



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SC6099 — NPN Epitaxial Planar Silicon Transistor High-Voltage Switching Applications

Applications

- DC / DC converter, relay drivers, lamp drivers, motor drivers, inverter

Features

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

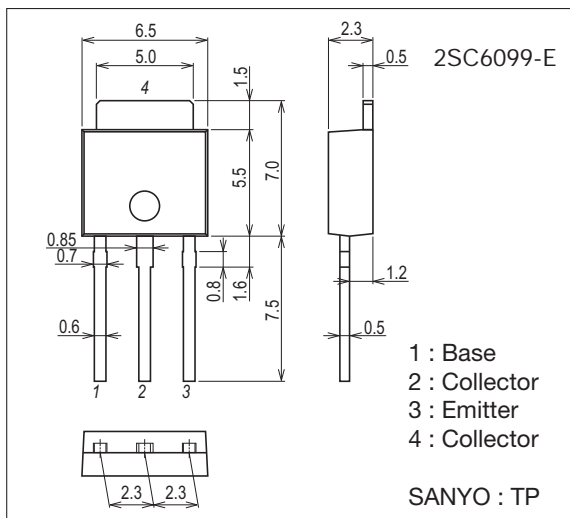
Specifications

Absolute Maximum Ratings at Ta=25°C

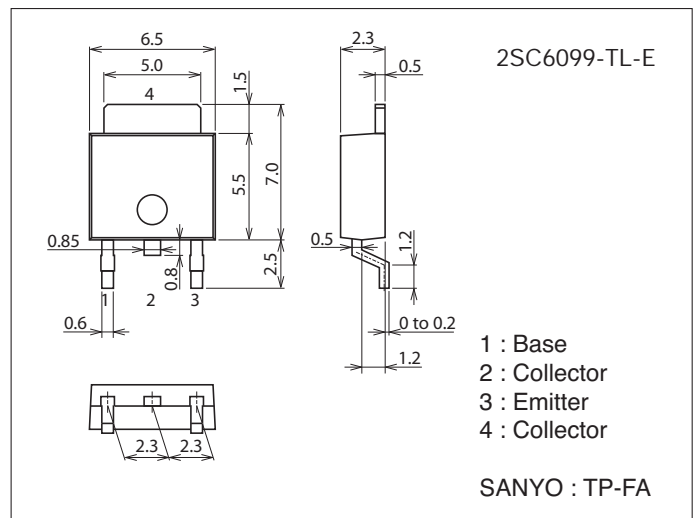
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		120	V
Collector-to-Emitter Voltage	VCES		120	V
Collector-to-Emitter Voltage	VCEO		100	V
Emitter-to-Base Voltage	VEBO		6.5	V
Collector Current	IC		2	A
Collector Current (Pulse)	ICP		3	A
Base Current	IB		400	mA

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Package Dimensions unit : mm (typ) 7518-003



Package Dimensions unit : mm (typ) 7003-003

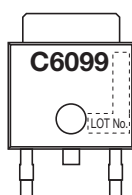


Product & Package Information

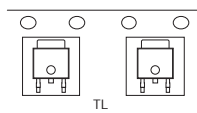
- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

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

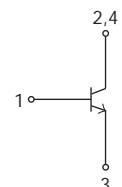
Marking (TP, TP-FA)



Packing Type (TP-FA) : TL



Electrical Connection



2SC6099

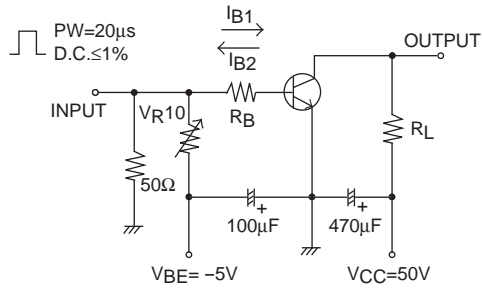
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Parameter	Symbol	Conditions	Ratings	Unit
Collector Dissipation	PC		0.8	W
		T _c =25°C	15	W
Junction Temperature	T _j		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at T_a=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CBO}	V _{CB} =80V, I _E =0A			1	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =4V, I _C =0A			1	μA
DC Current Gain	h _{FE}	V _{CE} =5V, I _C =100mA	300		600	
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =300mA		300		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		13		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =1A, I _B =100mA		110	165	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =1A, I _B =100mA		0.9	1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =10μA, I _E =0A	120			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CES}	I _C =100μA, R _{BE} =0Ω	120			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =1mA, R _{BE} =∞	100			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =10μA, I _C =0A	6.5			V
Turn-On Time	t _{on}	See specified Test Circuit.		40		ns
Storage Time	t _{stg}			1100		ns
Fall Time	t _f			40		ns

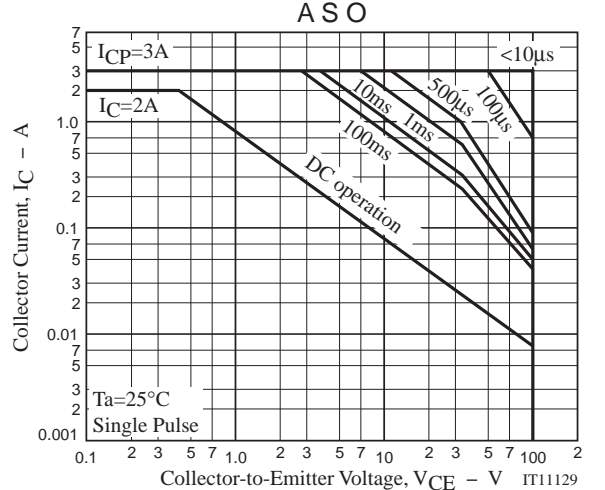
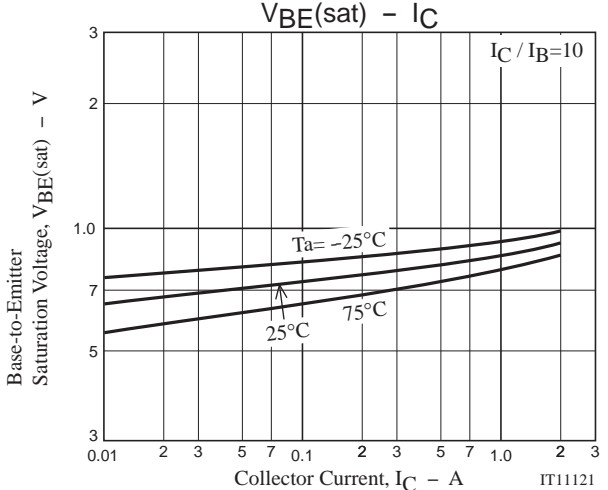
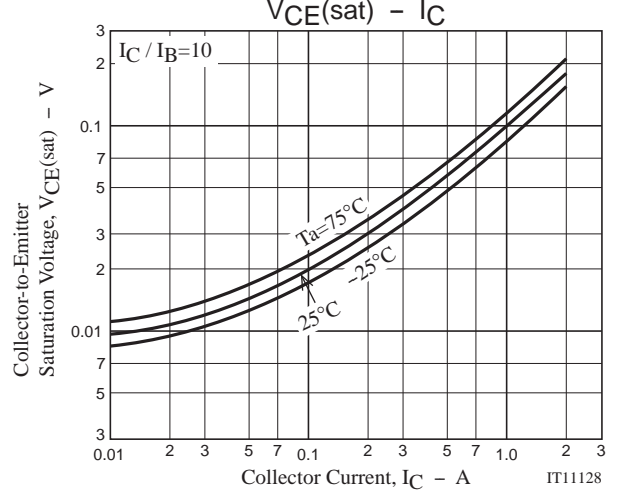
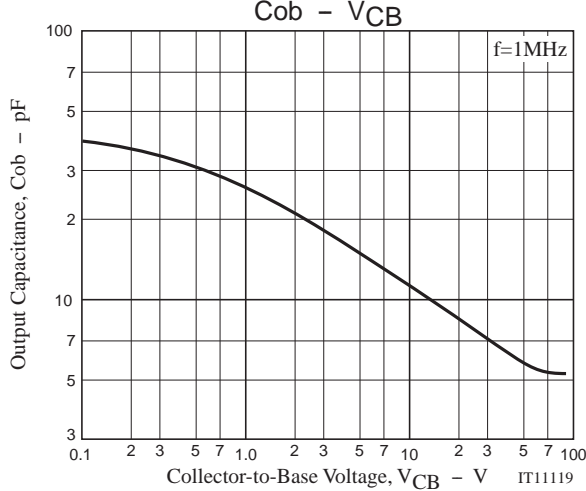
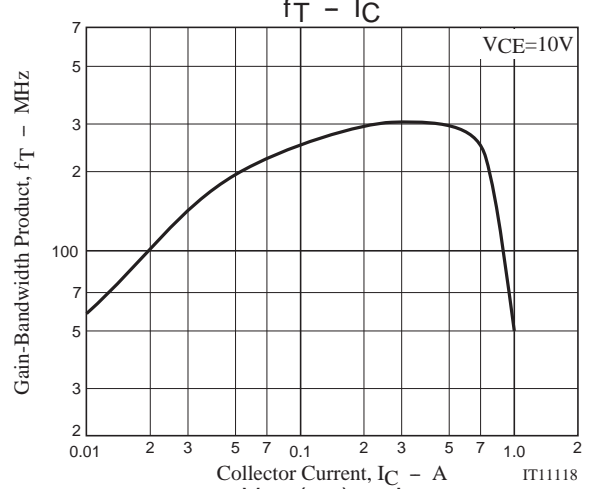
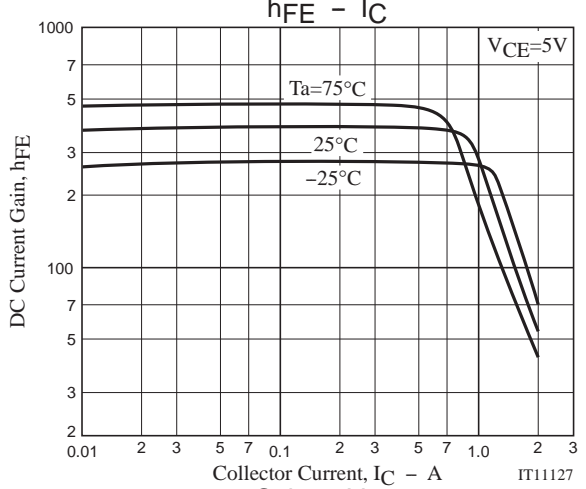
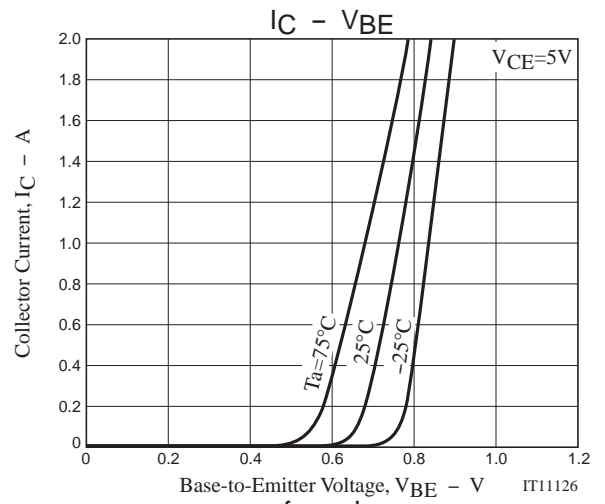
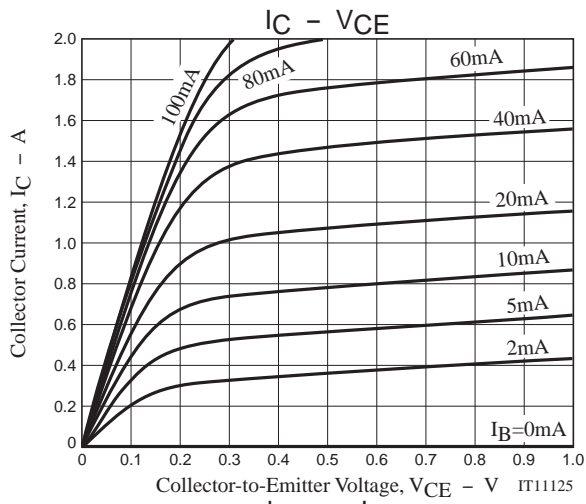
Switching Time Test Circuit

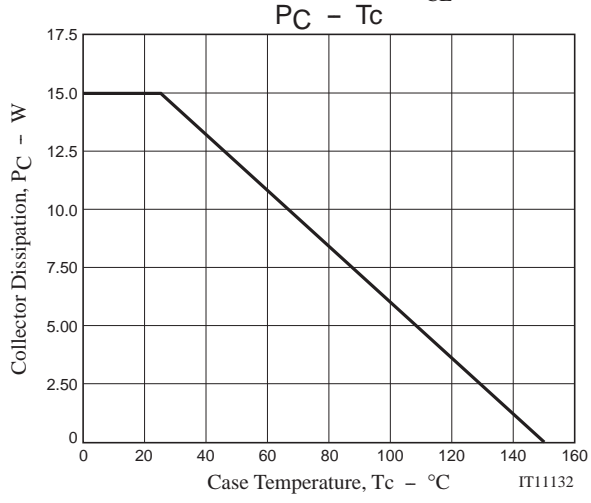
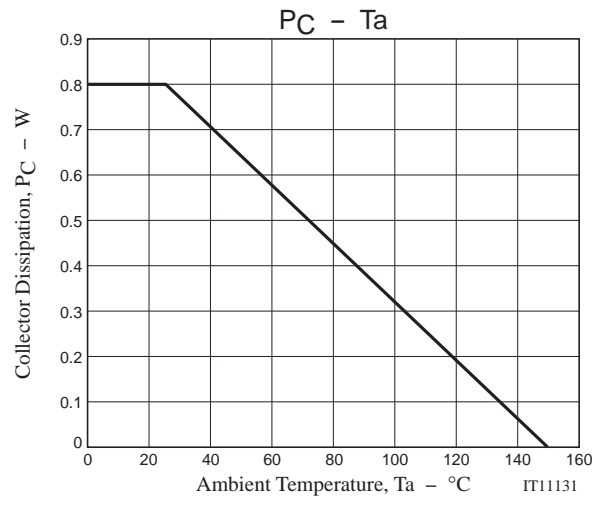
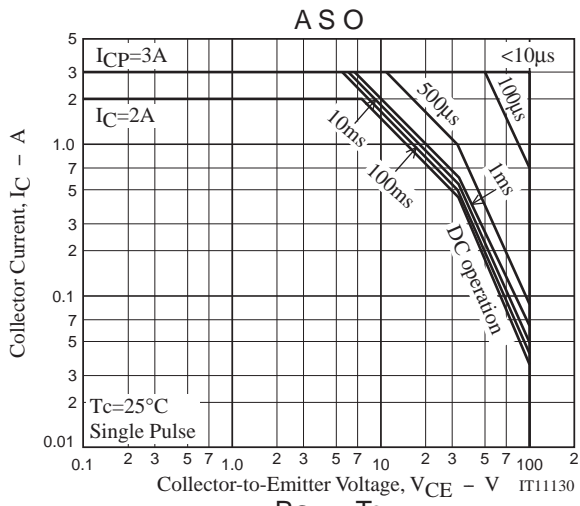


$$I_C = 10I_{B1} = -10I_{B2} = 0.5A$$

Ordering Information

Device	Package	Shipping	memo
2SC6099-E	TP	500pcs./bag	Pb Free
2SC6099-TL-E	TP-FA	700pcs./reel	





Taping Specification

2SC6099-TL-E

Packing Format

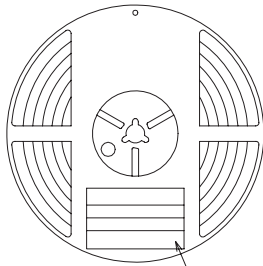
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
TP-FA	TP	700	2,100	12,600	3 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label
(unit:mm)

Outer box label

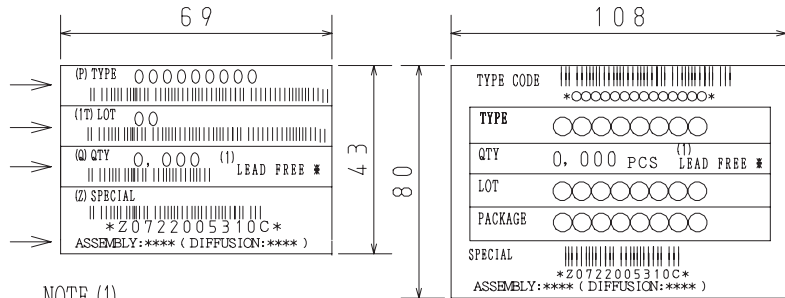
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Type No.
LOT No.
Quantity
Origin

Reel label



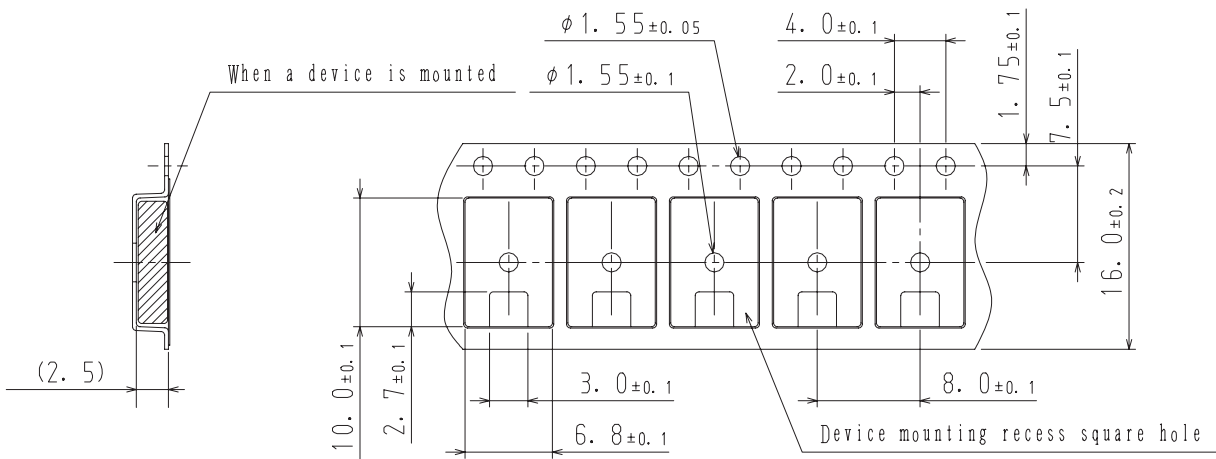
NOTE (1)

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

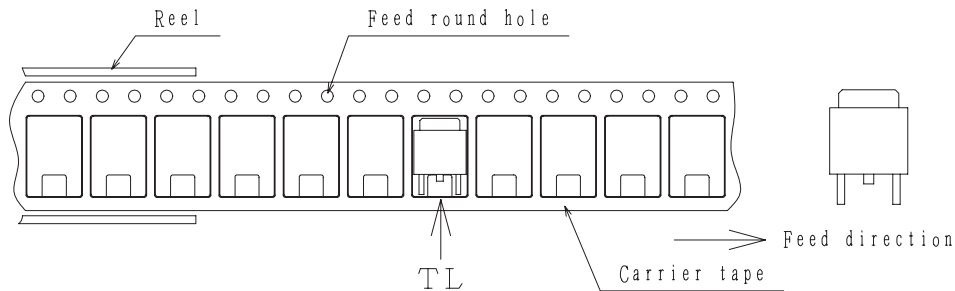
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

Taping configuration

1. Carrier tape size (unit:mm)



2. Device placement direction

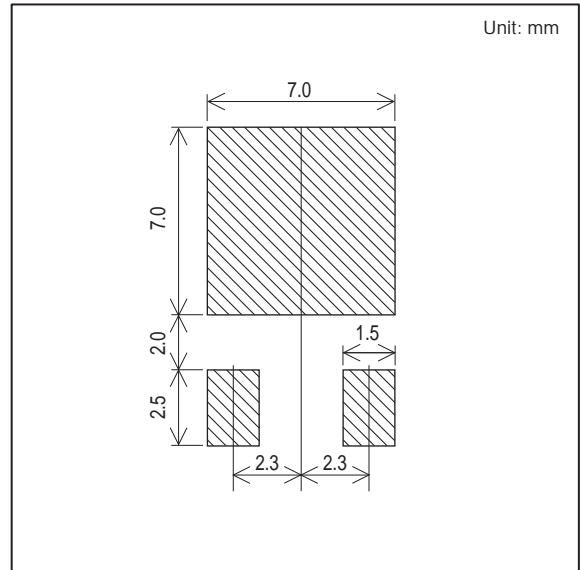
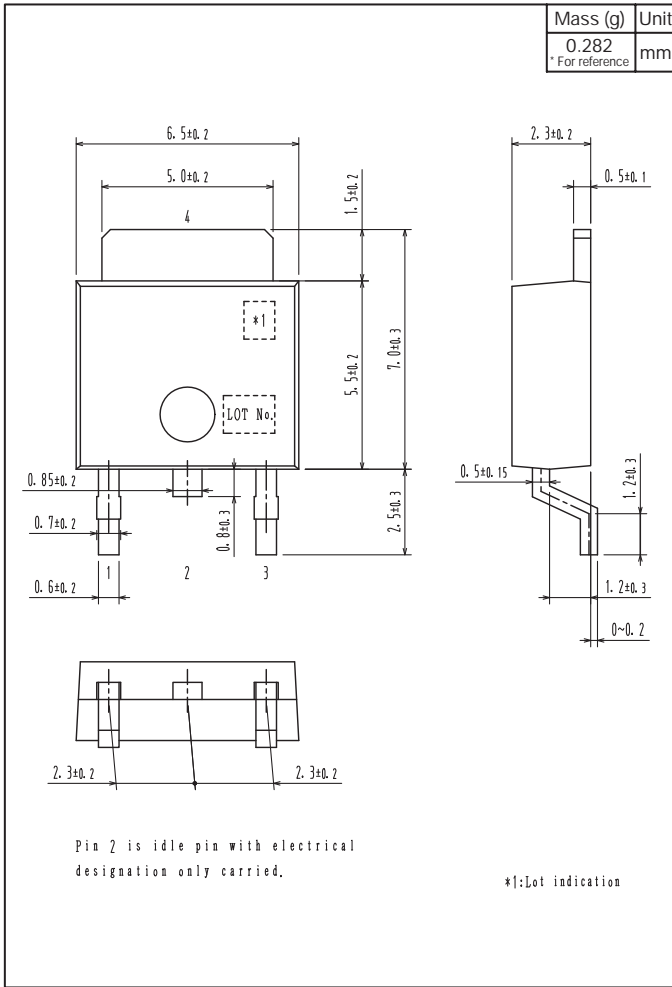


Those with one electrode terminal on the feed hole side.....TL

Outline Drawing

2SC6099-TL-E

Land Pattern Example



Bag Packing Specification

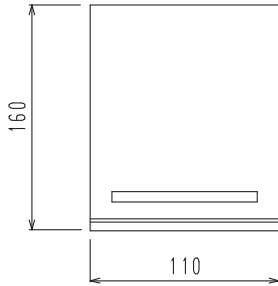
2SC6099-E

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

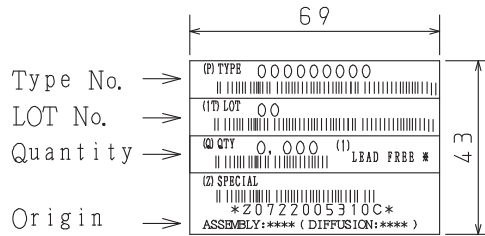
2. Bag dimensions

(unit:mm)



3. Bag label, Inner box label

(unit:mm)



4. Outer box label

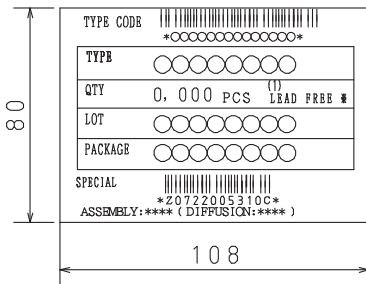
(unit:mm)

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.

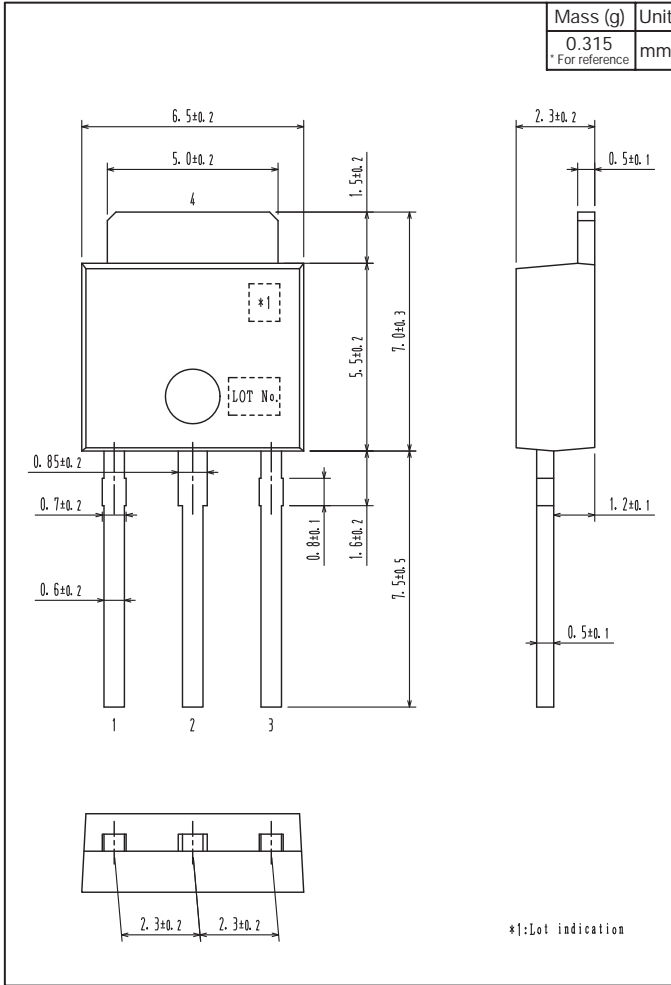
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3



2SC6099

Outline Drawing

2SC6099-E



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