



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## 2SA2124 — PNP Epitaxial Planar Silicon Transistor

### High-Current Switching Applications

#### Applications

- Voltage regulators, relay drivers, lamp drivers, electrical equipment

#### Features

- Adoption of MBIT processes
- Low collector-to-emitter saturation voltage
- Large current capacity
- High-speed switching

#### Specifications

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

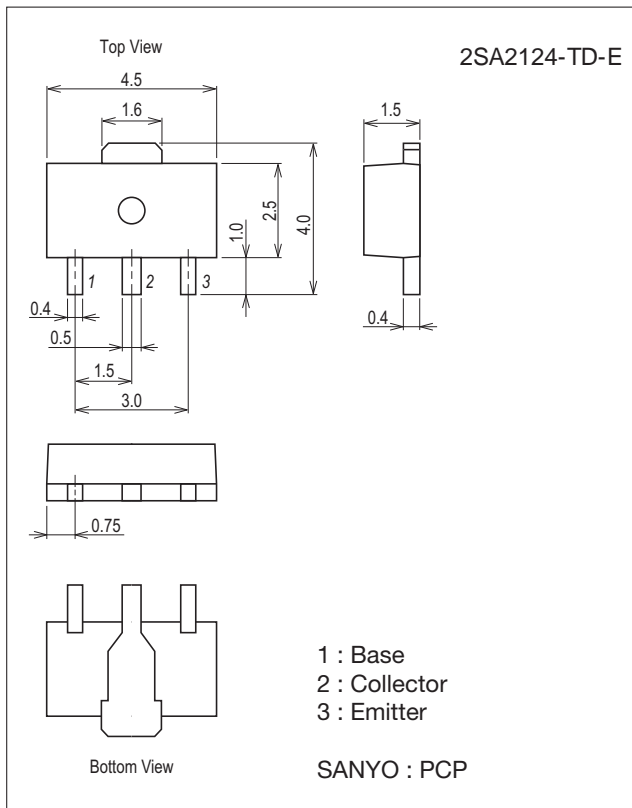
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		-30	V
Collector-to-Emitter Voltage	$V_{CE0}$		-30	V
Emitter-to-Base Voltage	$V_{EB0}$		-6	V
Collector Current	$I_C$		-2	A
Collector Current (Pulse)	$I_{CP}$		-5	A

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#### Package Dimensions

unit : mm (typ)

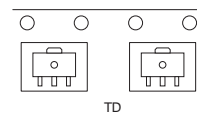
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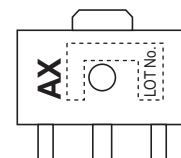
#### Product & Package Information

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

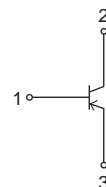
#### Packing Type: TD



#### Marking



#### Electrical Connection



## 2SA2124

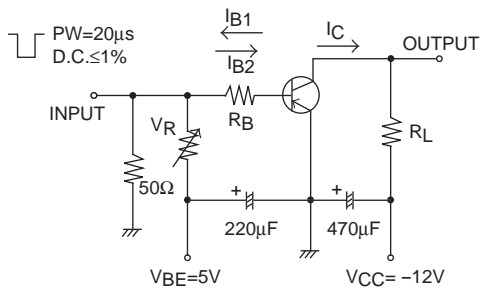
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Parameter	Symbol	Conditions	Ratings	Unit
Base Current	$I_B$		-400	mA
Collector Dissipation	$P_C$	When mounted on ceramic substrate (450mm <sup>2</sup> ×0.8mm)	1.3	W
		$T_c=25^{\circ}\text{C}$	3.5	W
Junction Temperature	$T_J$		150	$^{\circ}\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-30\text{V}$ , $I_E=0\text{A}$			-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	$h_{FE1}$	$V_{CE}=-2\text{V}$ , $I_C=-100\text{mA}$	200		560	
	$h_{FE2}$	$V_{CE}=-2\text{V}$ , $I_C=-1.5\text{A}$	65			
Gain-Bandwidth Product	$f_T$	$V_{CE}=-10\text{V}$ , $I_C=-300\text{mA}$		440		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-1.5\text{A}$ , $I_B=-75\text{mA}$		-0.2	-0.4	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-1.5\text{A}$ , $I_B=-75\text{mA}$		-0.95	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}$ , $I_E=0\text{A}$	-30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}$ , $R_{BE}=\infty$	-30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}$ , $I_C=0\text{A}$	-6			V
Output Capacitance	$C_{ob}$	$V_{CB}=-10\text{V}$ , $f=1\text{MHz}$		17		pF
Turn-ON Time	$t_{on}$	See specified Test Circuit.		45		ns
Storage Time	$t_{stg}$			200		ns
Fall Time	$t_f$			23		ns

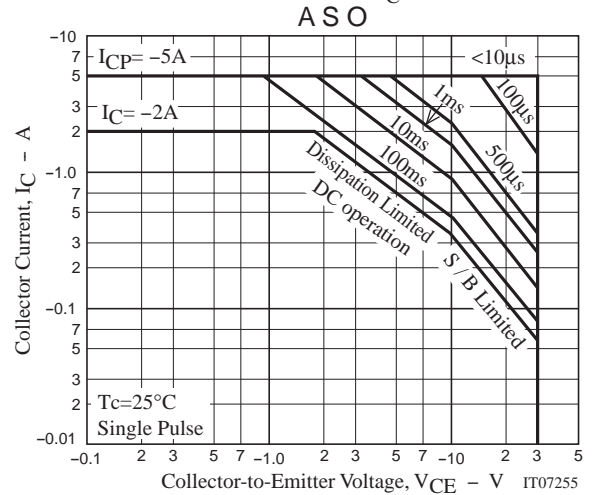
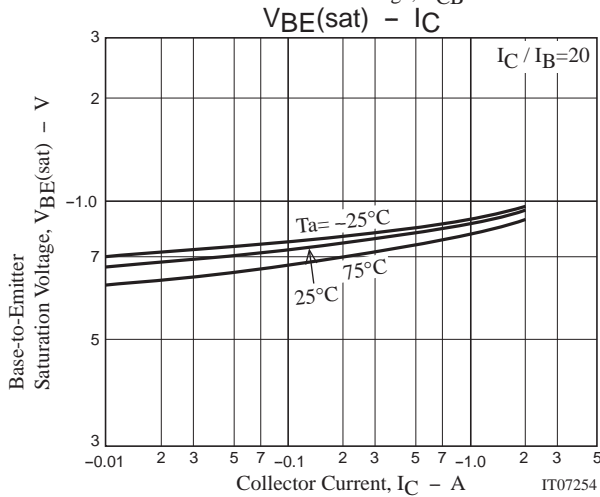
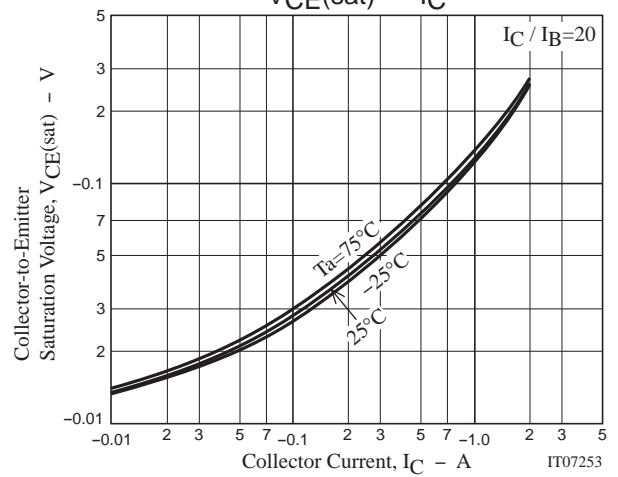
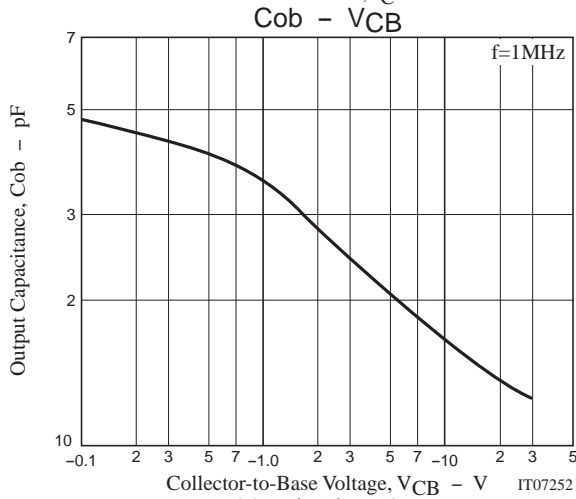
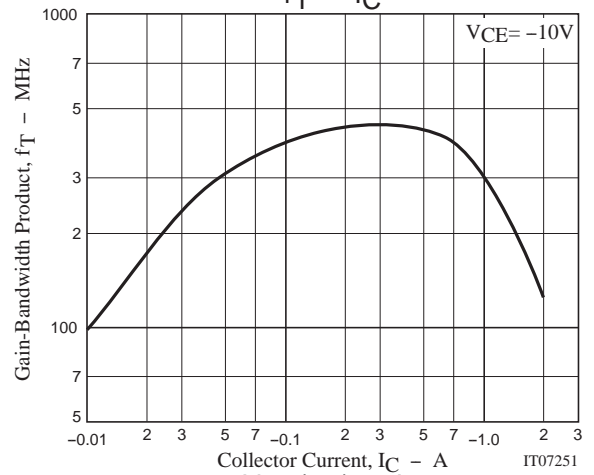
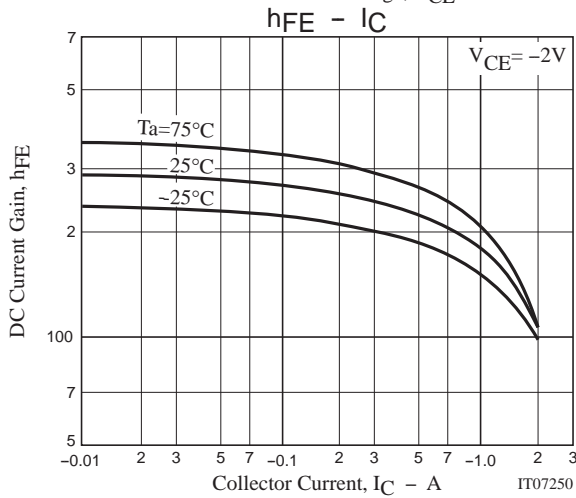
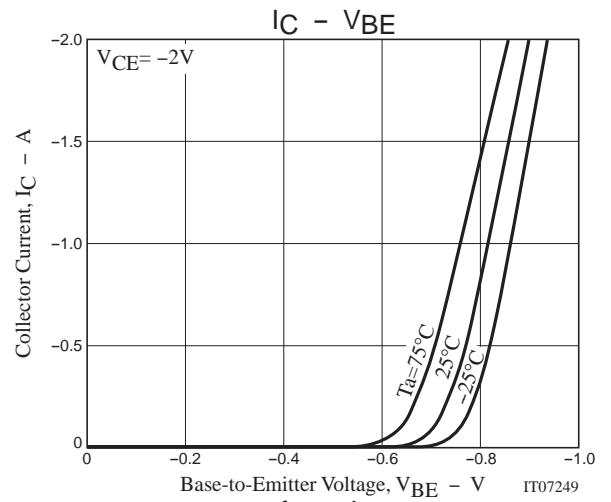
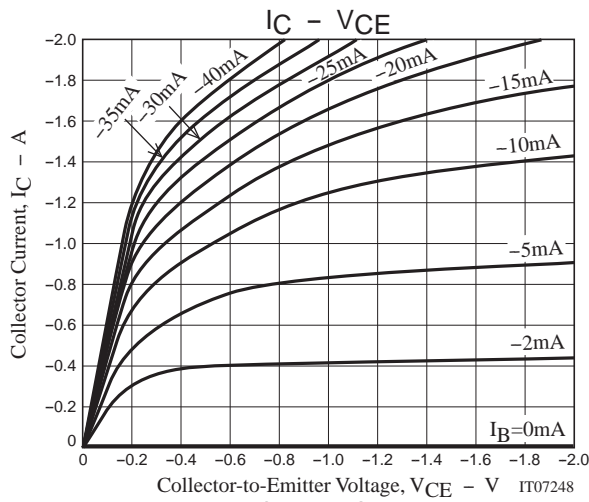
### Switching Time Test Circuit

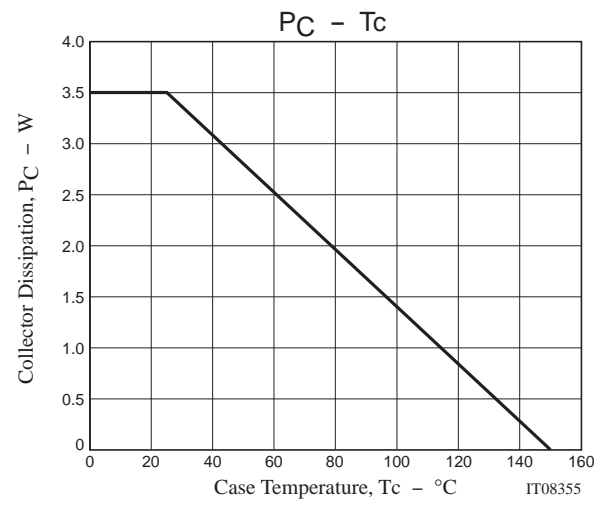
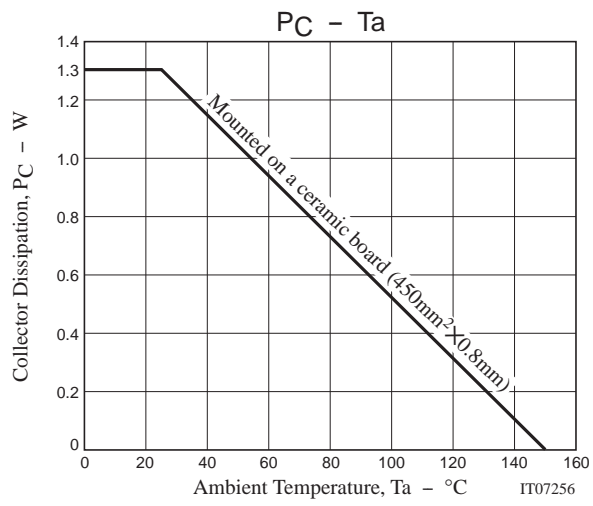


$$I_C=20I_{B1}=-20I_{B2}=-0.5\text{A}$$

### Ordering Information

Device	Package	Shipping	memo
2SA2124-TD-E	PCP	1,000pcs./reel	Pb Free





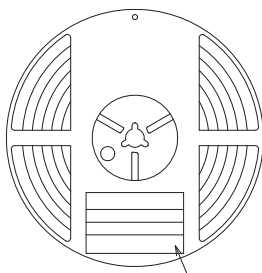
**Bag Packing Specification**

2SA2124-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



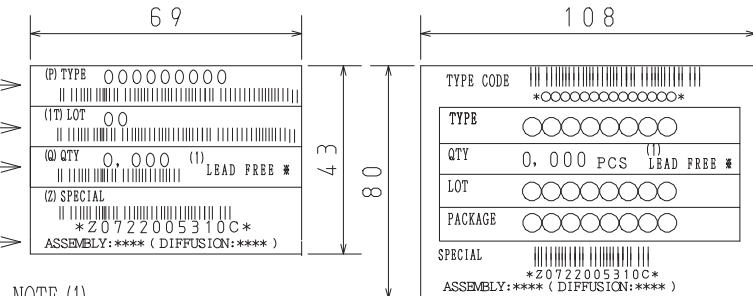
Reel label

Type No. →  
 LOT No. →  
 Quantity →  
 Origin →

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.



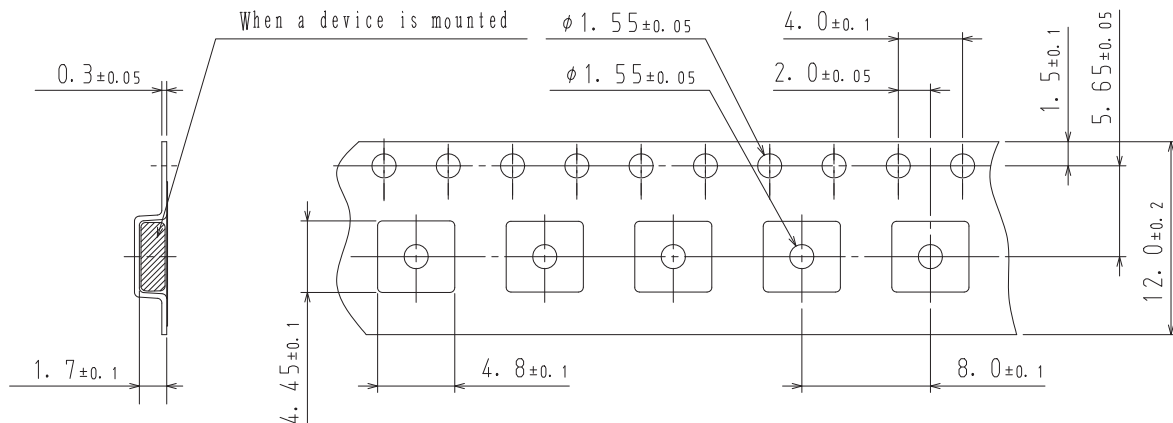
NOTE (1)

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

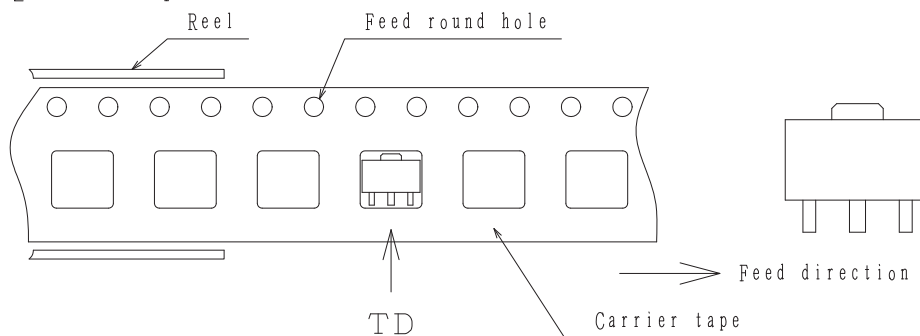
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

## 2. Taping configuration

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

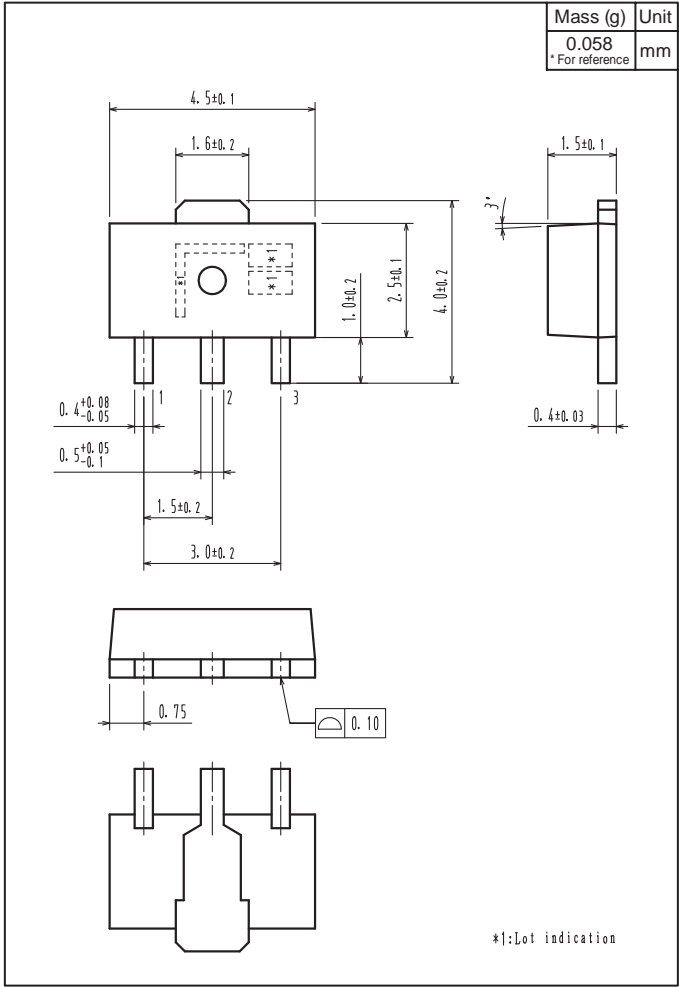


## 2-2. Device placement direction

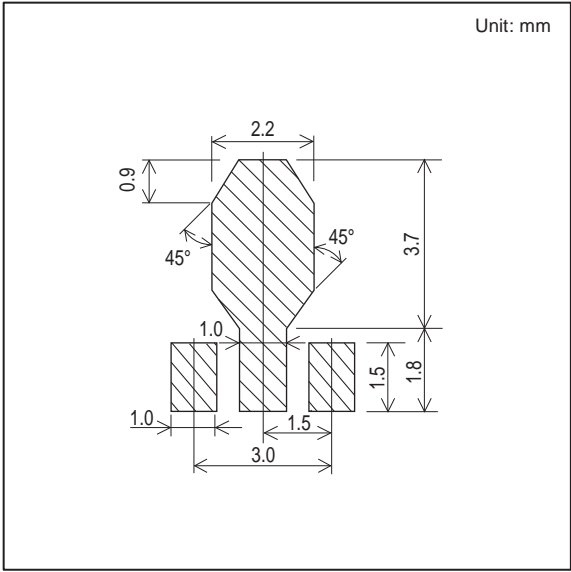


Those with pin 1 index on the feed hole side.....TD

Outline Drawing  
2SA2124-TD-E



Land Pattern Example



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