



SFT1450 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

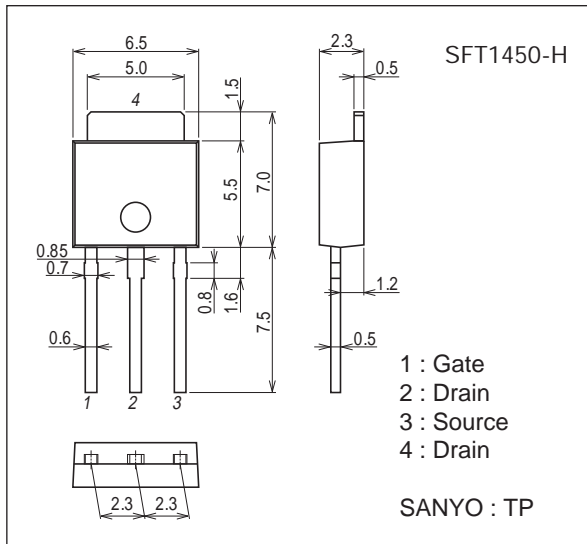
- ON-resistance $R_{DS(on)} = 21\text{m}\Omega$ (typ.)
- Input Capacitance $C_{iss} = 715\text{pF}$ (typ.)
- 4.5V drive
- Halogen free compliance
- Protection diode in

Specifications

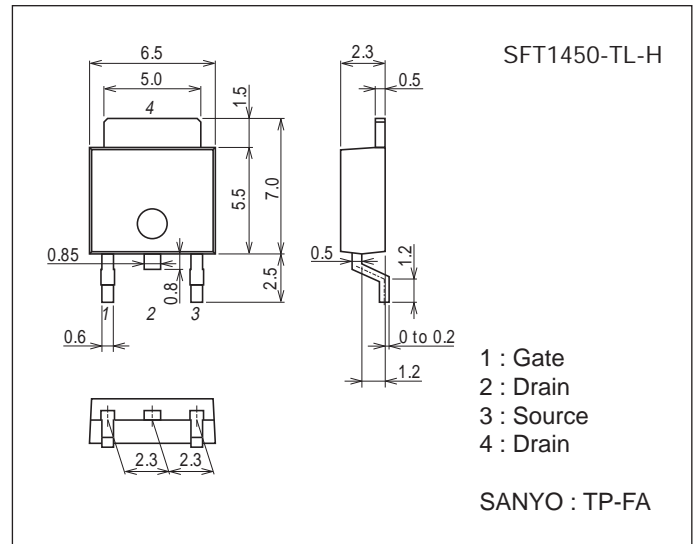
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		40	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		21	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	84	A
Allowable Power Dissipation	P_D		1	W
		$T_c = 25^\circ\text{C}$	23	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Package Dimensions unit : mm (typ)
7518-004



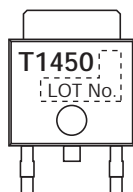
Package Dimensions unit : mm (typ)
7003-004



Product & Package Information

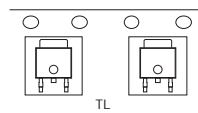
- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

Marking
(TP, TP-FA)

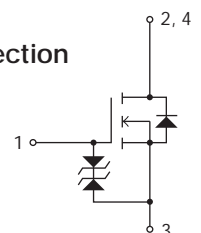


- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252
- Minimum Packing Quantity : 700 pcs./reel

Packing Type (TP-FA) : TL



Electrical Connection

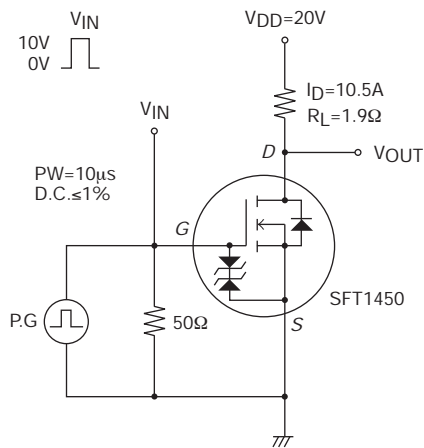


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Electrical Characteristics at $T_a=25^\circ\text{C}$

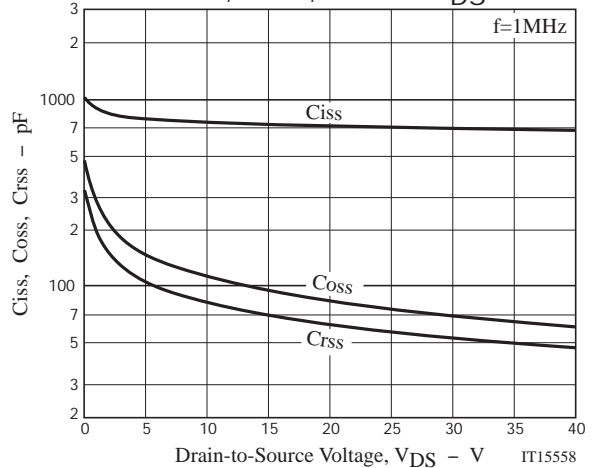
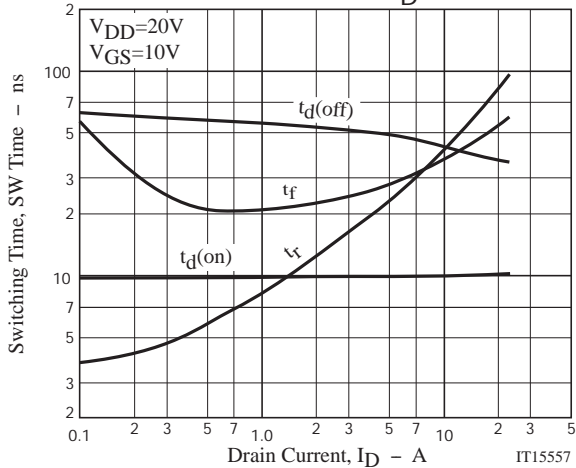
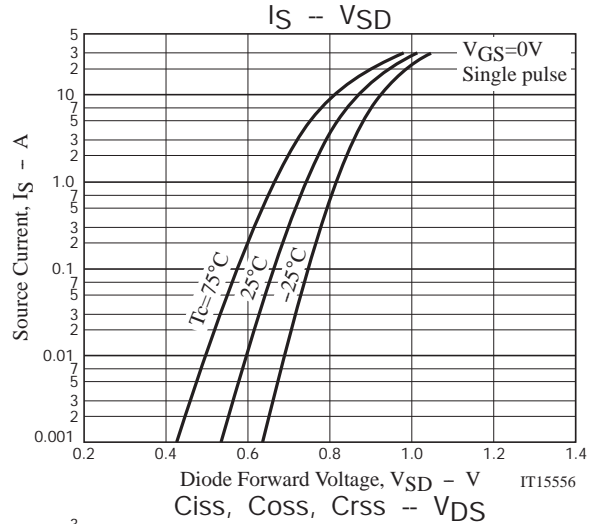
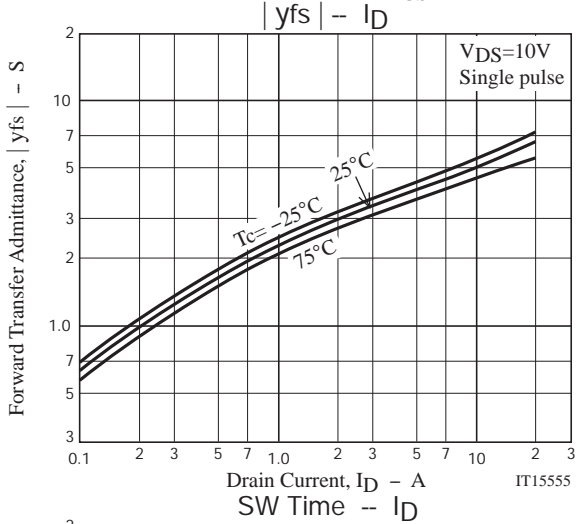
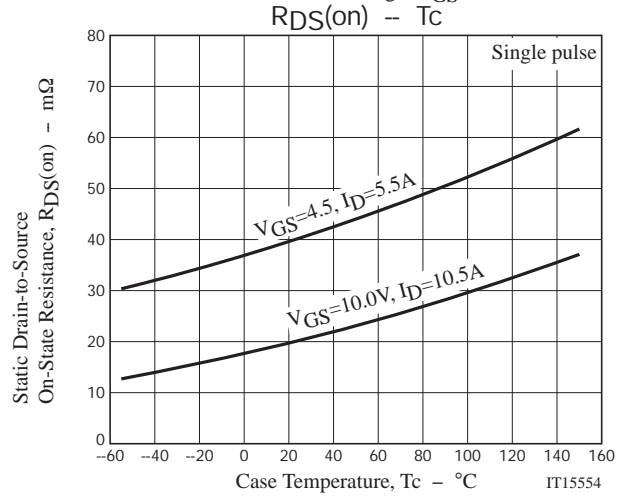
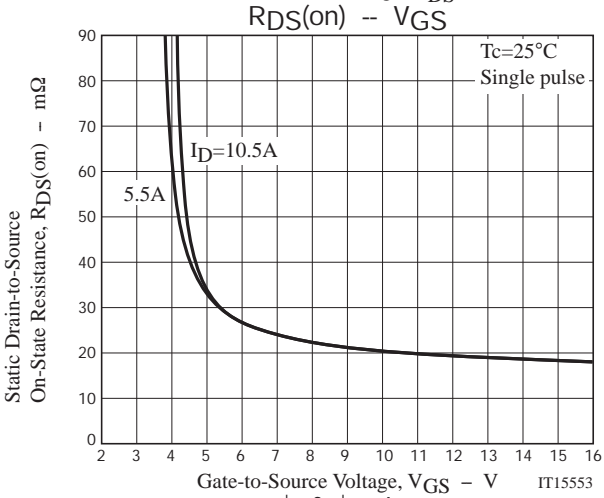
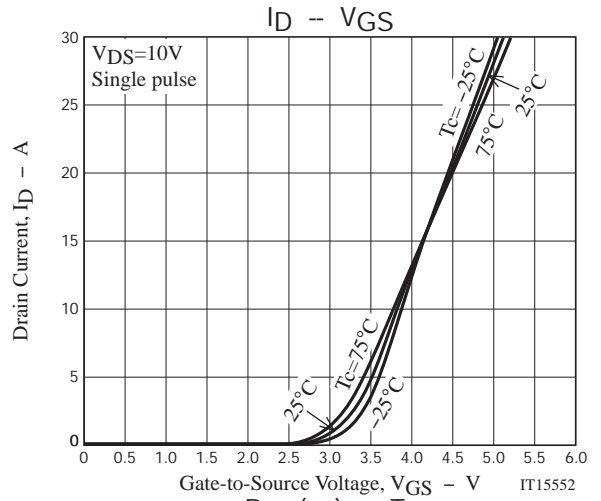
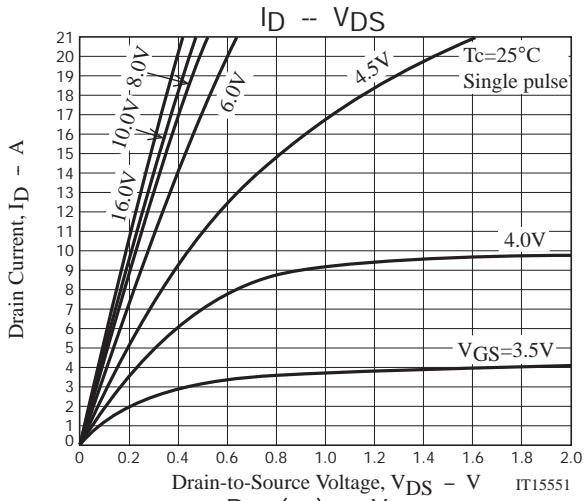
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}, V_{GS}=0\text{V}$	40			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40\text{V}, V_{GS}=0\text{V}$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}, V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	1.7		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}, I_D=10.5\text{A}$		5.4		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=10.5\text{A}, V_{GS}=10\text{V}$		21	28	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=5.5\text{A}, V_{GS}=4.5\text{V}$		40	56	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}, f=1\text{MHz}$		715		pF
Output Capacitance	C_{oss}				85	pF
Reverse Transfer Capacitance	C_{rss}				65	pF
Turn-ON Delay Time	$t_{d(on)}$			10		ns
Rise Time	t_r	See specified Test Circuit.		42		ns
Turn-OFF Delay Time	$t_{d(off)}$			42		ns
Fall Time	t_f			38		ns
Total Gate Charge	Q_g	$V_{DS}=20\text{V}, V_{GS}=10\text{V}, I_D=21\text{A}$		14.4		nC
Gate-to-Source Charge	Q_{gs}			3.8		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			3.1		nC
Diode Forward Voltage	V_{SD}		$I_S=21\text{A}, V_{GS}=0\text{V}$		0.96	1.2

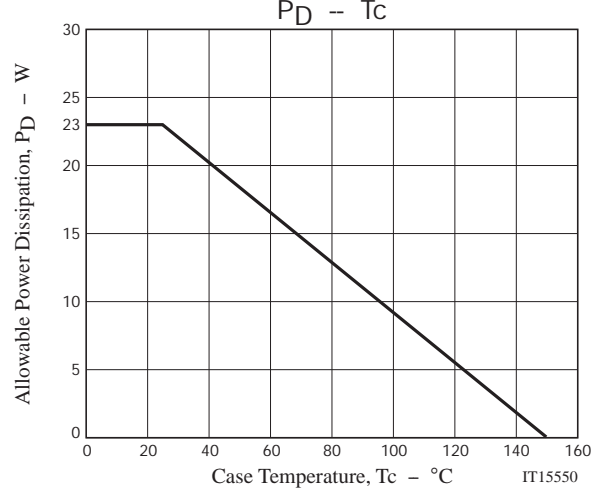
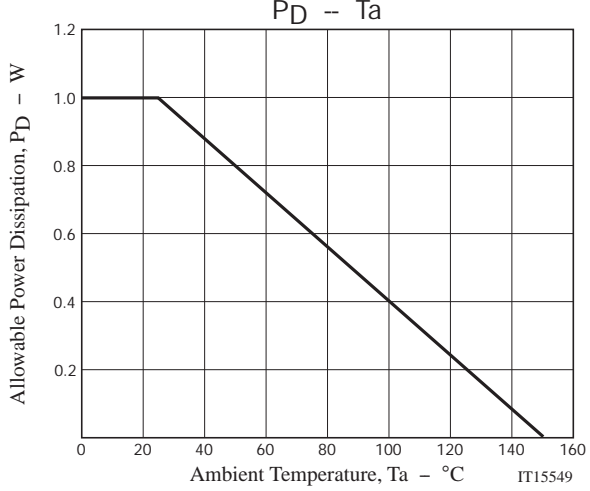
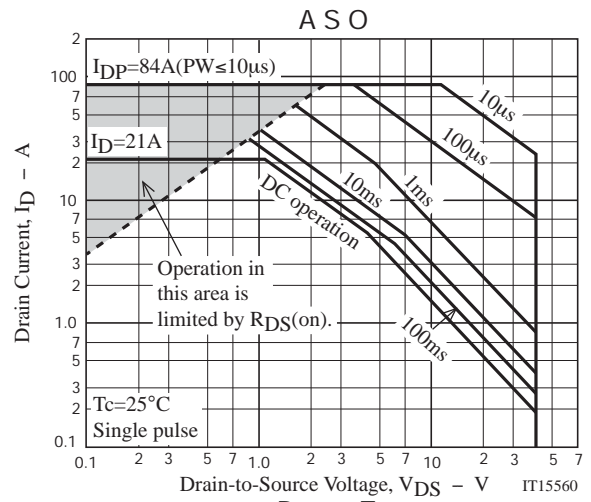
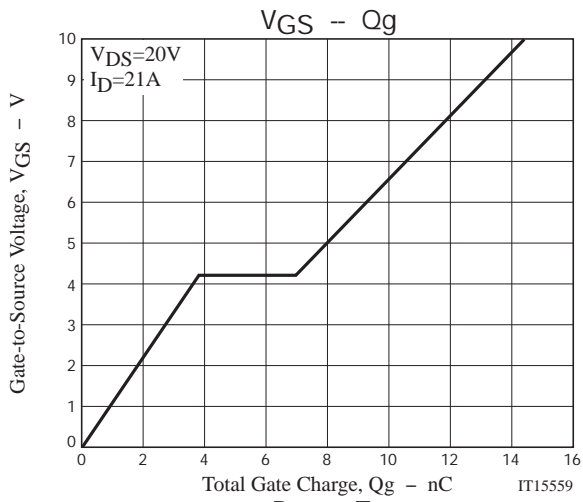
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
SFT1450-H	TP	500pcs./bag	Pb Free and Halogen Free
SFT1450-TL-H	TP-FA	700pcs./reel	





Taping Specification

SFT1450-TL-H

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.

Reel label details:
 Type No. → (P) TYPE 00000000
 LOT No. → (1) LOT 00
 Quantity → (Q) QTY 0,000 (1) LEAD FREE *
 Origin → (Z) SPECIAL *Z0722005310C* ASSEMBLY:**** (DIFFUSION:****)

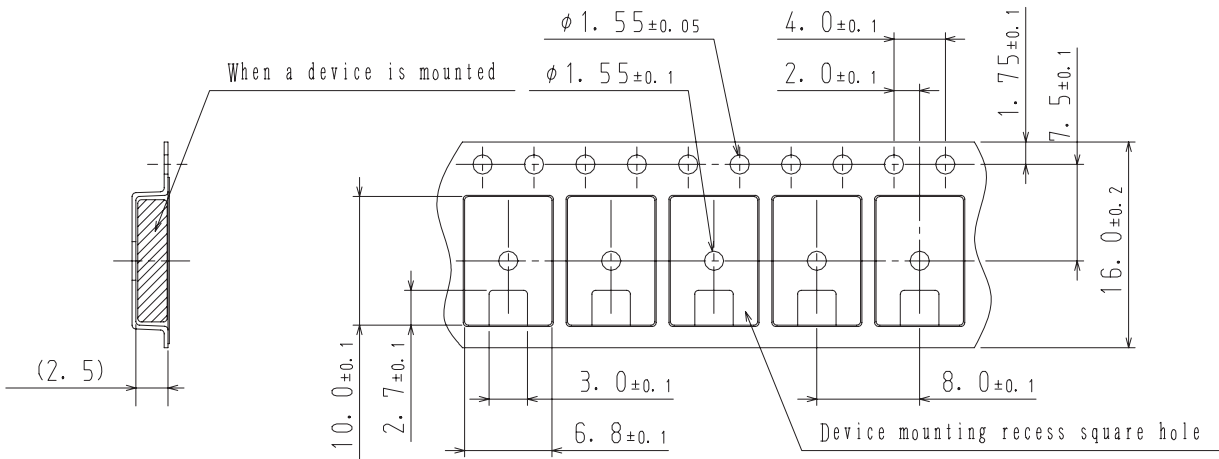
Inner box label details:
 TYPE CODE
 TYPE ○○○○○○
 QTY 0,000 PCS (1) LEAD FREE *
 LOT ○○○○○○
 PACKAGE ○○○○○○
 SPECIAL *Z0722005310C* ASSEMBLY:**** (DIFFUSION:****)

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

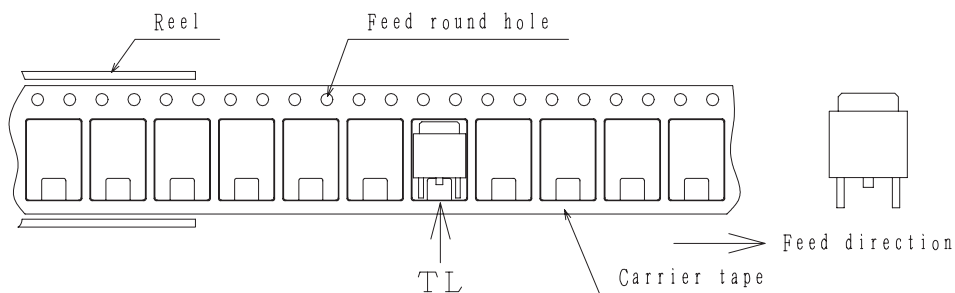
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

Taping configuration

1. Carrier tape size (unit:mm)



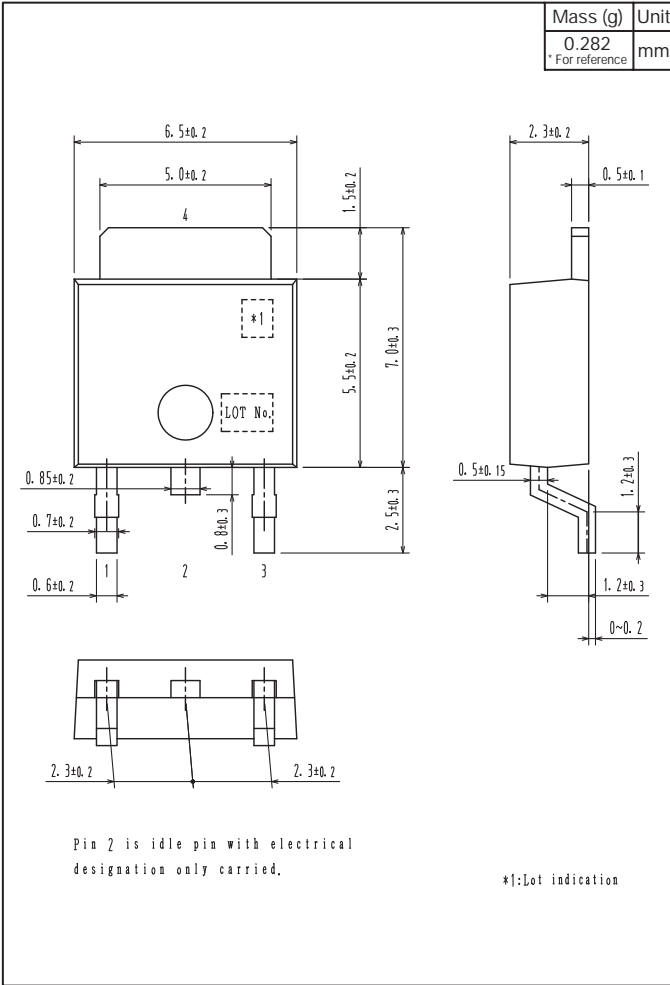
2. Device placement direction



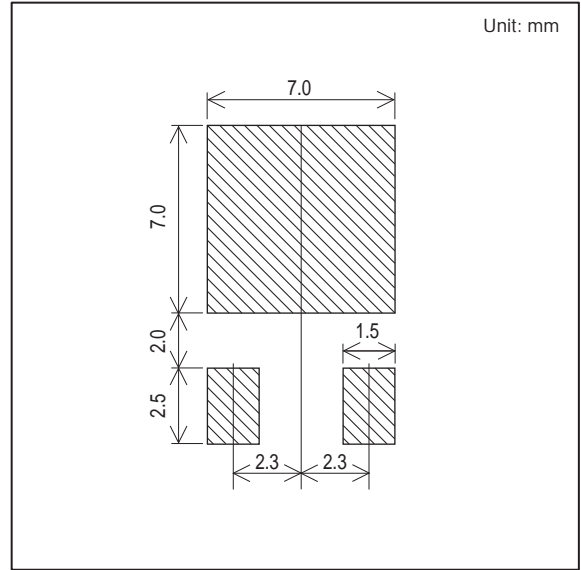
Those with one electrode terminal on the feed hole side.....TL

SFT1450

Outline Drawing SFT1450-TL-H



Land Pattern Example



SFT1450

Bag Packing Specification

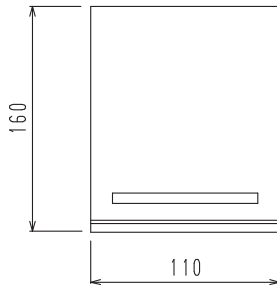
SFT1450-H

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

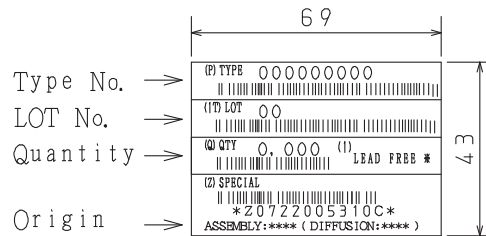
2. Bag dimensions

(unit:mm)



3. Bag label, Inner box label

(unit:mm)



4. Outer box label

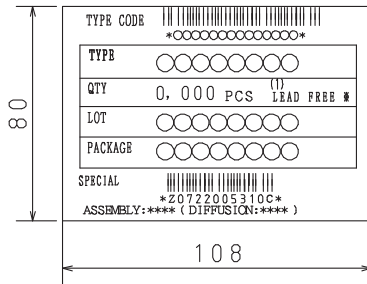
(unit:mm)

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.

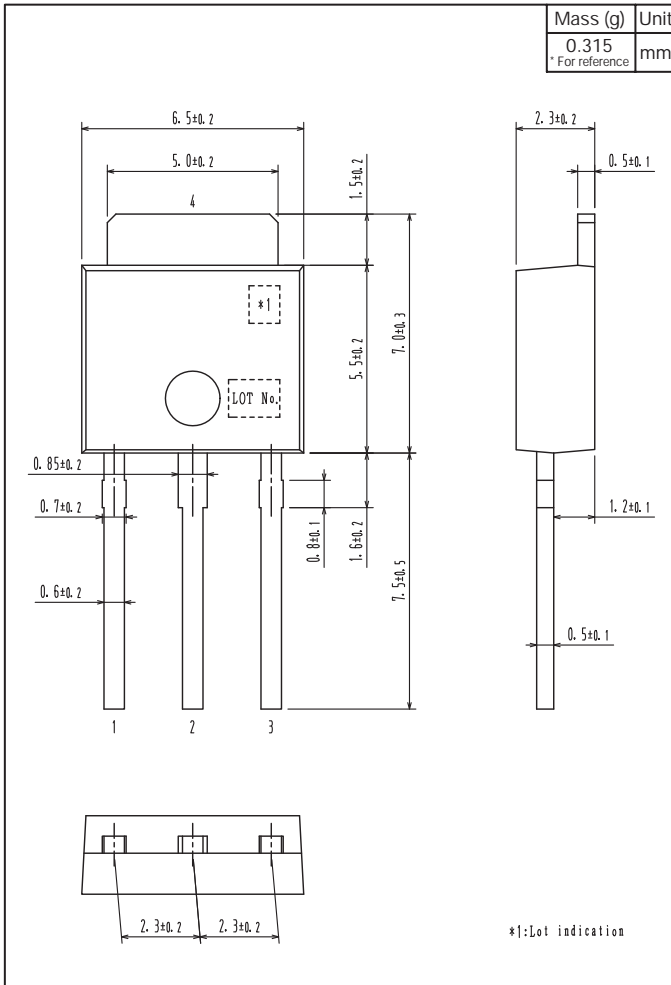
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3



SFT1450

Outline Drawing

SFT1450-H



Note on usage : Since the SFT1450 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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