



SFT1431

N-Channel Power MOSFET 35V, 11A, 25mΩ, Single TP/TP-FA

ON Semiconductor®

<http://onsemi.com>

Features

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

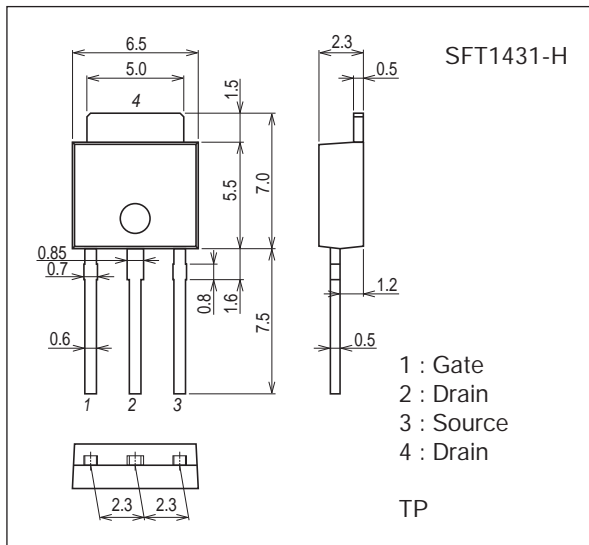
Specifications

Absolute Maximum Ratings at Ta=25°C

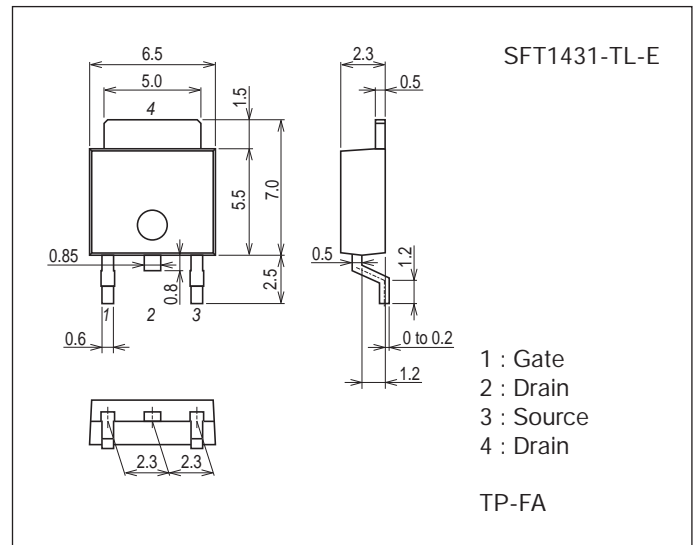
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		35	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		11	A
Drain Current (PW≤10μs)	I _{DP}	PW≤10μs, duty cycle≤1%	44	A
Allowable Power Dissipation	P _D		1.0	W
		T _C =25°C	15	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

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) 7518-004



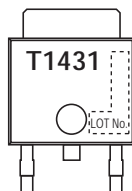
Package Dimensions unit : mm (typ) 7003-004



Product & Package Information

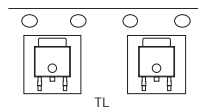
- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

Marking (TP, TP-FA)

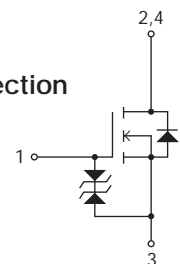


- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252
- Minimum Packing Quantity : 700 pcs./reel

Packing Type (TP-FA) : TL



Electrical Connection

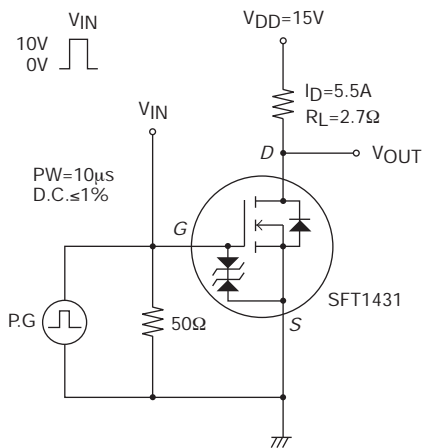


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Electrical Characteristics at Ta=25°C

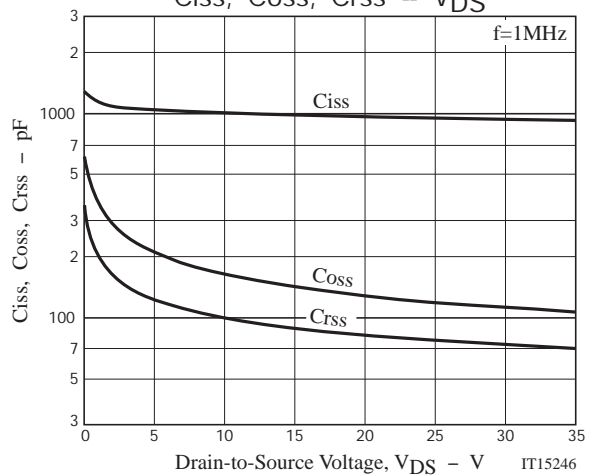
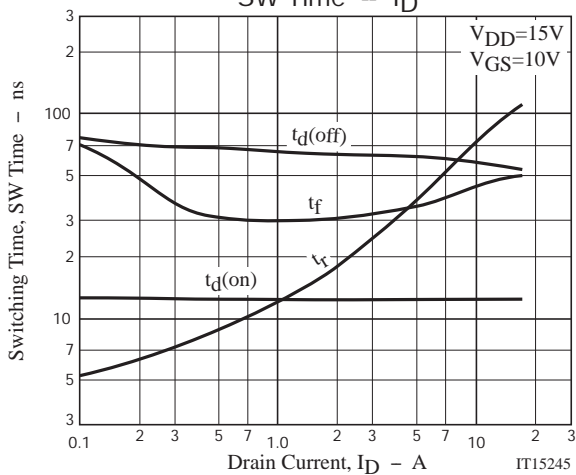
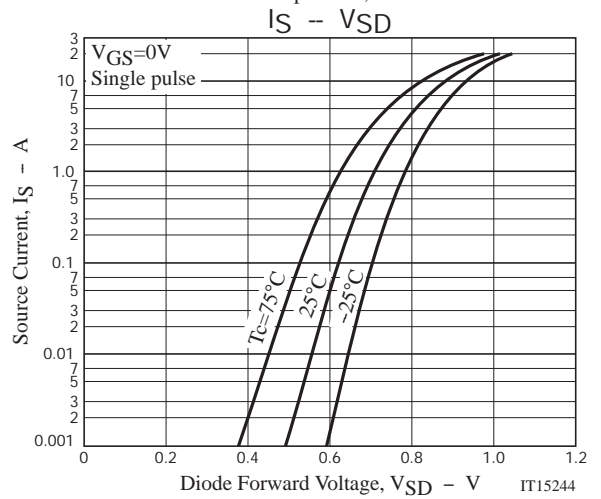
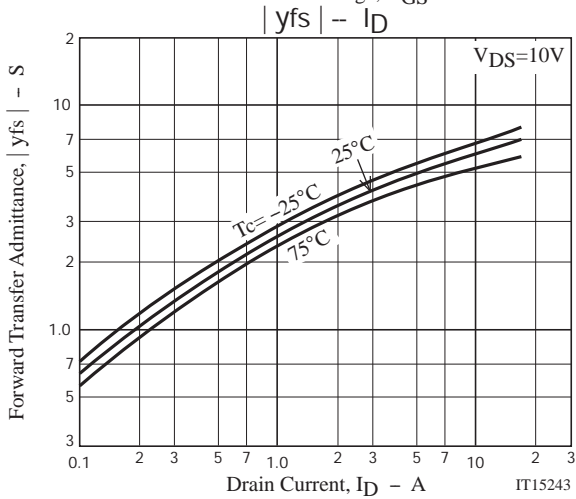
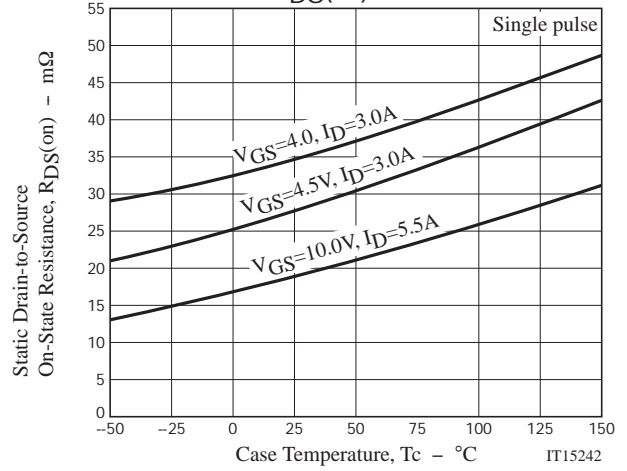
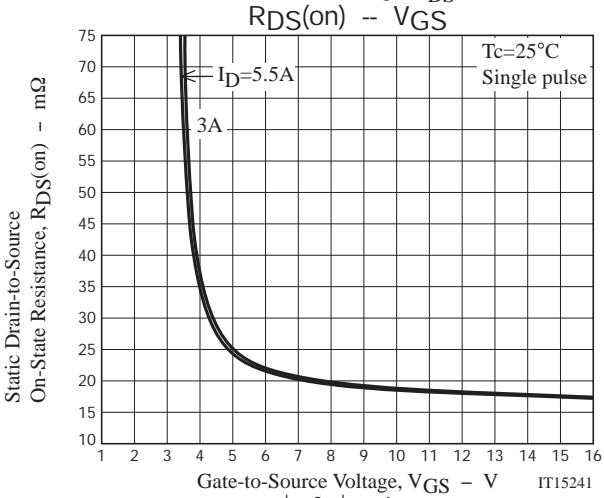
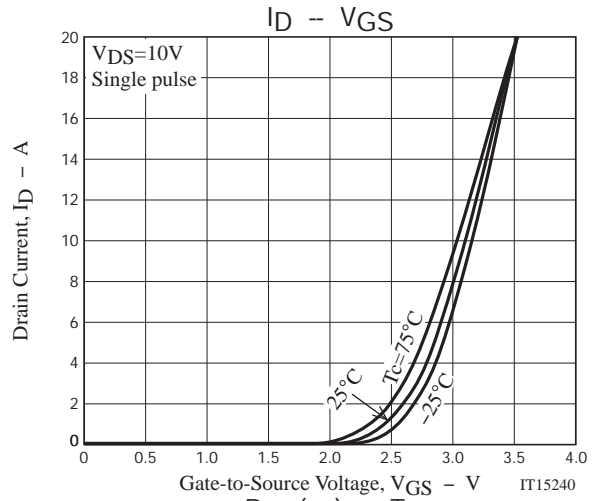
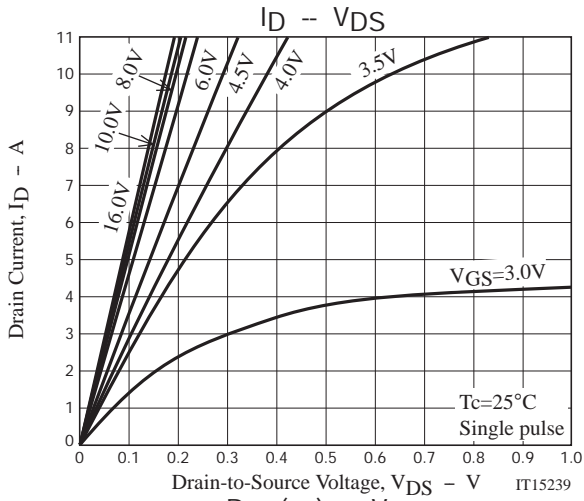
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I _D =1mA, V _{GS} =0V	35			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =35V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	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

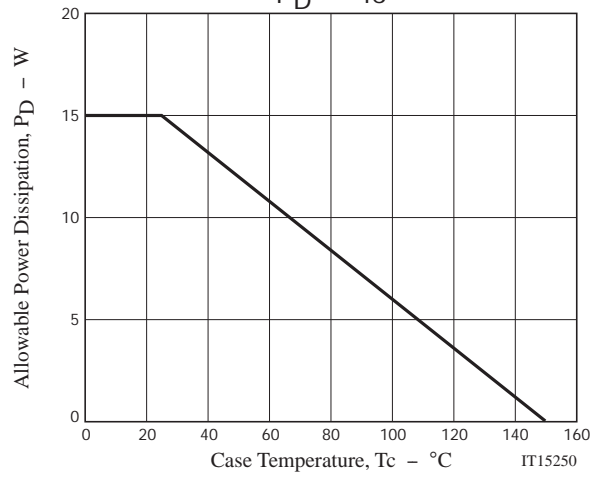
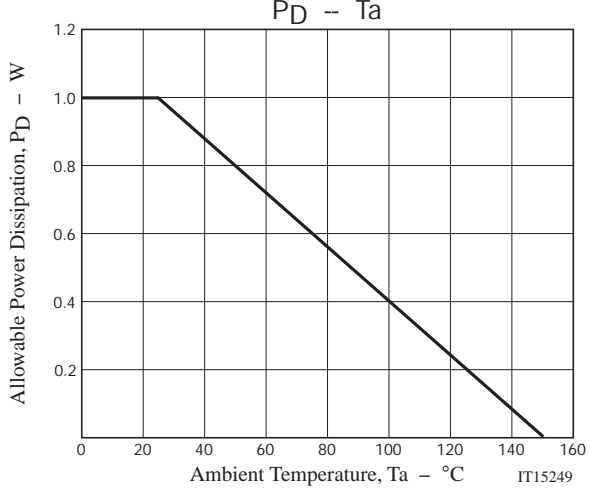
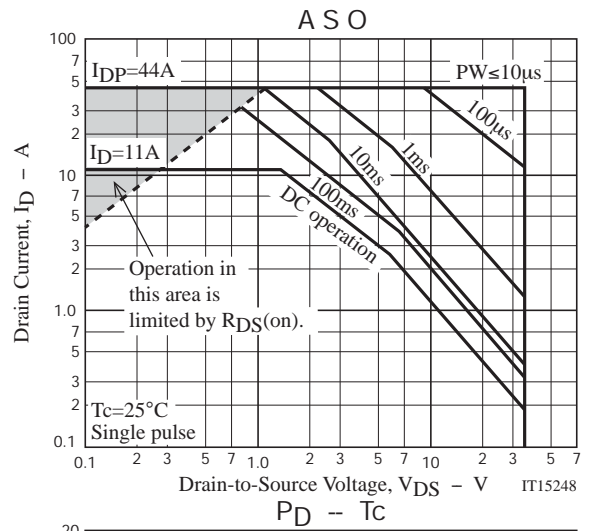
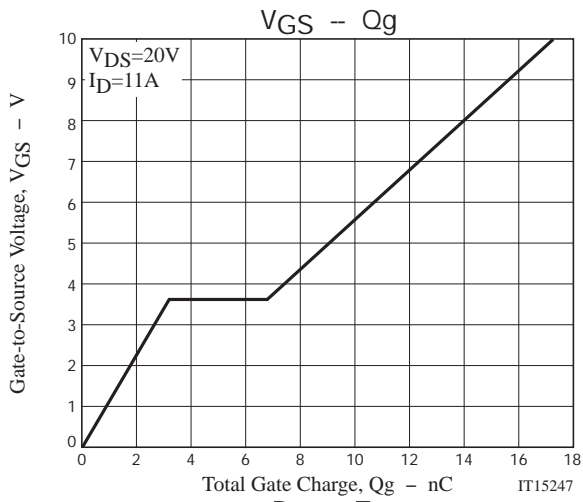
Switching Time Test Circuit



Ordering Information

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





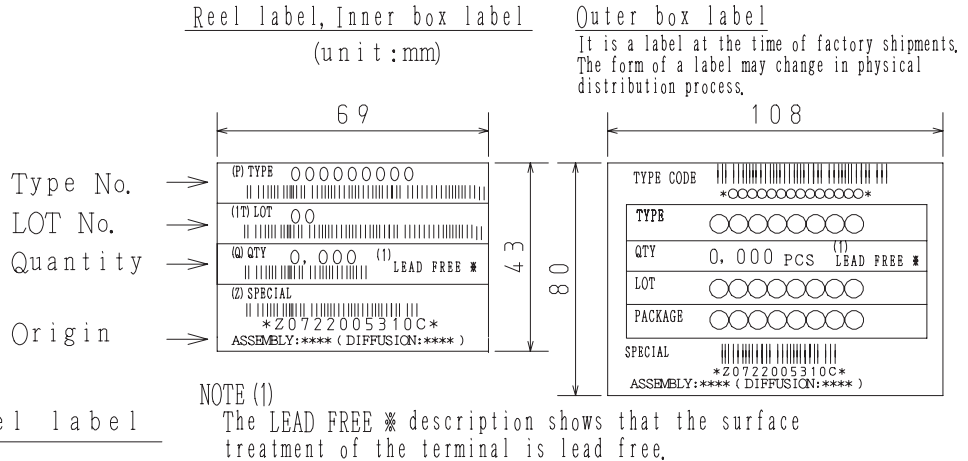
Taping Specification

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



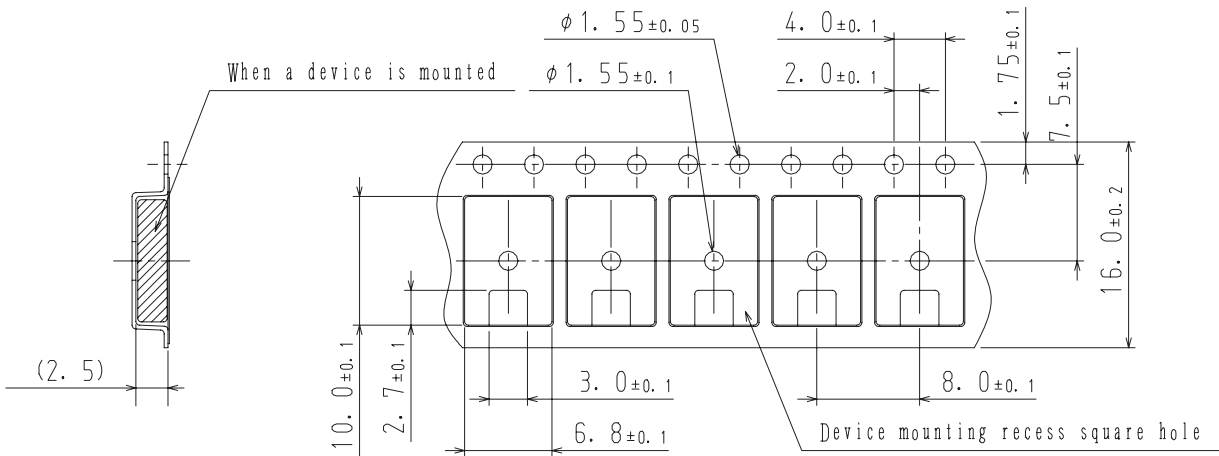
NOTE (1)

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

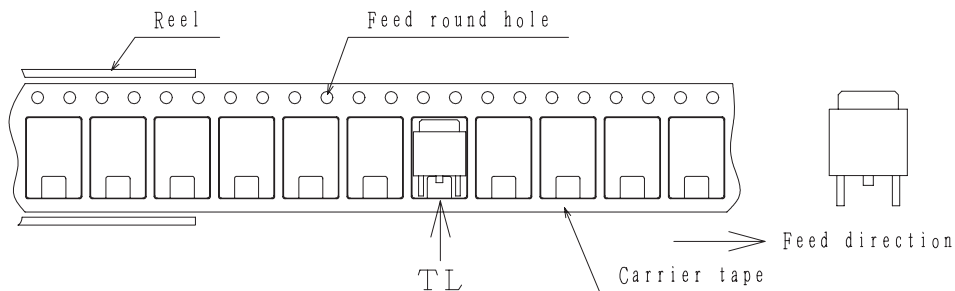
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

Taping configuration

1. Carrier tape size (unit:mm)



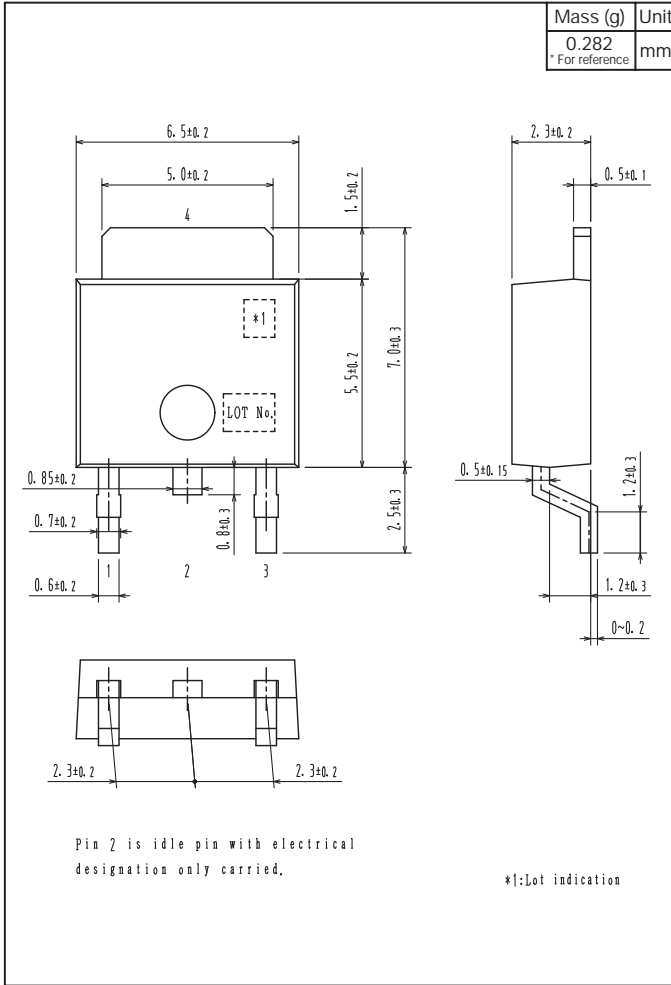
2. Device placement direction



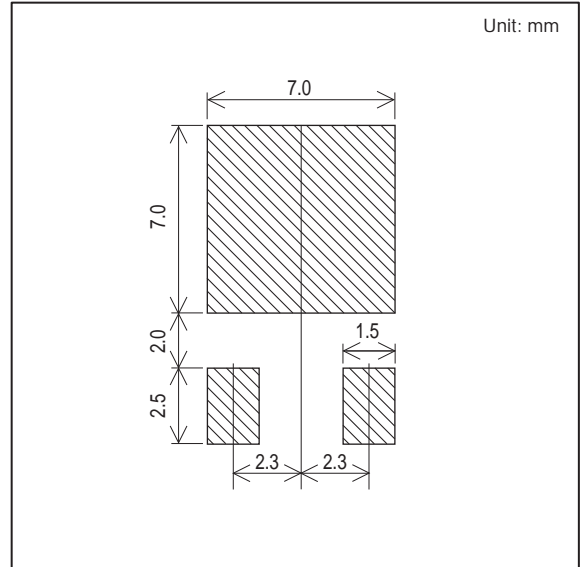
Those with one electrode terminal on the feed hole side.....TL

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Outline Drawing SFT1431-TL-E



Land Pattern Example



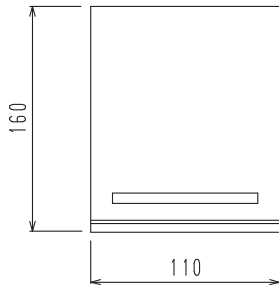
Bag Packing Specification

SFT1431-H

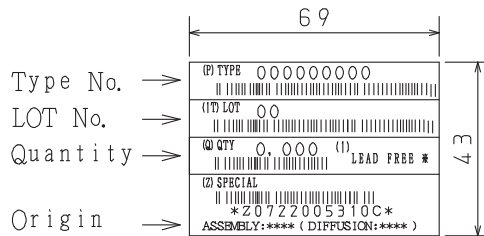
1. Packing Format

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)



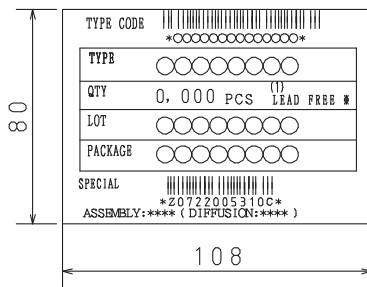
4. Outer box label
(unit:mm)

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.

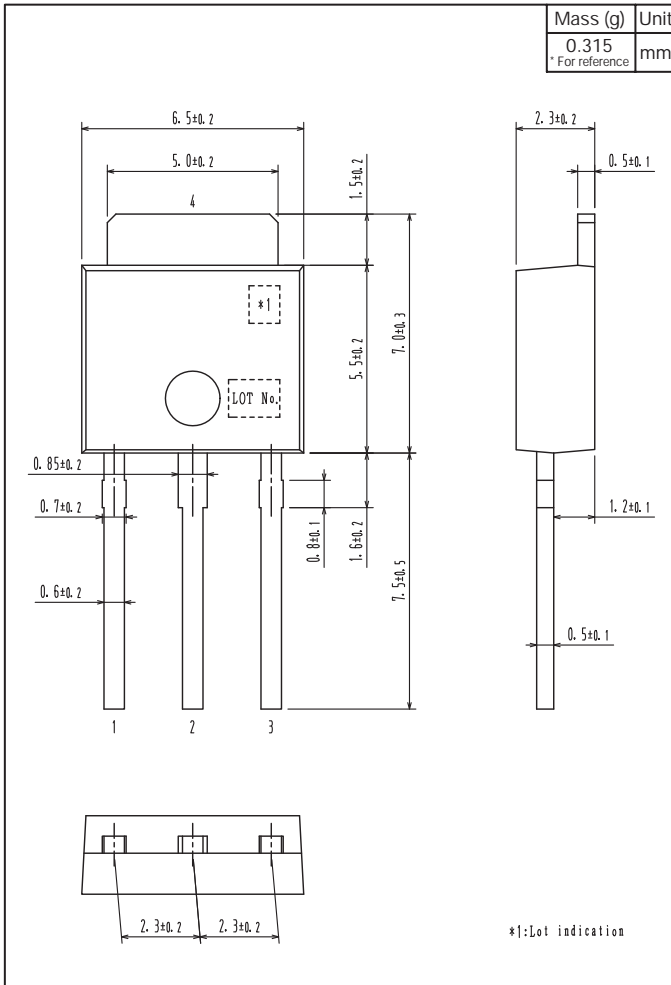
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3



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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