



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SA2205 — PNP Epitaxial Planar Silicon Transistor

High-Voltage Switching Applications

Applications

- DC / DC converter, Relay drivers, lamp drivers, motor drivers

Features

- Adoption of FBET, MBIT processes
- Low collector-to-emitter saturation voltage
- High allowable power dissipation
- Large current capacity
- High-speed switching

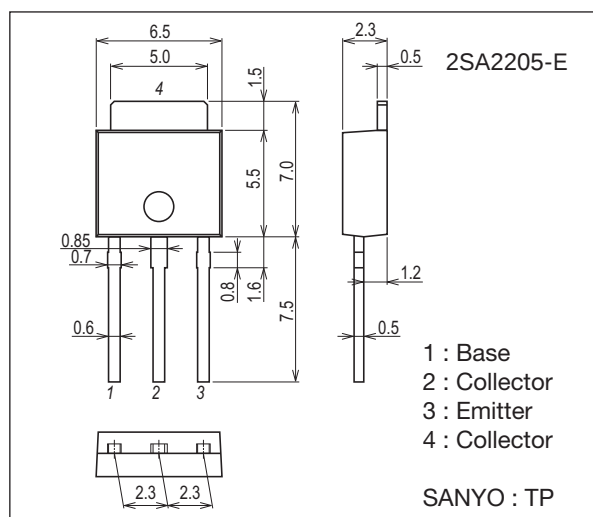
Specifications

Absolute Maximum Ratings at Ta=25°C

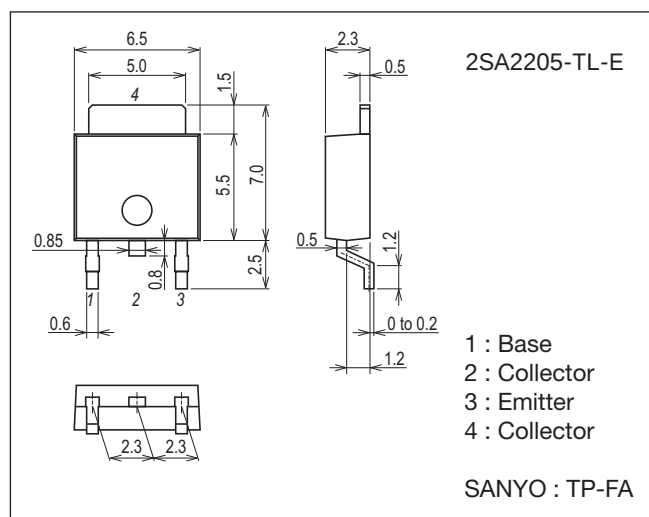
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-100	V
Collector-to-Emitter Voltage	V_{CES}		-100	V
	V_{CEO}		-100	V
Emitter-to-Base Voltage	V_{EBO}		-7	V

Continued on next page.

Package Dimensions unit : mm (typ)
7518-003



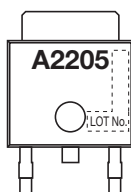
Package Dimensions unit : mm (typ)
7003-003



Product & Package Information

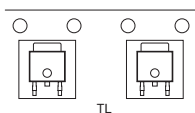
- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

Marking (TP, TP-FA)

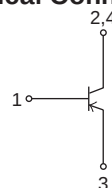


- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252
- Minimum Packing Quantity : 700 pcs./reel

Packing Type (TP-FA) : TL



Electrical Connection



SANYO Semiconductor Co., Ltd.

<http://www.sanyosemi.com/en/network/>

2SA2205

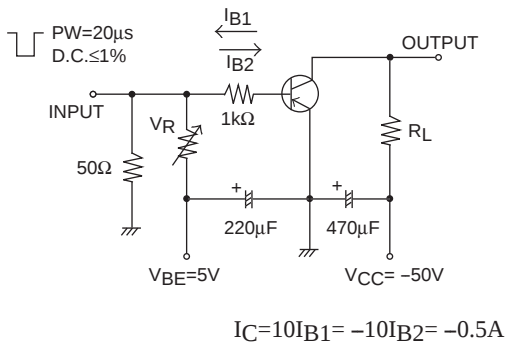
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Parameter	Symbol	Conditions	Ratings	Unit
Collector Current	I_C		-2	A
Collector Current (Pulse)	I_{CP}		-3	A
Base Current	I_B		-400	mA
Collector Dissipation	P_C		0.8	W
		$T_c=25^\circ\text{C}$	15	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

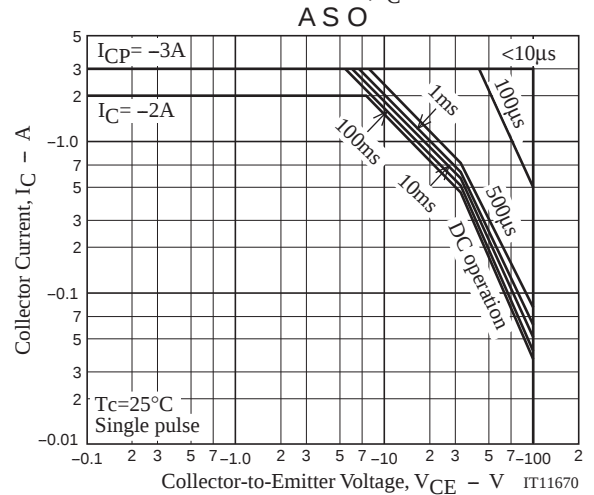
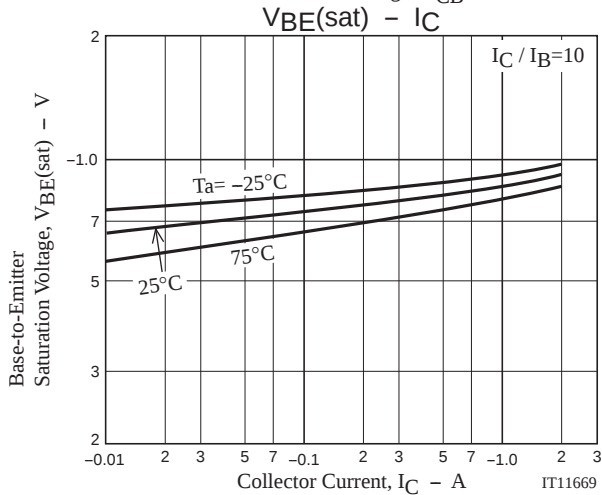
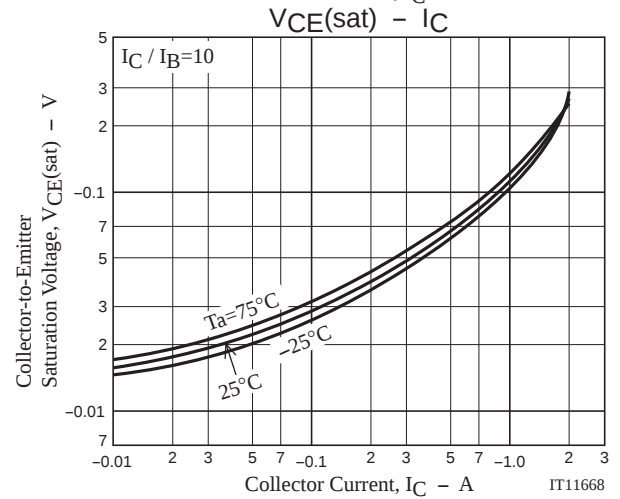
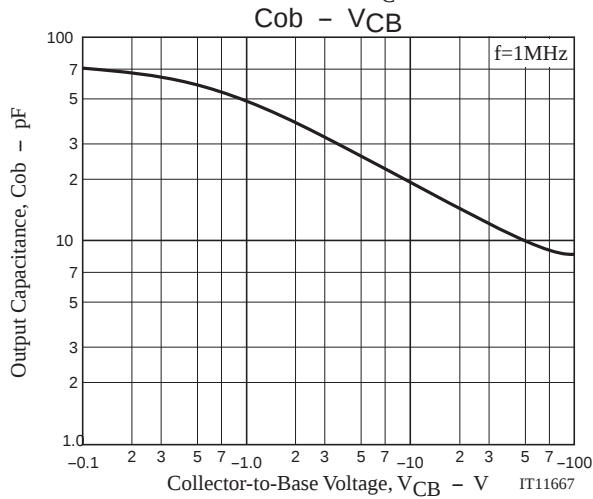
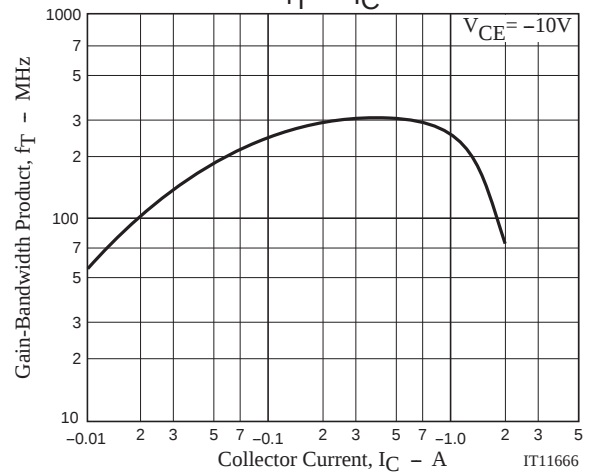
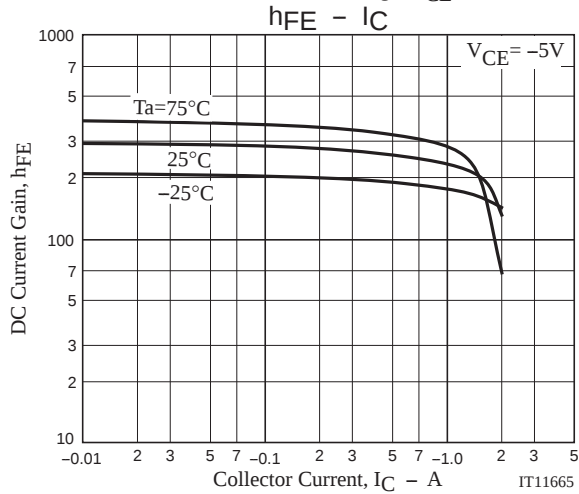
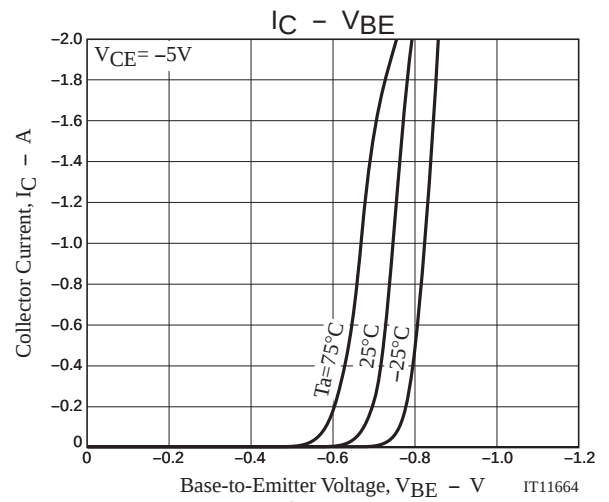
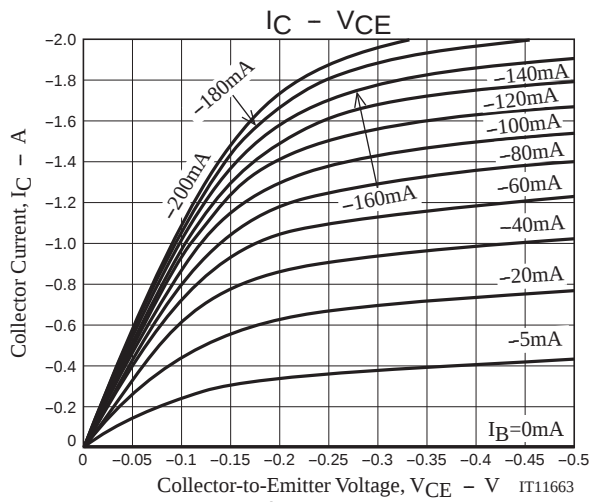
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-80\text{V}$, $I_E=0\text{A}$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}$, $I_C=0\text{A}$			-1	μA
DC Current Gain	h_{FE}	$V_{CE}=-5\text{V}$, $I_C=-100\text{mA}$	200		400	
Gain-Bandwidth Product	f_T	$V_{CE}=-10\text{V}$, $I_C=-500\text{mA}$		300		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}$, $f=1\text{MHz}$		20		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-1\text{A}$, $I_B=-100\text{mA}$		-120	-240	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-1\text{A}$, $I_B=-100\text{mA}$		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}$, $I_E=0\text{A}$	-100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=-100\mu\text{A}$, $R_{BE}=0\Omega$	-100			V
	$V_{(BR)CEO}$	$I_C=-1\text{mA}$, $R_{BE}=\infty$	-100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}$, $I_C=0\text{A}$	-7			V
Turn-ON Time	t_{on}	See specified Test Circuit.		40		ns
Storage Time	t_{stg}			600		ns
Fall Time	t_f			30		ns

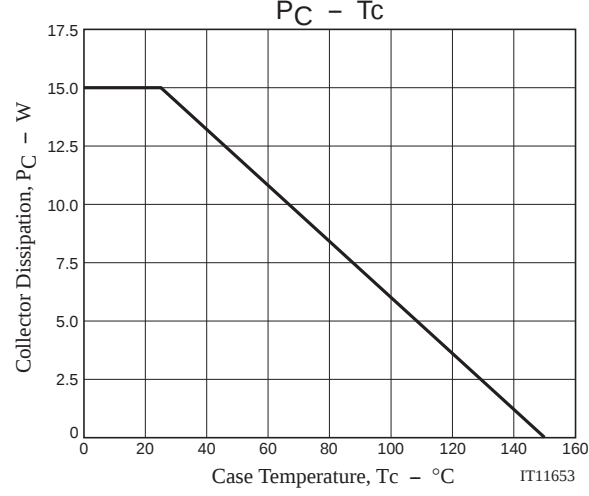
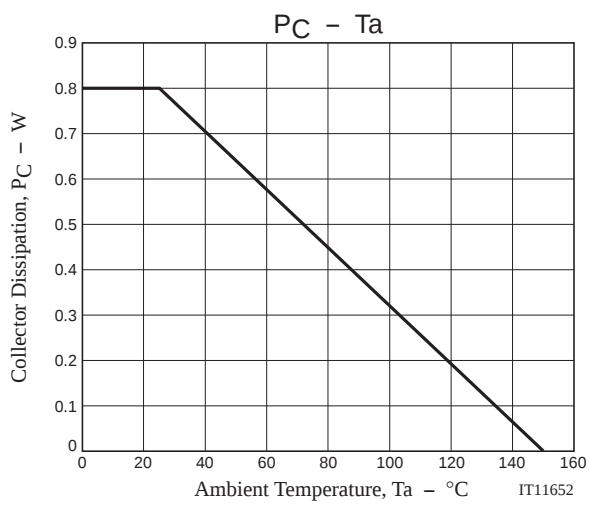
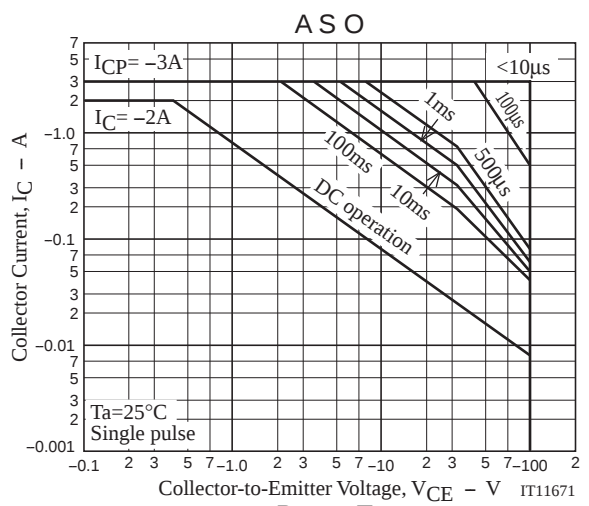
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
2SA2205-E	TP	500pcs./bag	Pb Free
2SA2205-TL-E	TP-FA	700pcs./reel	





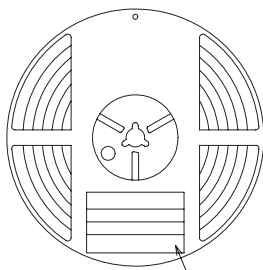
Taping Specification

2SA2205-TL-E

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)
TP-FA	TP	700	2,100	12,600	3 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)

(P) TYPE	000000000
(1) LOT	00
(Q) QTY	0,000 (1) LEAD FREE *
(Z) SPECIAL	
	20722005310C
	ASSEMBLY:**** (DIFFUSION:****)

Outer box label

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

TYPE CODE	
	oooooooooooo
TYPE	○○○○○○○○
QTY	0,000 PCS (1) LEAD FREE *
LOT	○○○○○○○○
PACKAGE	○○○○○○○○
SPECIAL	
	20722005310C
	ASSEMBLY:**** (DIFFUSION:****)

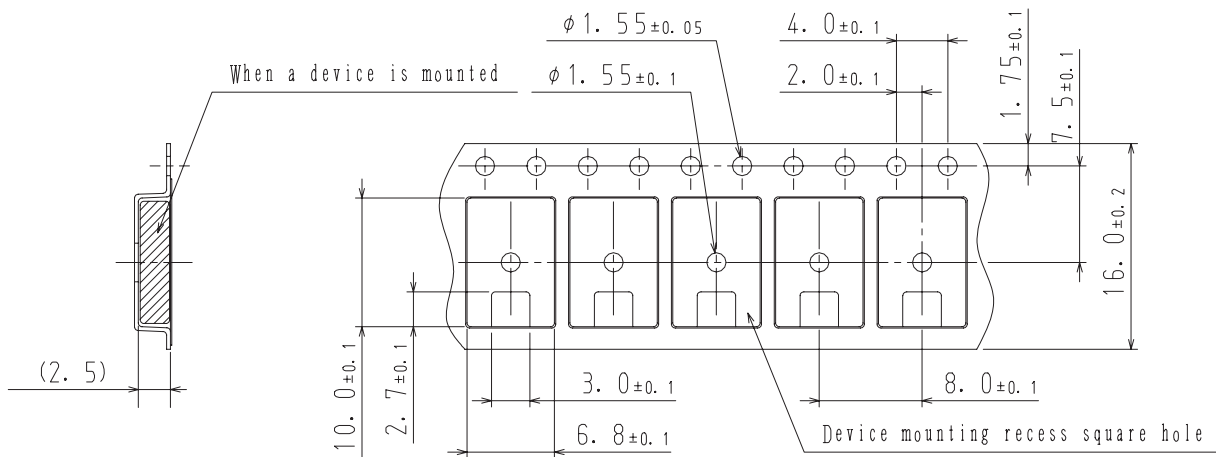
NOTE (1)

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

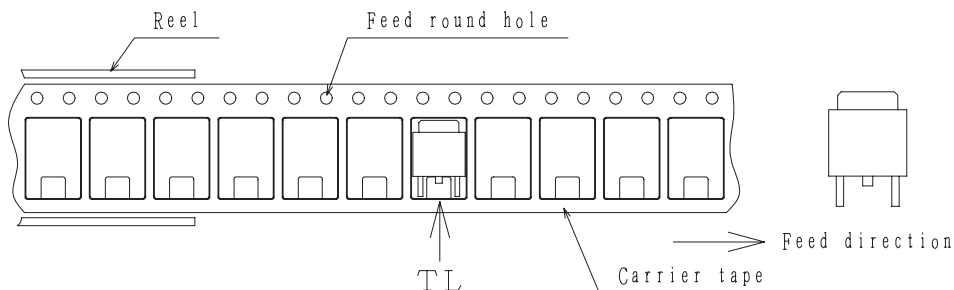
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

Taping configuration

1. Carrier tape size (unit:mm)

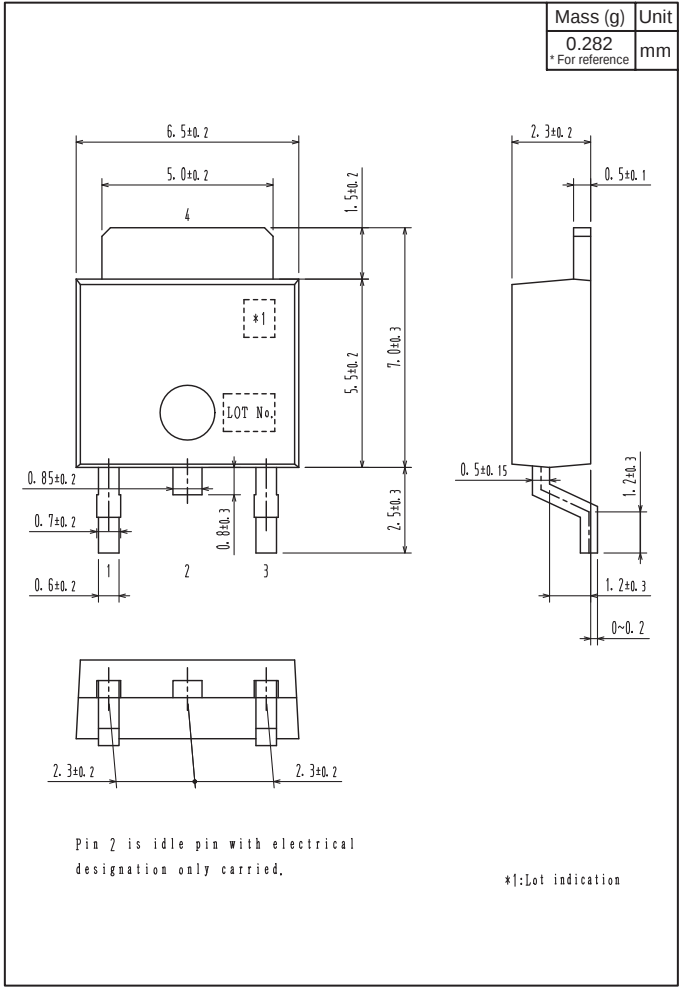


2. Device placement direction

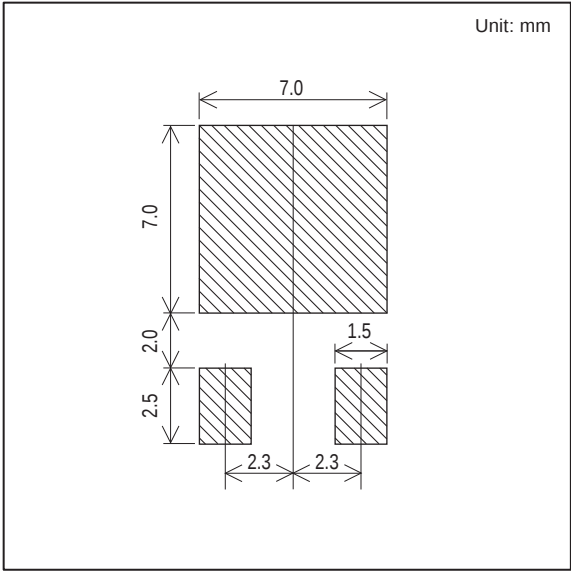


Those with one electrode terminal on the feed hole side.....TL

Outline Drawing
2SA2205-TL-E



Land Pattern Example

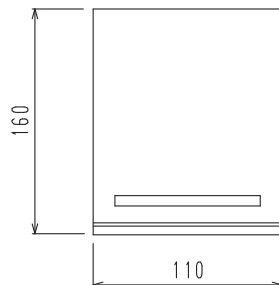


Bag Packing Specification

2SA2205-E

1. Packing Format

Package Name	Maximum Number of devices contained (pcs)			
	Bag	Inner box	Outer box	
TP	500	B-1	A-1	A-2
		10, 000	50, 000	30, 000
		Packing format (Dimensions:mm (external))		
		Inner box	Outer box	
		B-1	A-1	A-2
		445×225×55	470×250×300	470×250×190

2. Bag dimensions
(unit:mm)3. Bag label, Inner box label
(unit:mm)

Type No. →	(P) TYPE 0000000000	43
LOT No. →	(1) LOT 00	
Quantity →	(Q) QTY 0,000 (1) LEAD FREE *	
Origin →	(2) SPECIAL *20722005310C* ASSEMBLY:**** (DIFFUSION:****)	

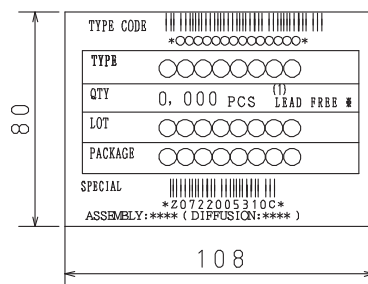
4. Outer box label
(unit:mm)

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

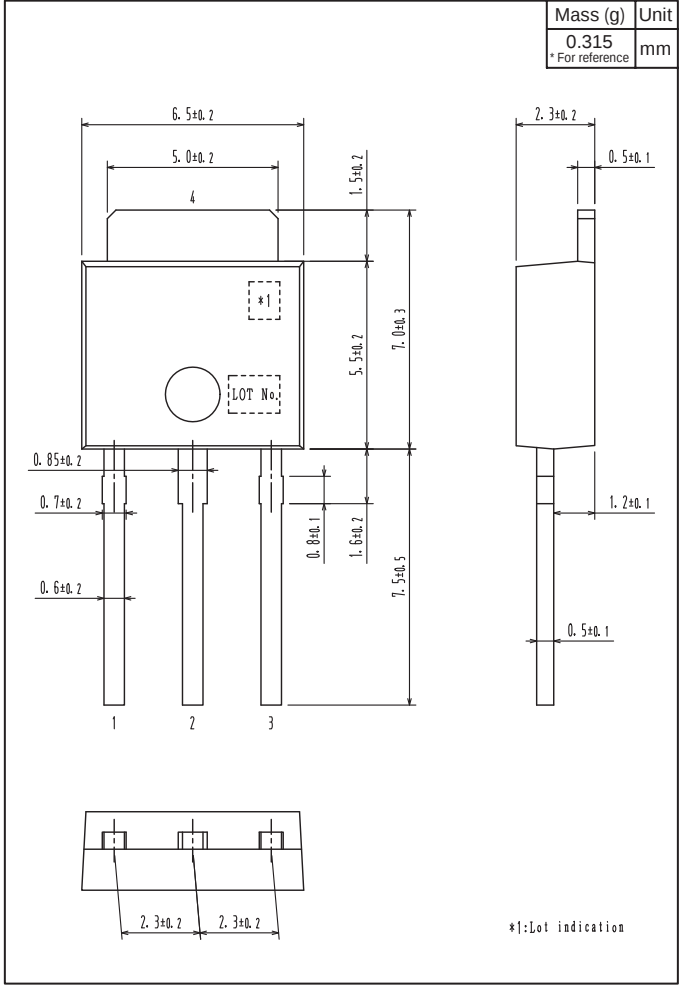
NOTE (1)

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



Outline Drawing
2SA2205-E



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