-TD-E, 2SC5551AF-TD-E



Land Pattern Example