



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

SFT1431 — N-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

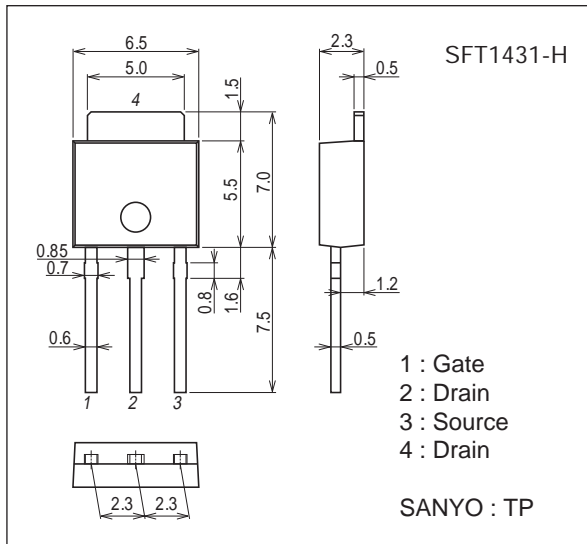
- Motor drive application
- 4V drive
- Low ON-resistance
- Protection diode in

Specifications

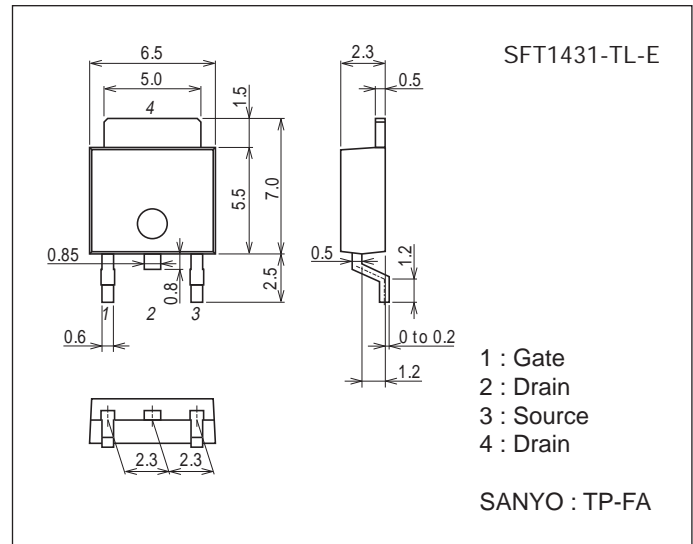
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		35	V
Gate-to-Source Voltage	VGSS		±20	V
Drain Current (DC)	ID		11	A
Drain Current (PW≤10μs)	IDP	PW≤10μs, duty cycle≤1%	44	A
Allowable Power Dissipation	PD		1.0	W
		Tc=25°C	15	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Package Dimensions unit : mm (typ)
7518-004



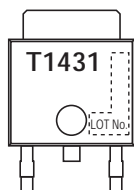
Package Dimensions unit : mm (typ)
7003-004



Product & Package Information

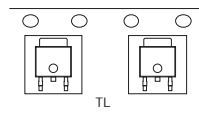
- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

Marking
(TP, TP-FA)

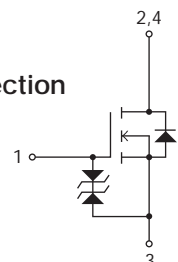


- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252
- Minimum Packing Quantity : 700 pcs./reel

Packing Type (TP-FA) : TL



Electrical Connection

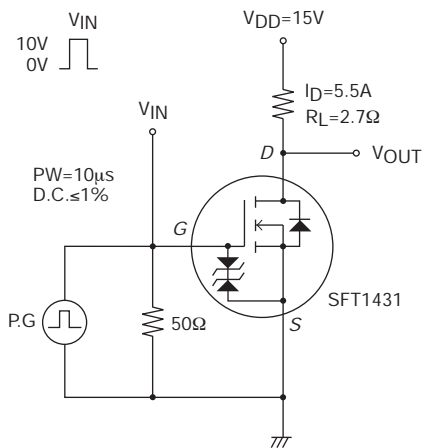


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Electrical Characteristics at Ta=25°C

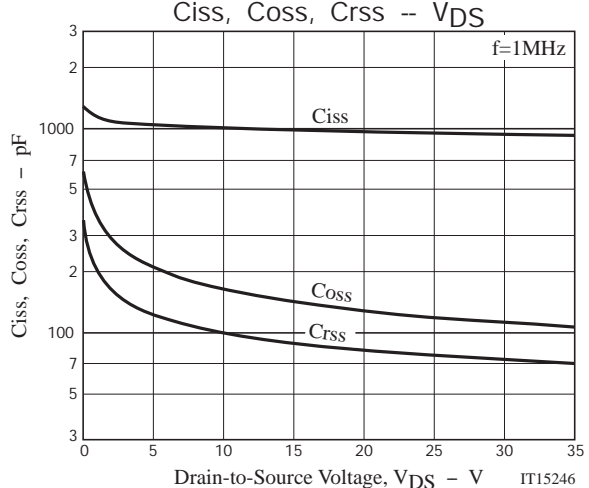
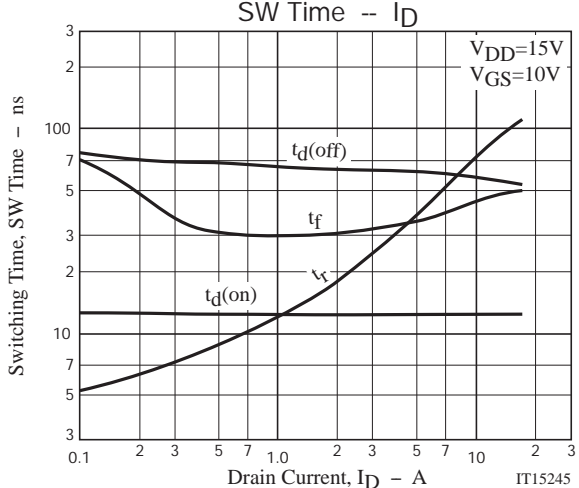
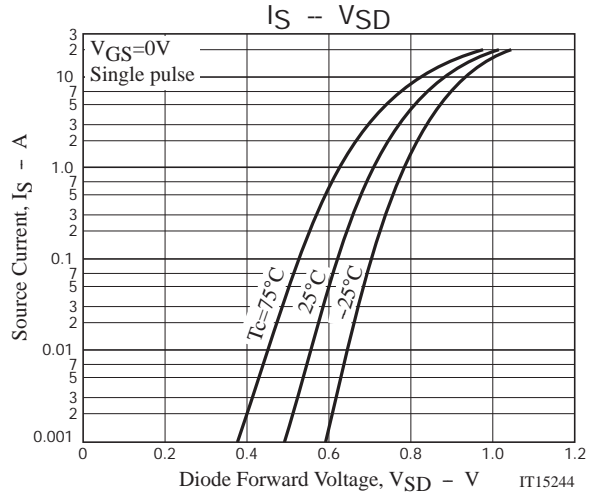
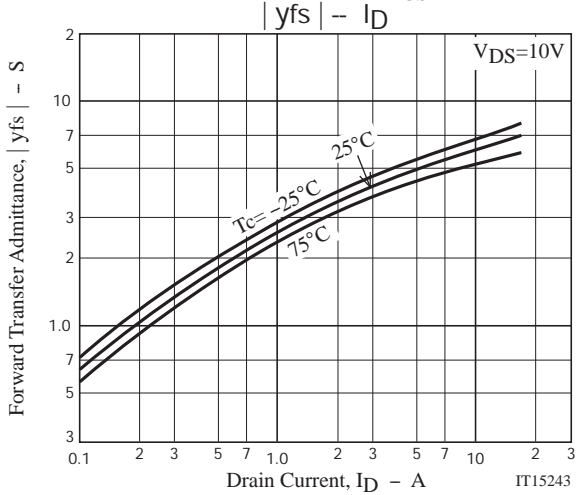
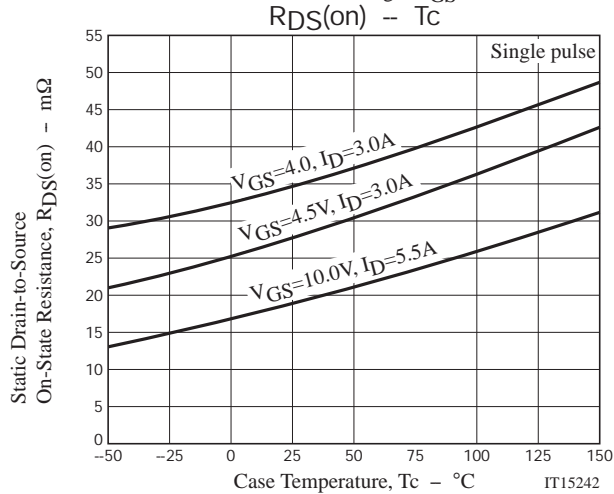
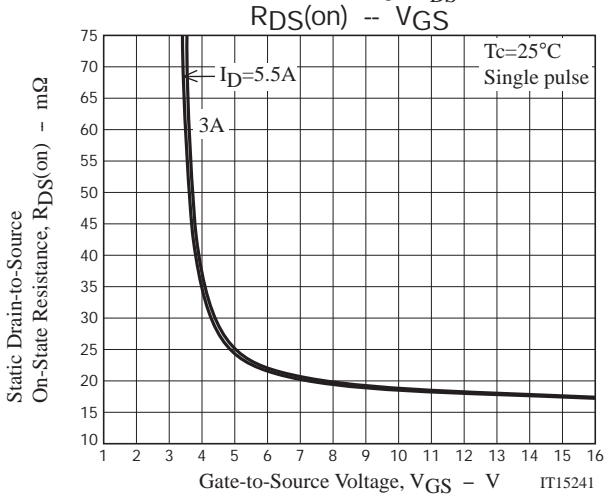
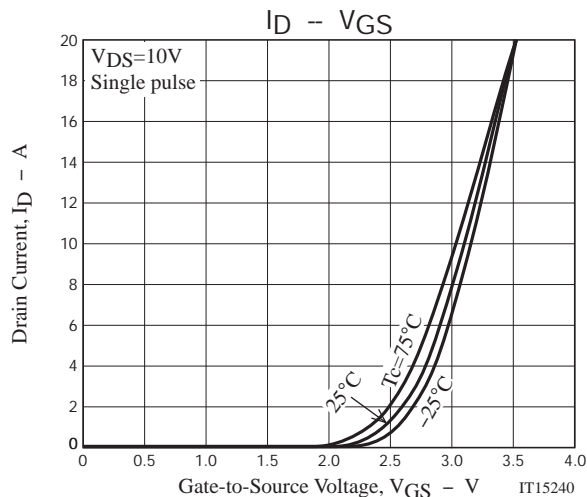
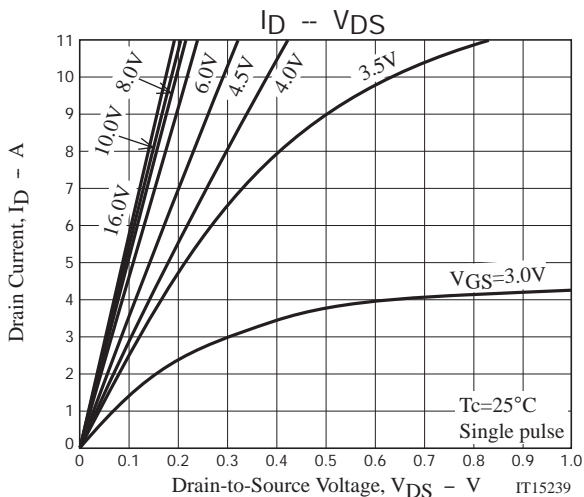
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =1mA, V _{GS} =0V	35			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =35V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	1.2		2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =5.5A		5		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =5.5A, V _{GS} =10V		19	25	mΩ
	R _{DS(on)2}	I _D =3A, V _{GS} =4.5V		28	39.5	mΩ
	R _{DS(on)3}	I _D =3A, V _{GS} =4V		35	49	mΩ
Input Capacitance	C _{iss}	V _{DS} =20V, f=1MHz		960		pF
Output Capacitance	C _{oss}			130		pF
Reverse Transfer Capacitance	C _{rss}			84		pF
Turn-ON Delay Time	t _{d(on)}		See specified Test Circuit.		12	
Rise Time	t _r			40		ns
Turn-OFF Delay Time	t _{d(off)}			60		ns
Fall Time	t _f			36		ns
Total Gate Charge	Q _g	V _{DS} =20V, V _{GS} =10V, I _D =11A			17.3	
Gate-to-Source Charge	Q _{gs}			3.2		nC
Gate-to-Drain "Miller" Charge	Q _{gd}			3.6		nC
Diode Forward Voltage	V _{SD}	I _S =11A, V _{GS} =0V		0.88	1.2	V

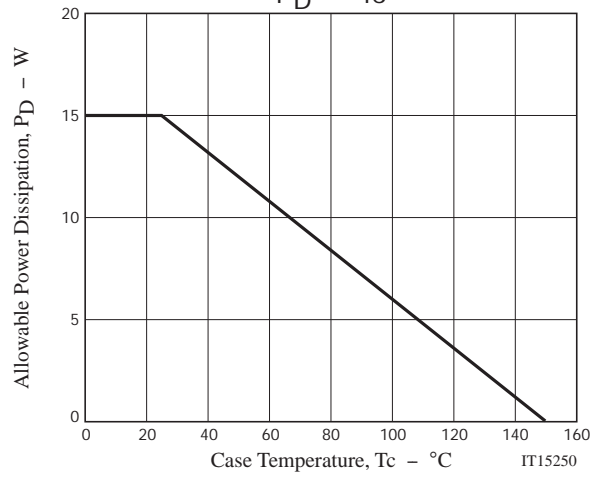
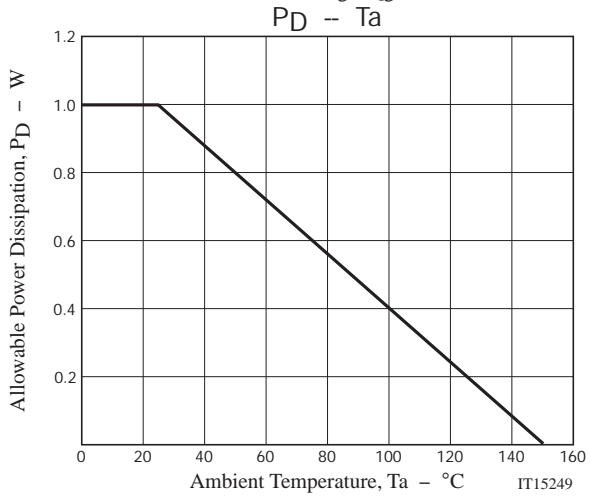
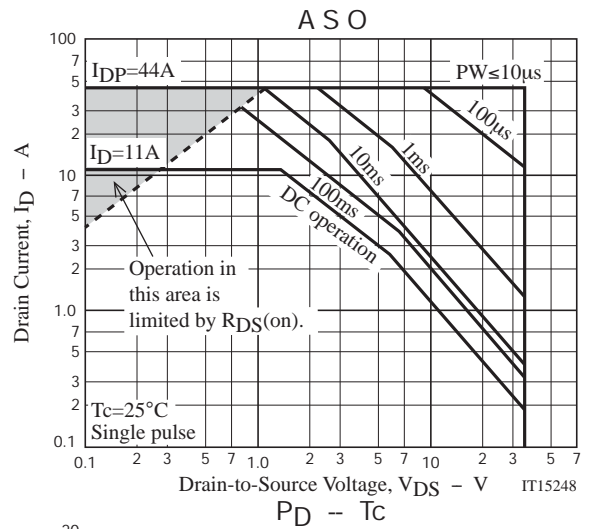
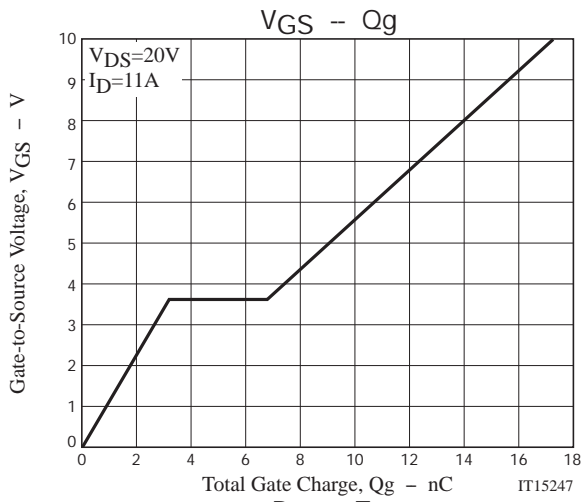
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
SFT1431-H	TP	500pcs./bag	Pb Free
SFT1431-TL-E	TP-FA	700pcs./reel	





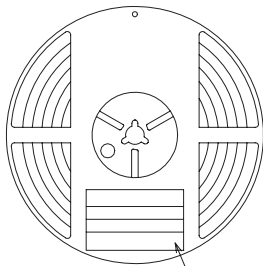
Taping Specification

SFT1431-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, 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.

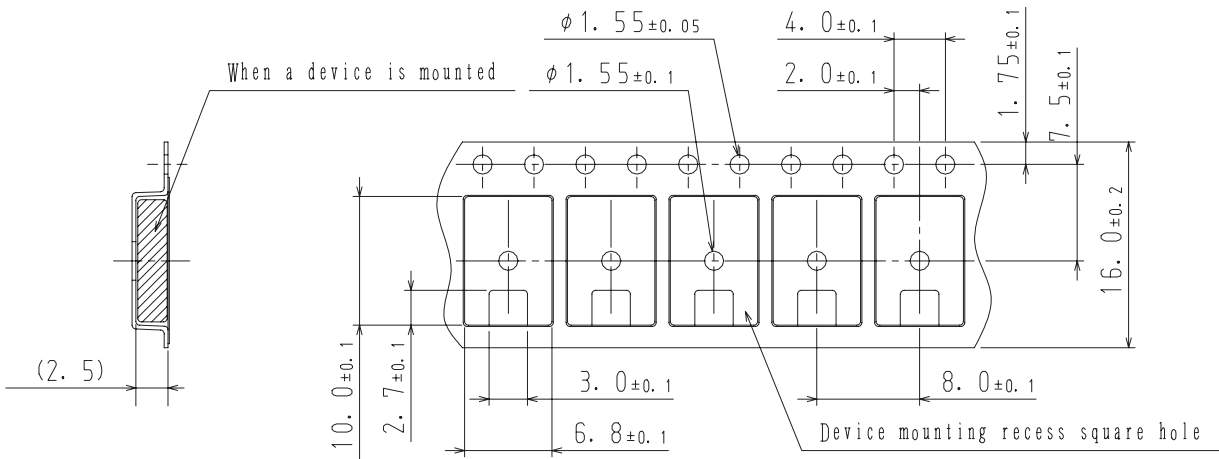
Type No. →
LOT No. →
Quantity →
Origin →

NOTE (1)
The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

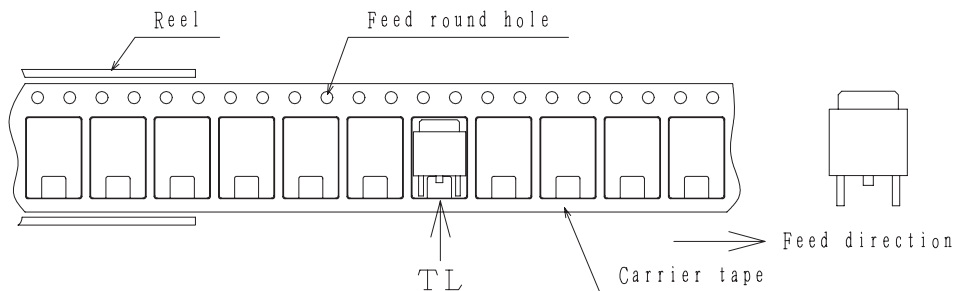
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

Taping configuration

1. Carrier tape size (unit:mm)



2. Device placement direction

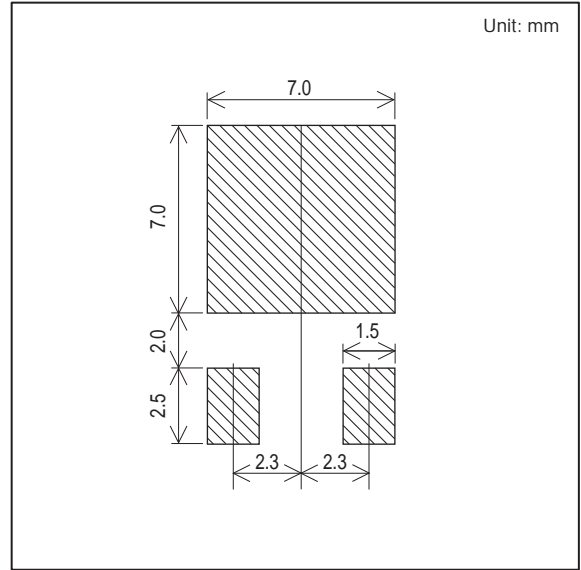
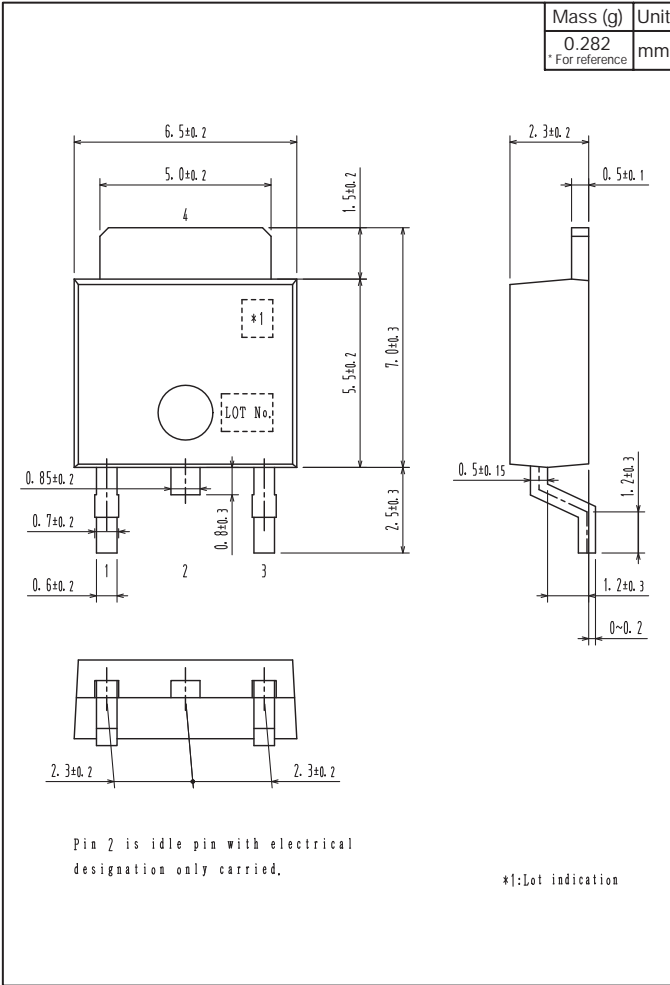


Those with one electrode terminal on the feed hole side.....TL

SFT1431

Outline Drawing SFT1431-TL-E

Land Pattern Example



SFT1431

Bag Packing Specification

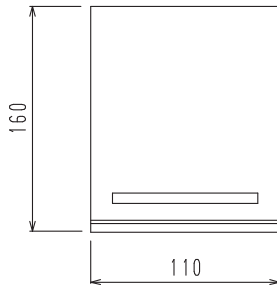
SFT1431-H

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

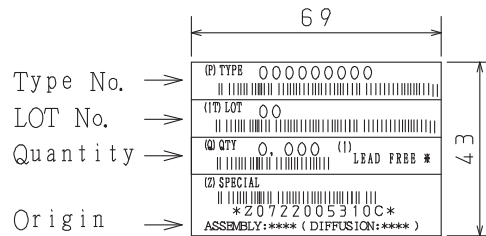
2. Bag dimensions

(unit:mm)



3. Bag label, Inner box label

(unit:mm)



4. Outer box label

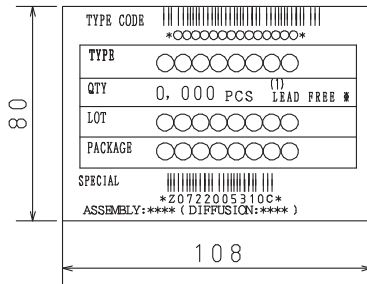
(unit:mm)

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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.

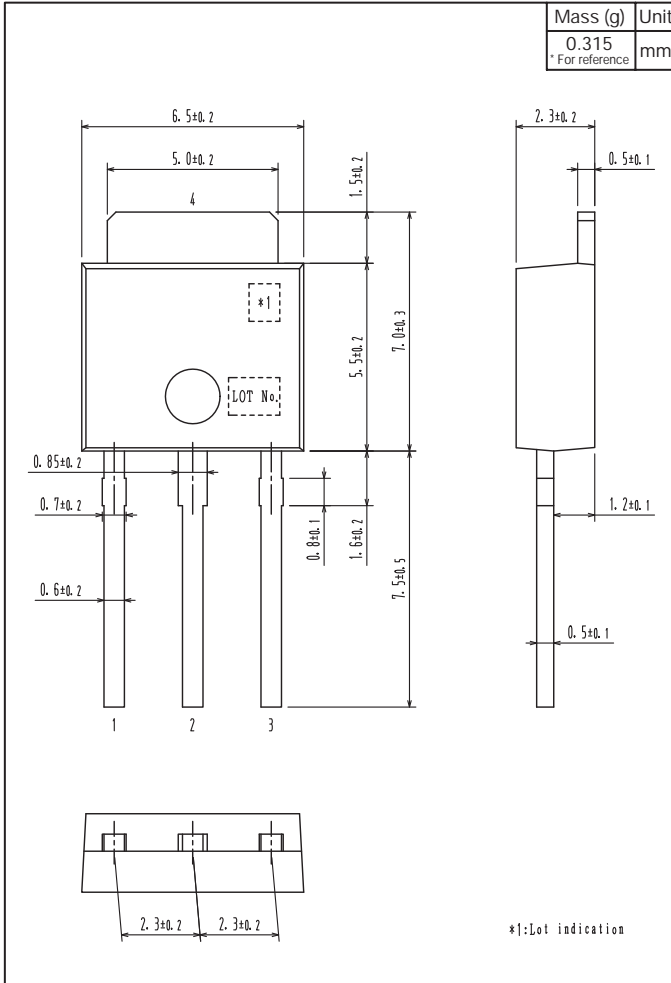
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3



SFT1431

Outline Drawing

SFT1431-H



Note on usage : Since the SFT1431 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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