

## 2SD1805

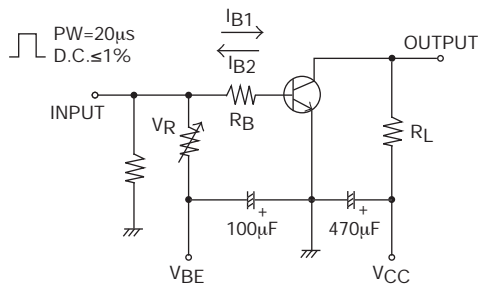
### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=50V, I_E=0A$			100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5V, I_C=0A$			100	nA
DC Current Gain	$h_{FE1}$	$V_{CE}=2V, I_C=500mA$	120*		560*	
	$h_{FE2}$	$V_{CE}=2V, I_C=3A$	95			
Gain-Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=50mA$		120		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz$		45		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3A, I_B=60mA$		220	500	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=3A, I_B=60mA$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	20			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	6			V
Turn-On Time	$t_{on}$	See specified Test Circuit		30		ns
Storage Time	$t_{stg}$			300		ns
Fall Time	$t_f$			40		ns

\* : The 2SD1805 is classified by 500mA  $h_{FE}$  as follows.

Rank	E	F	G
$h_{FE}$	120 to 200	160 to 320	280 to 560

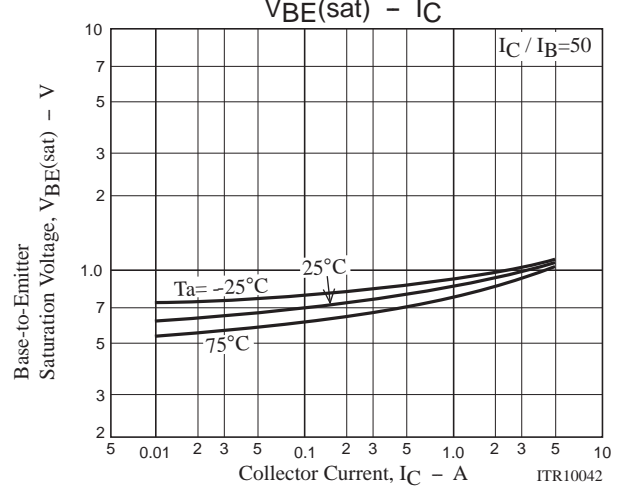
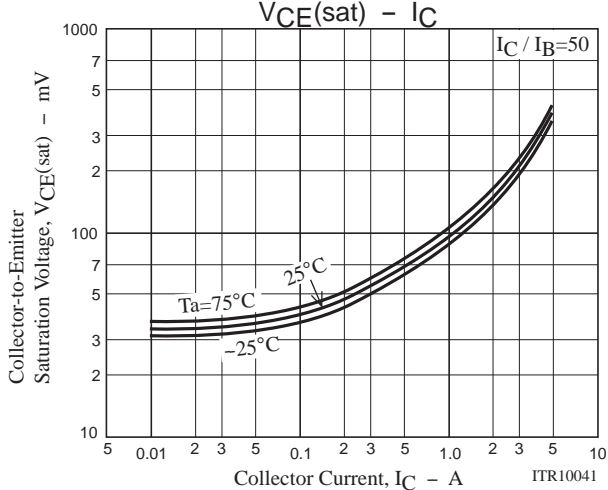
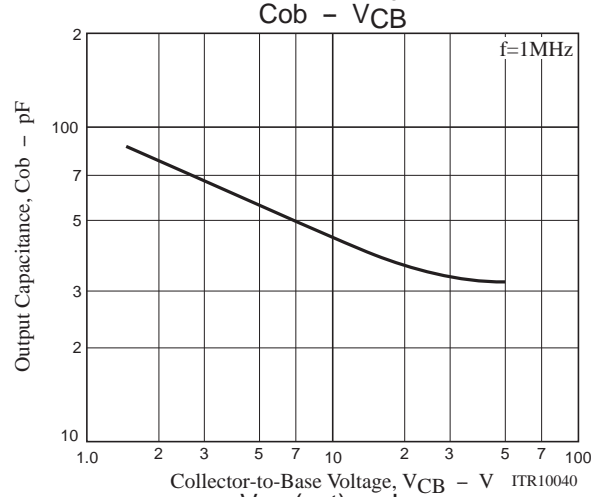
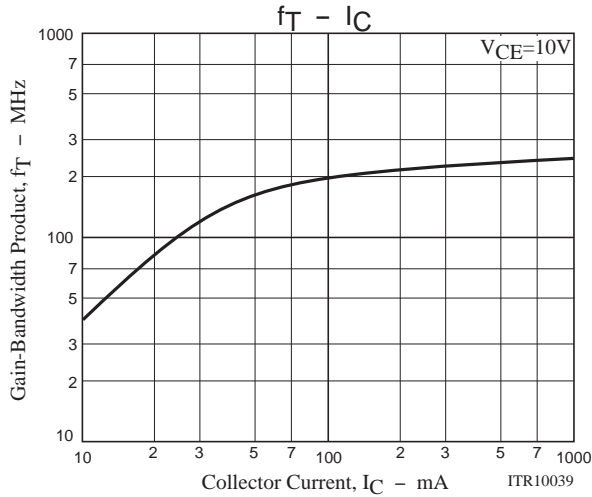
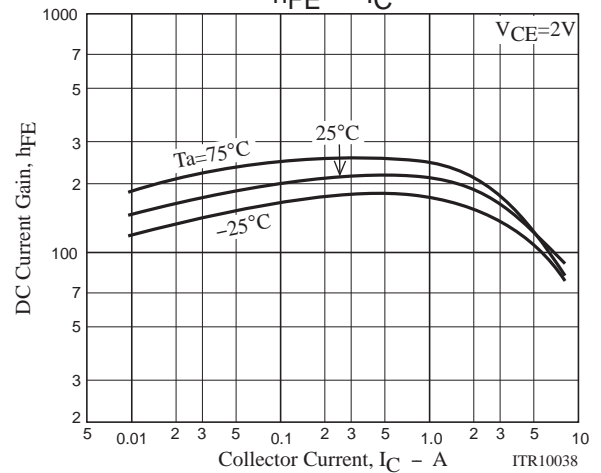
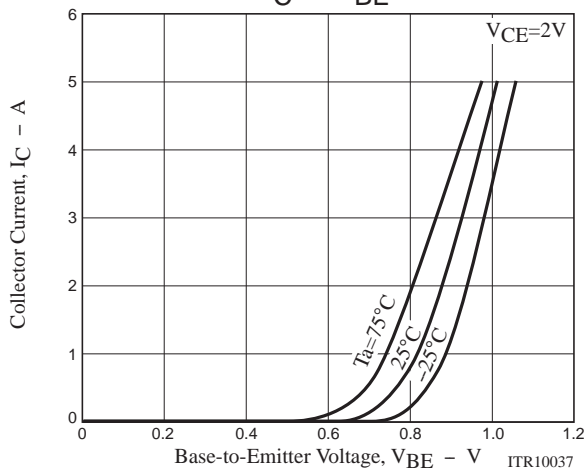
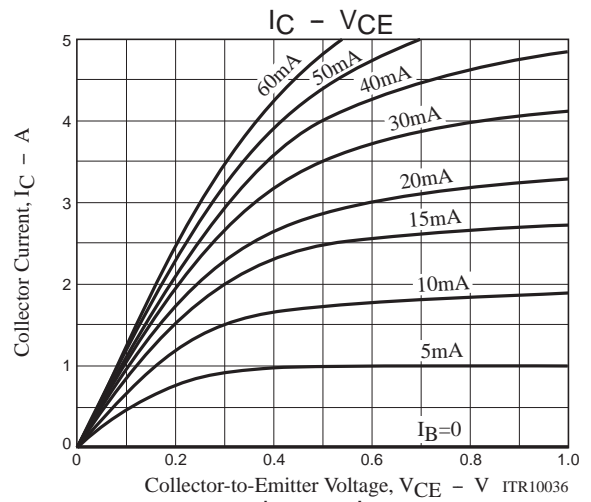
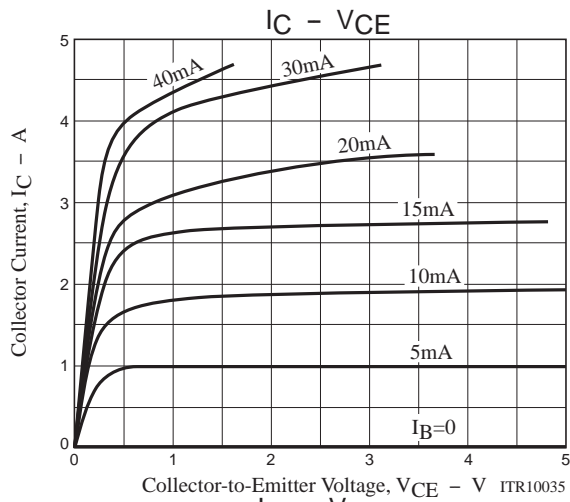
### Switching Time Test Circuit

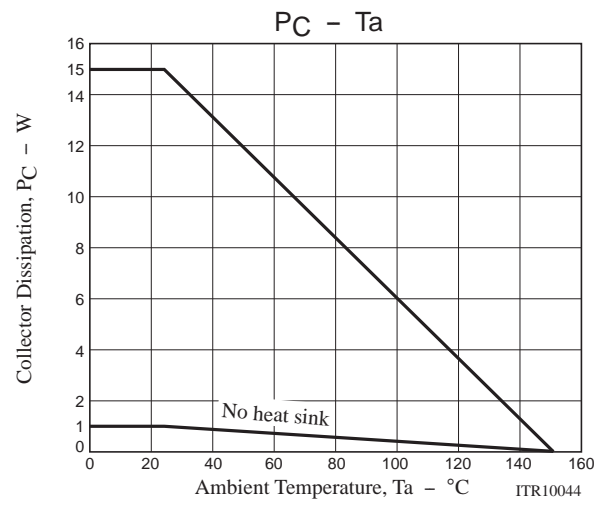
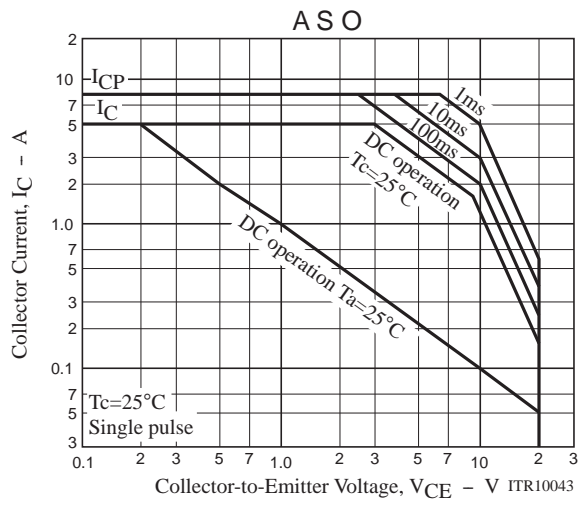


$$I_C = 10I_{B1} = -10I_{B2} = 2A, V_{CC} = 10V$$

### Ordering Information

Device	Package	Shipping	memo
2SD1805F-E	TP	500pcs./bag	Pb Free
2SD1805G-E	TP	500pcs./bag	
2SD1805F-TL-E	TP-FA	700pcs./reel	
2SD1805G-TL-E	TP-FA	700pcs./reel	





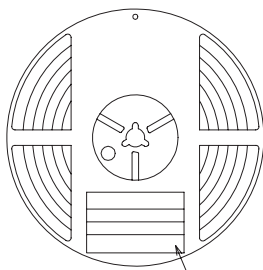
## Taping Specification

2SD1805F-TL-E, 2SD1805G-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



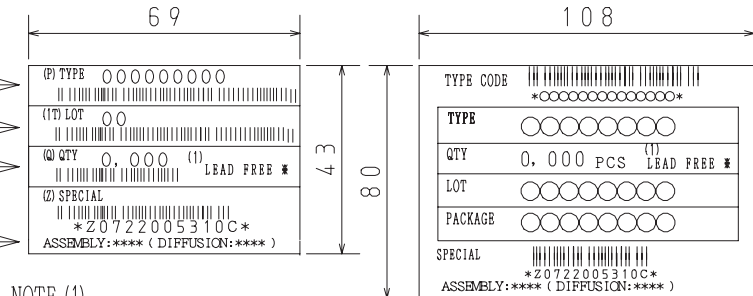
Reel label

Type No.  
LOT No.  
Quantity  
Origin

Reel label, Inner box label  
(unit:mm)

Outer box label

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



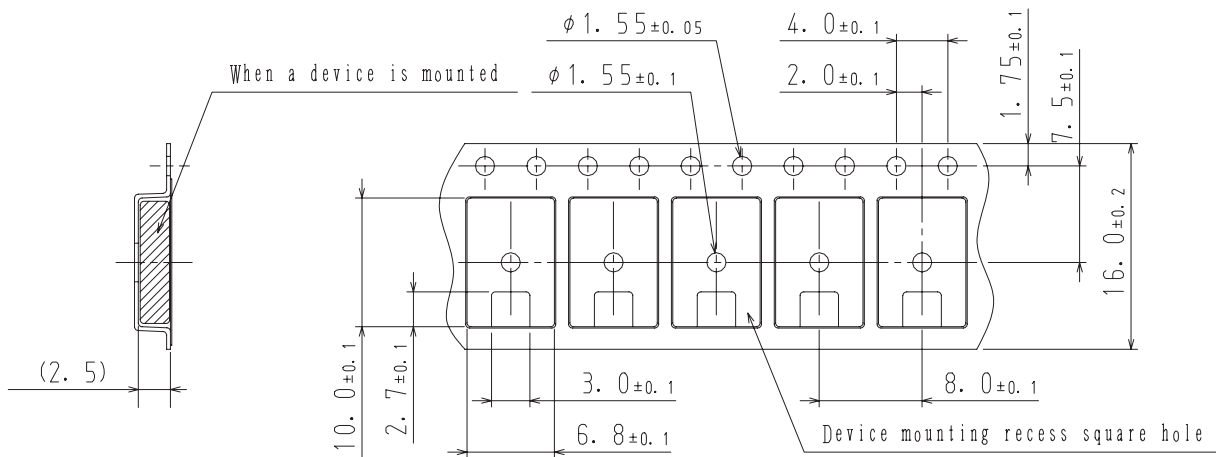
NOTE (1)

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

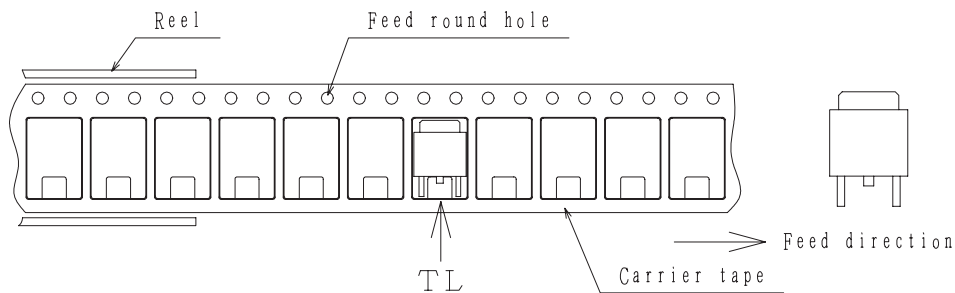
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

## Taping configuration

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



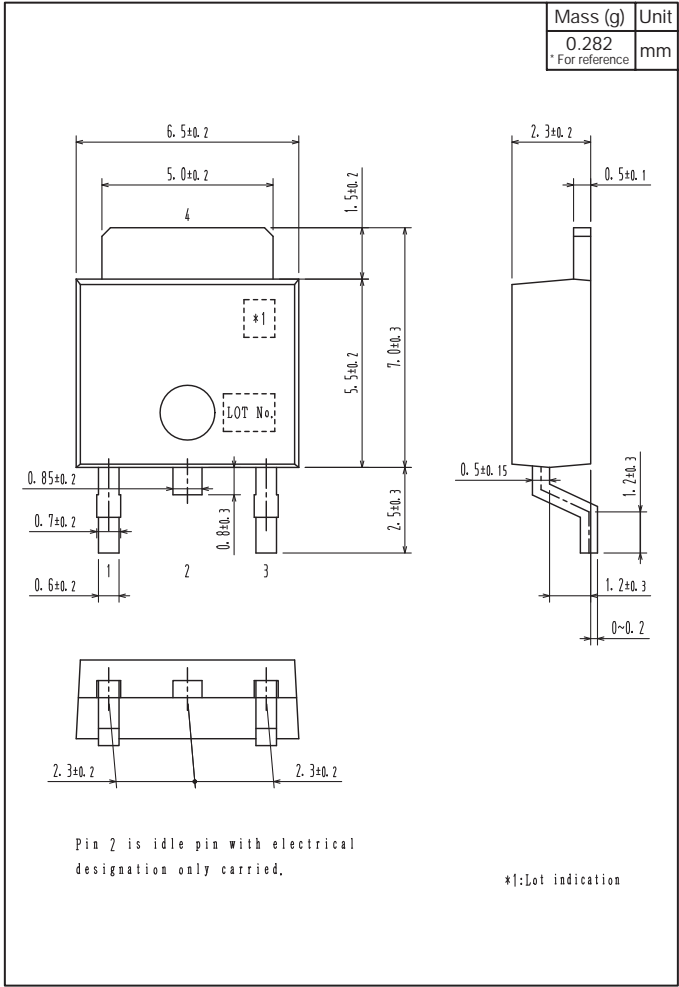
## 2. Device placement direction



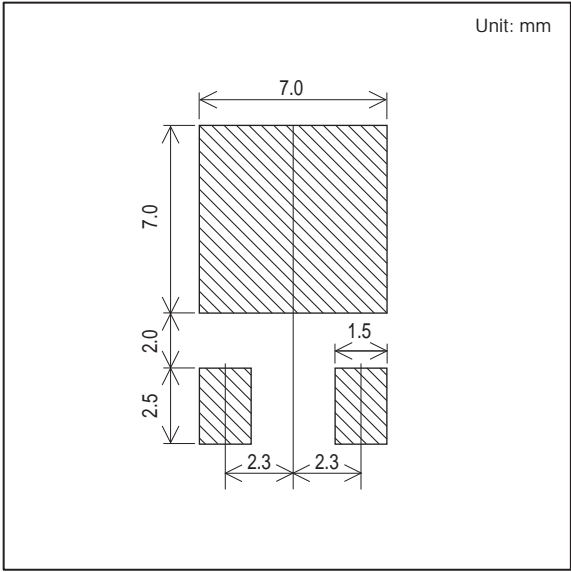
Those with one electrode terminal on the feed hole side.....TL

Outline Drawing

2SD1805F-TL-E, 2SD1805G-TL-E



Land Pattern Example



## Bag Packing Specification

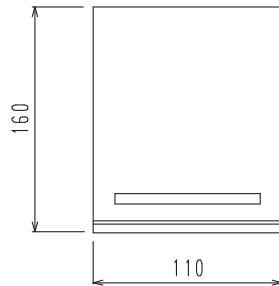
2SD1805F-E, 2SD1805G-E

### 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

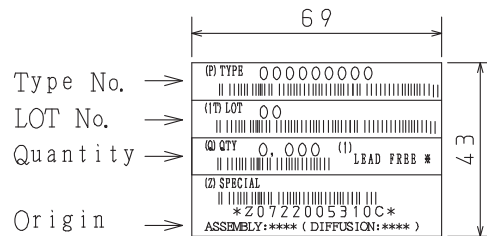
### 2. Bag dimensions

(unit:mm)



### 3. Bag label, Inner box label

(unit:mm)



### 4. Outer box label

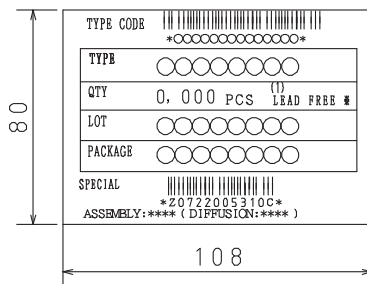
(unit:mm)

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distribution process,

#### NOTE (1)

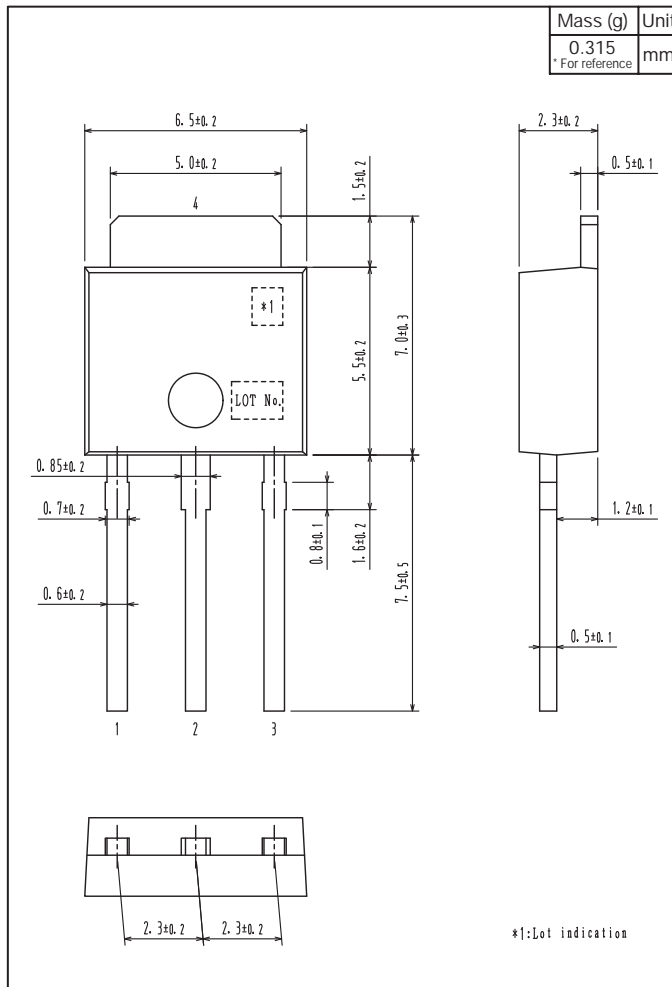
The LEAD FREE \* description shows that the  
surface treatment of the terminal is lead free.

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



## Outline Drawing

2SD1805F-E, 2SD1805G-E



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