



SFT1202

Bipolar Transistor

150V, 2A, Low $V_{CE(sat)}$, NPN Single TP/TP-FA

ON Semiconductor®

<http://onsemi.com>

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 $T_a=25^\circ\text{C}$

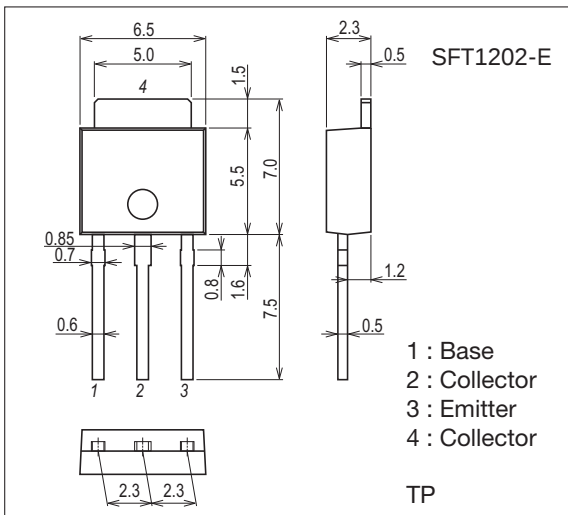
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		180	V
Collector-to-Emitter Voltage	V_{CES}		180	V
Collector-to-Base Voltage	V_{CEO}		150	V
Emitter-to-Base Voltage	V_{EBO}		7	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		3	A
Base Current	I_B		400	mA

Continued on next page.

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.

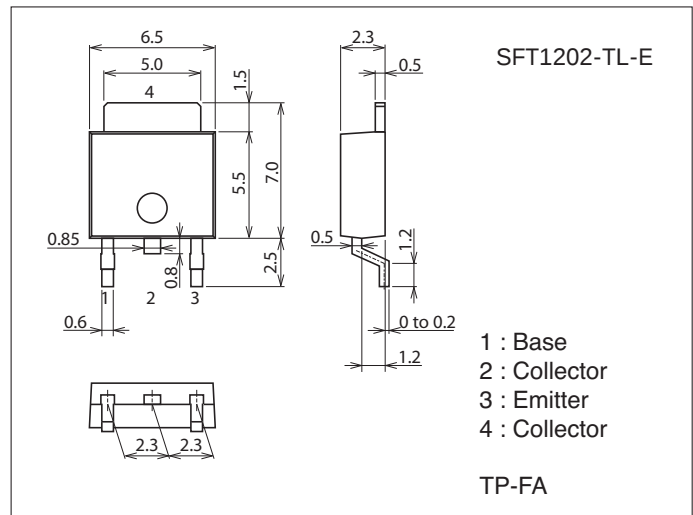
Package Dimensions unit : mm (typ)

7518-003



Package Dimensions unit : mm (typ)

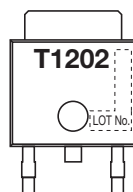
7003-003



Product & Package Information

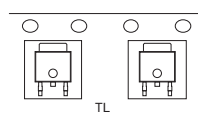
- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

Marking (TP, TP-FA)

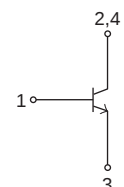


- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252
- Minimum Packing Quantity : 700 pcs./reel

Packing Type (TP-FA) : TL



Electrical Connection



SFT1202

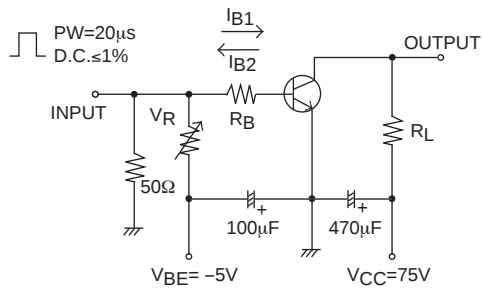
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Parameter	Symbol	Conditions	Ratings	Unit
Collector Dissipation	P _C		1	W
		T _C =25°C	15	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

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	200		560	
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =300mA		140		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		12		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)1}	I _C =1A, I _B =100mA		110	165	mV
	V _{CE(sat)2}	I _C =0.5A, I _B =50mA		65	100	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =1A, I _B =100mA		0.85	1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =10μA, I _E =0A	180			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CES}	I _C =100μA, R _{BE} =0Ω	180			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =1mA, R _{BE} =∞	150			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =10μA, I _C =0A	7			V
Turn-ON Time	t _{on}	See specified Test Circuit.		50		ns
Storage Time	t _{stg}			1460		ns
Fall Time	t _f			70		ns

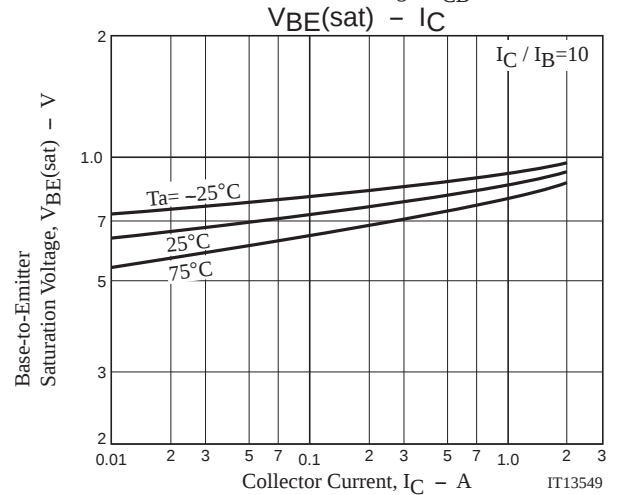
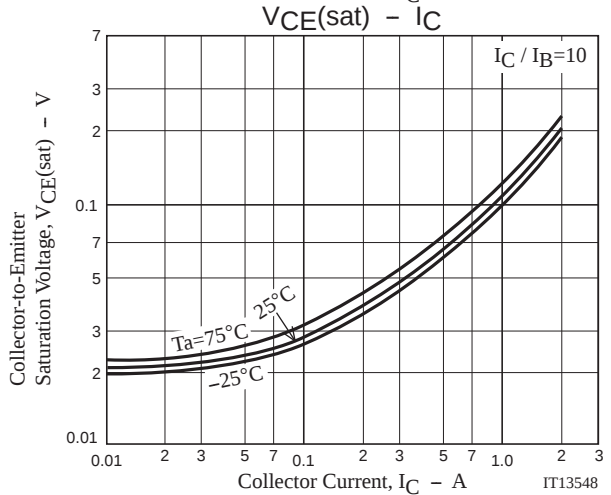
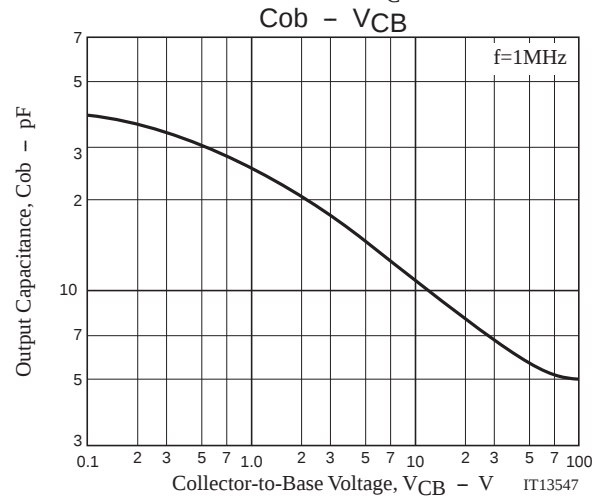
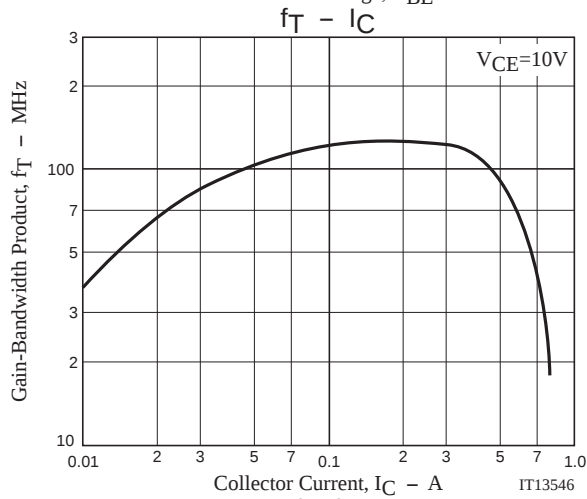
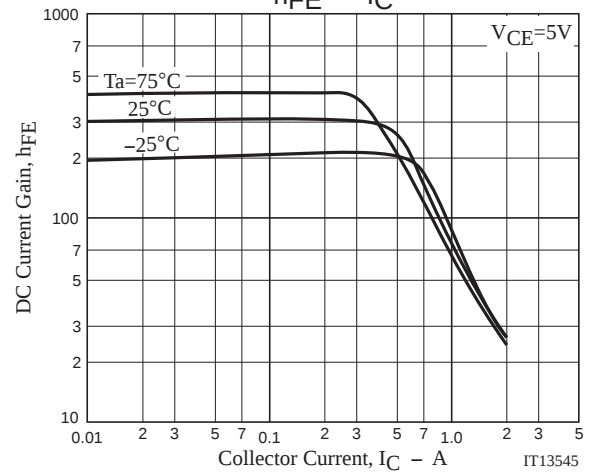
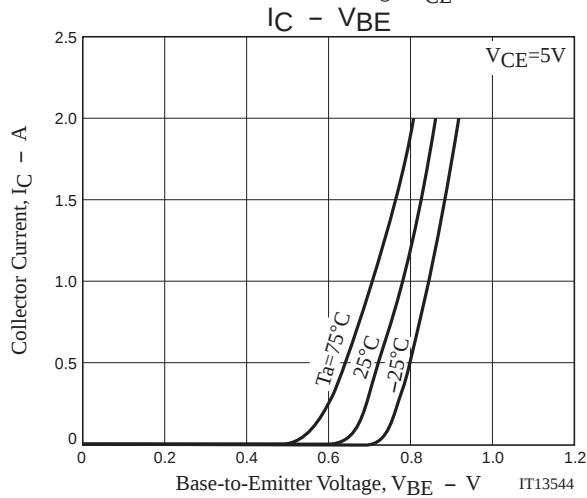
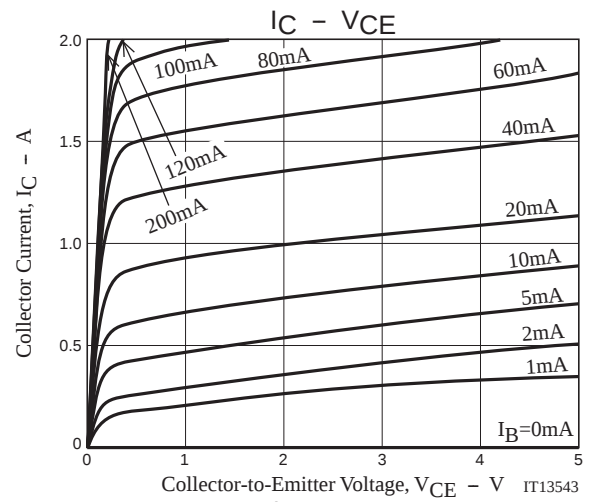
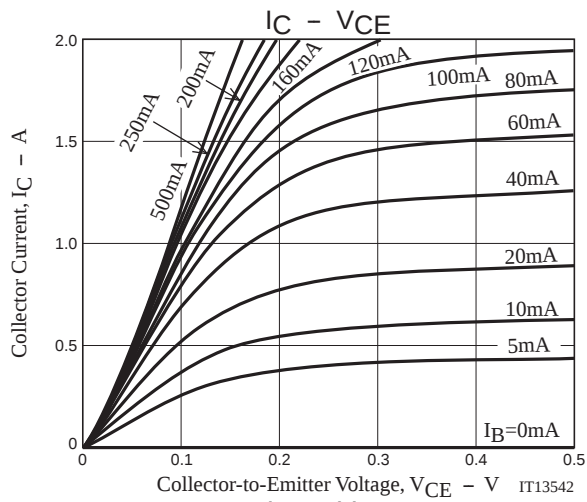
Switching Time Test Circuit

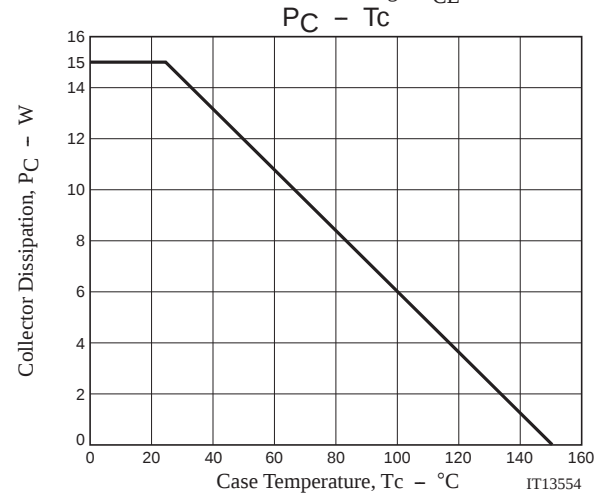
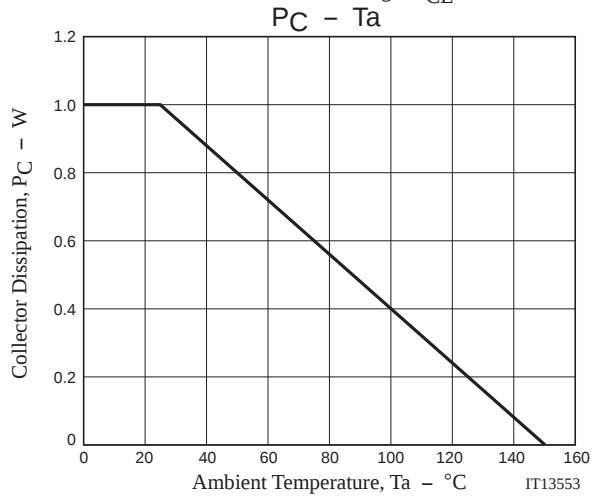
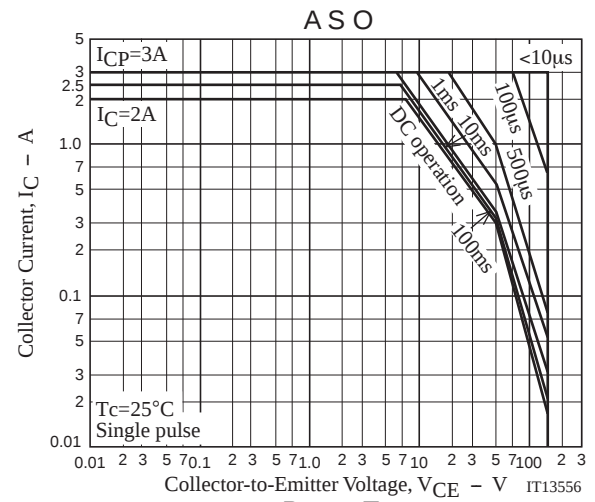
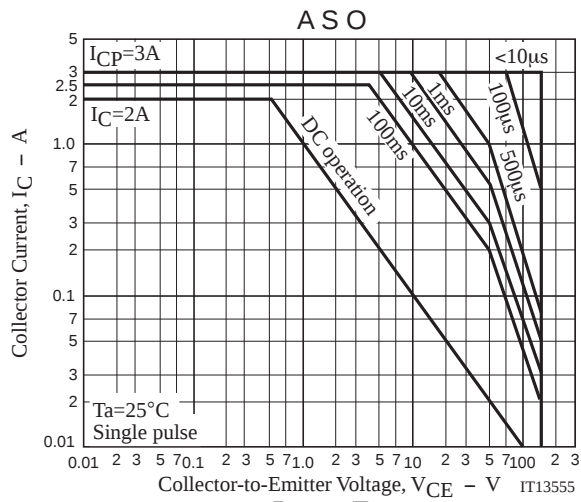


$$I_C = 10I_{B1} = -10I_{B2} = 0.5A$$

Ordering Information

Device	Package	Shipping	memo
SFT1202-E	TP	500pcs./bag	Pb Free
SFT1202-TL-E	TP-FA	700pcs./reel	





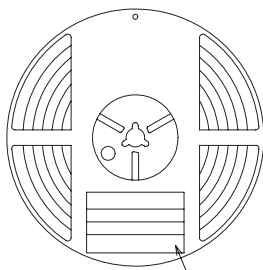
Taping Specification

SFT1202-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



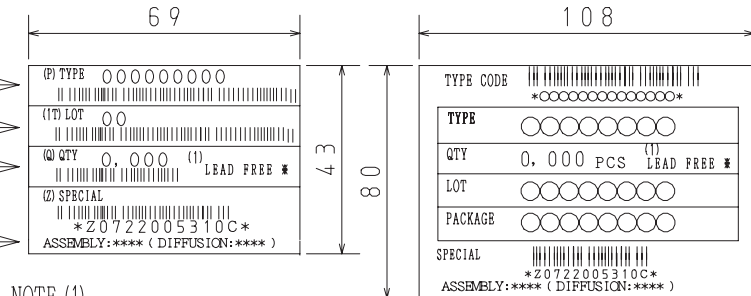
Reel label

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.



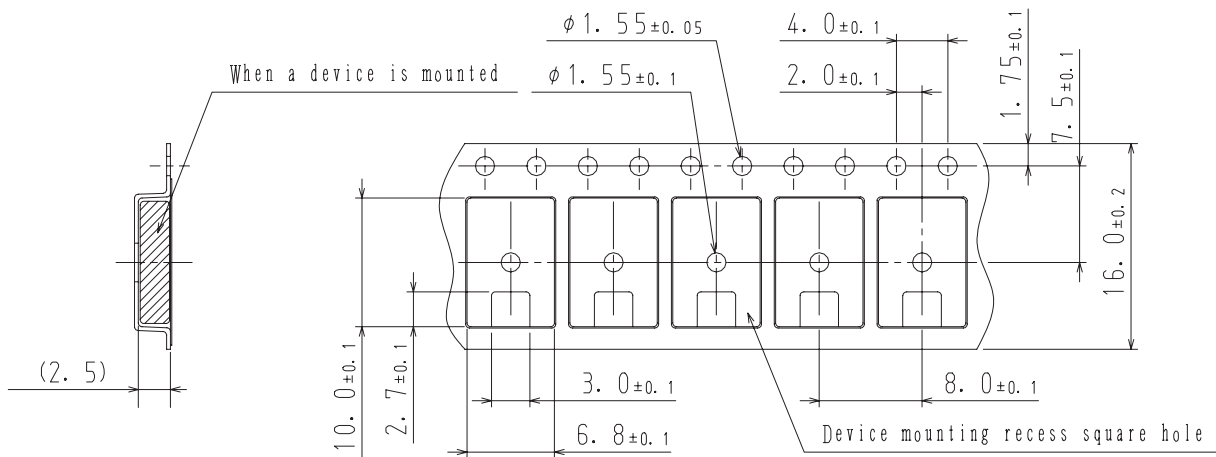
NOTE (1)

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

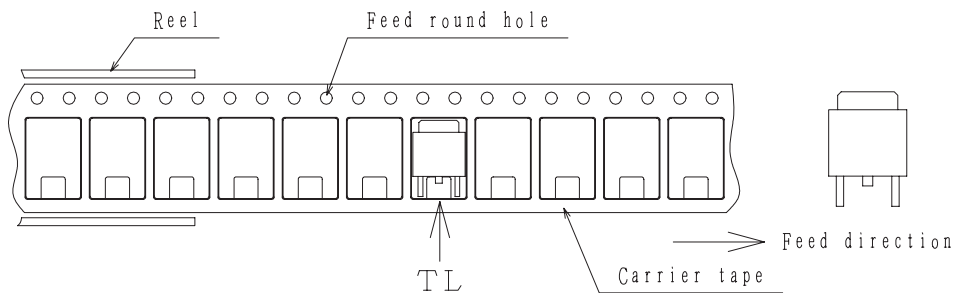
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

Taping configuration

1. Carrier tape size (unit:mm)



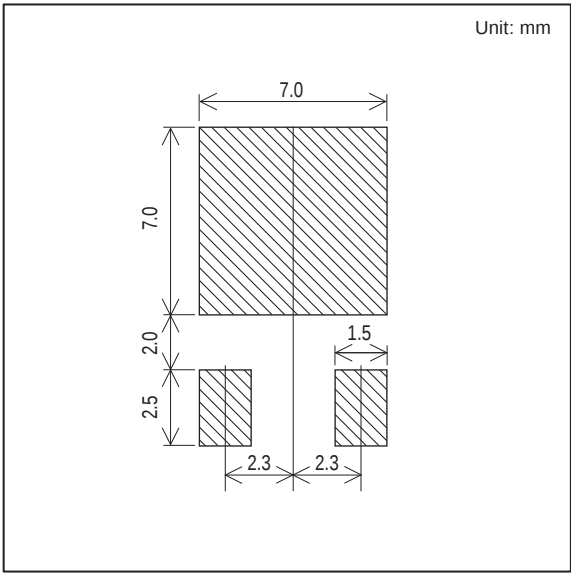
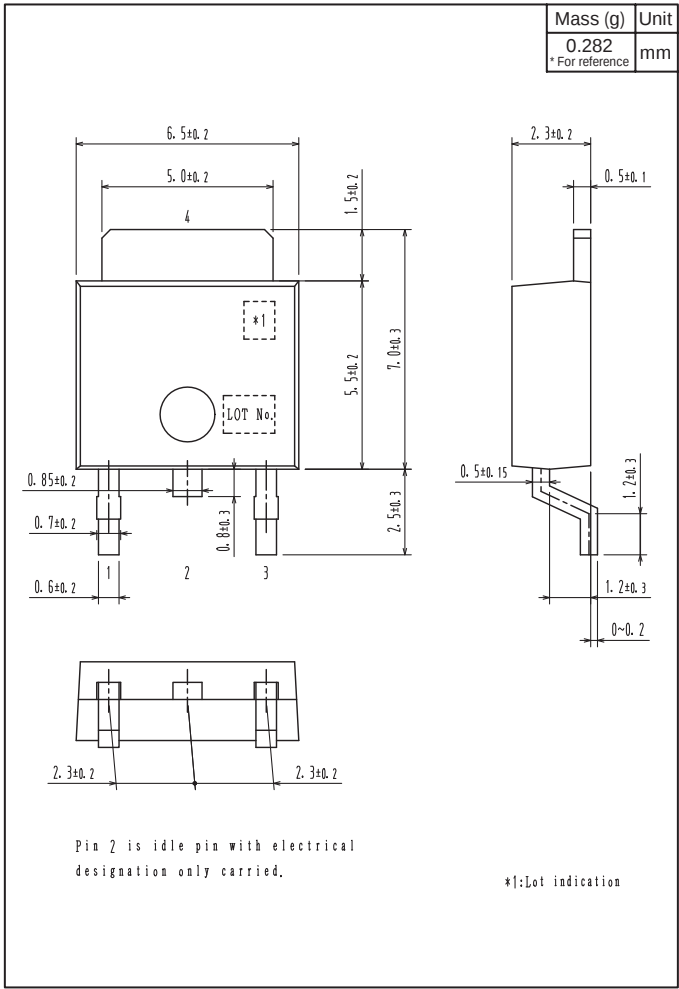
2. Device placement direction



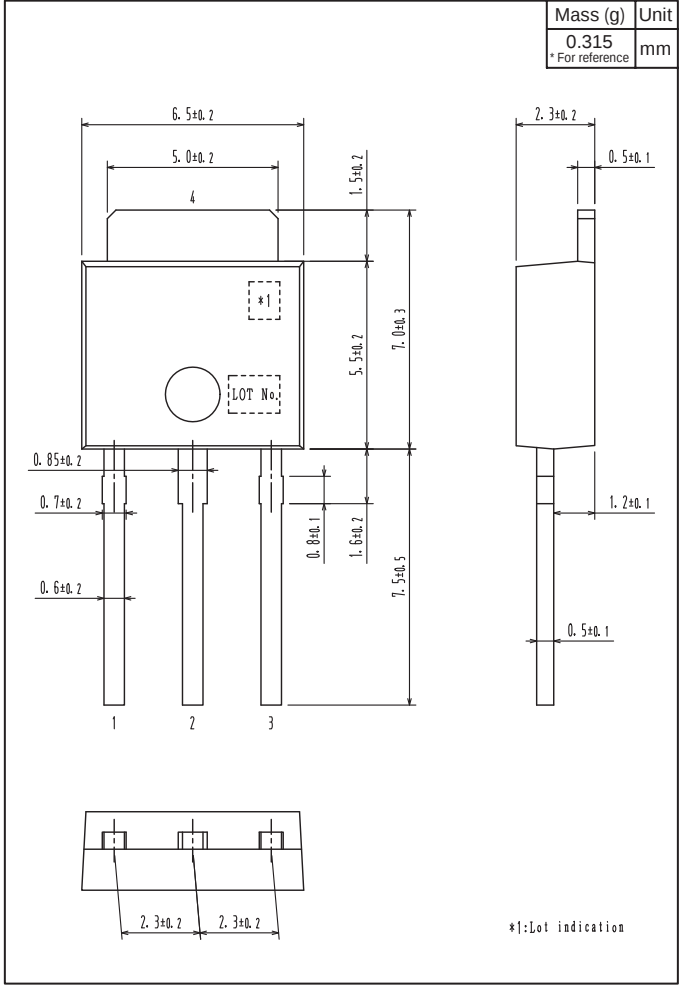
Those with one electrode terminal on the feed hole side.....TL

Outline Drawing
SFT1202-TL-E

Land Pattern Example



Outline Drawing
SFT1202-E



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