



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## SFT1445 — N-Channel Silicon MOSFET General-Purpose Switching Device Applications

### Features

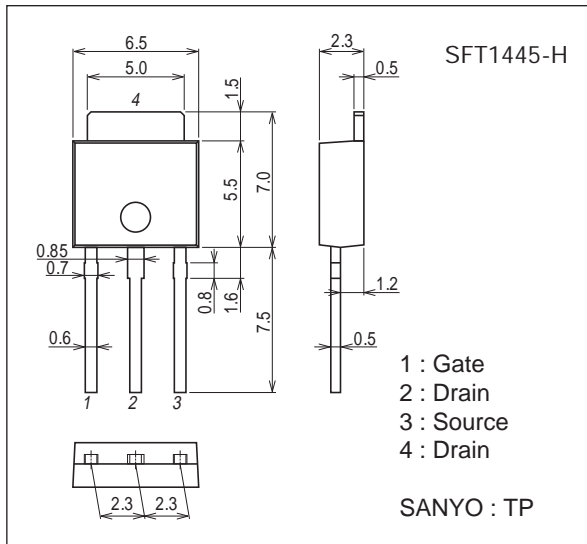
- ON-resistance  $R_{DS(on)} = 85m\Omega$ (typ.)
- Input Capacitance  $C_{iss} = 1030pF$ (typ.)
- 4V drive
- Halogen free compliance
- Protection diode in

### Specifications

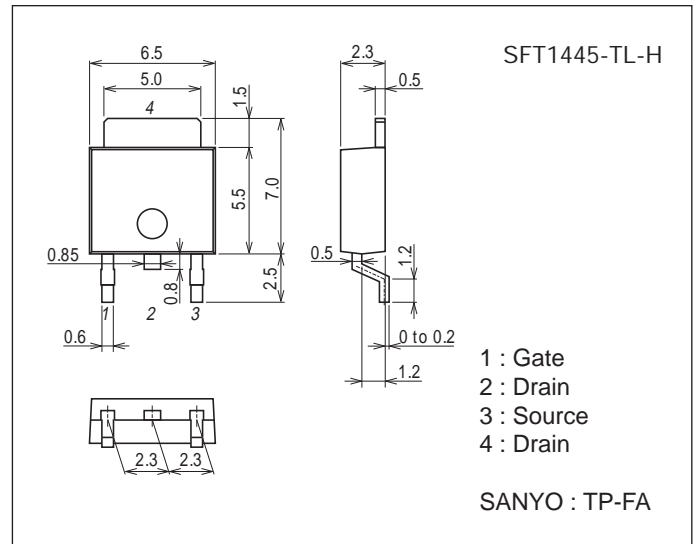
Absolute Maximum Ratings at  $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		100	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		17	A
Drain Current ( $PW \leq 10\mu s$ )	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	68	A
Allowable Power Dissipation	$P_D$		1.0	W
		$T_c = 25^\circ C$	35	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

Package Dimensions unit : mm (typ)  
7518-004



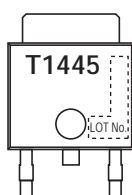
Package Dimensions unit : mm (typ)  
7003-004



### Product & Package Information

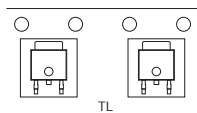
- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

Marking  
(TP, TP-FA)

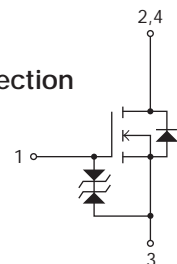


- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252
- Minimum Packing Quantity : 700 pcs./reel

Packing Type (TP-FA) : TL



Electrical Connection

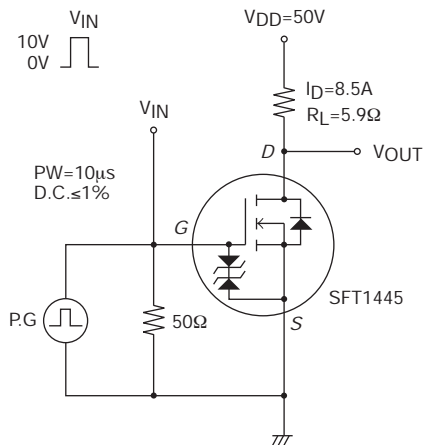


# SFT1445

## Electrical Characteristics at Ta=25°C

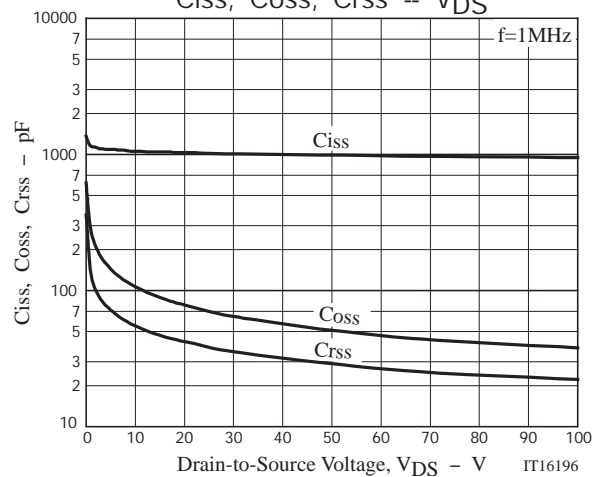
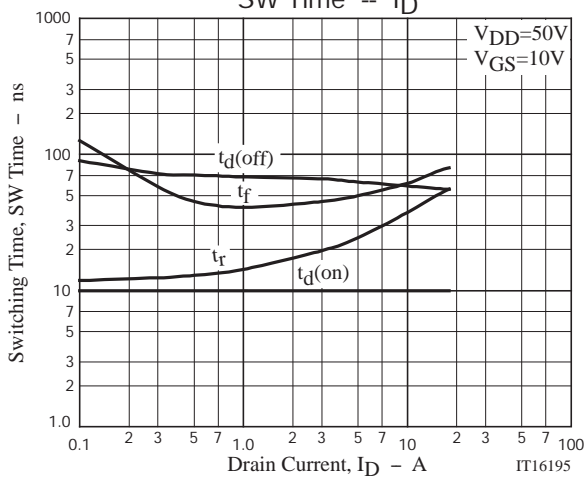
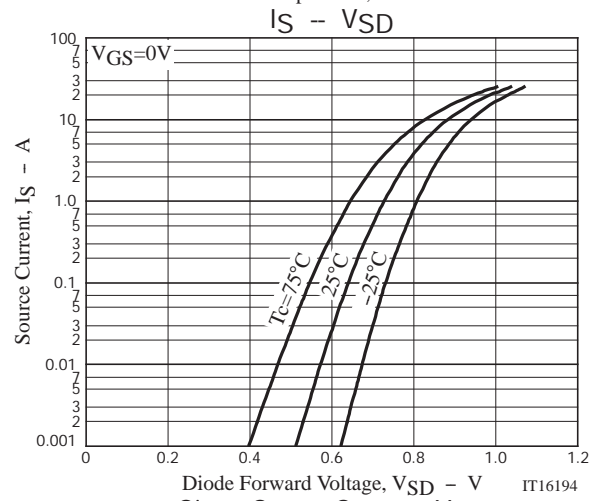
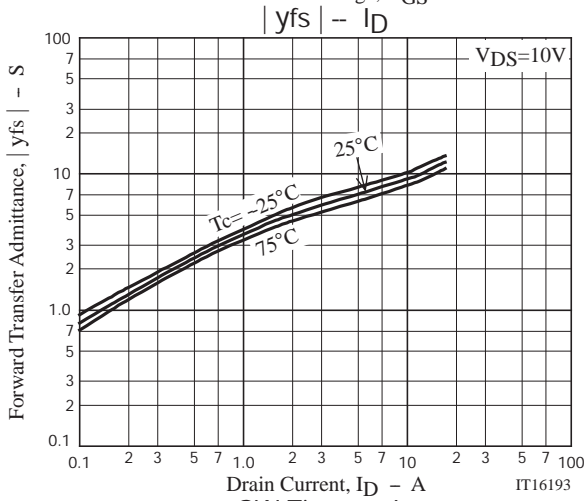
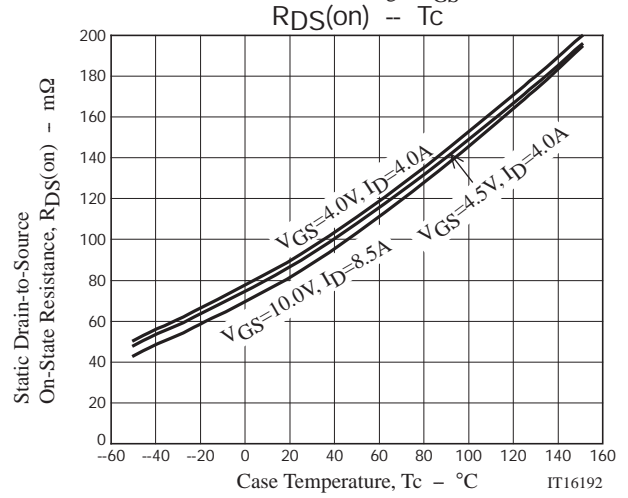
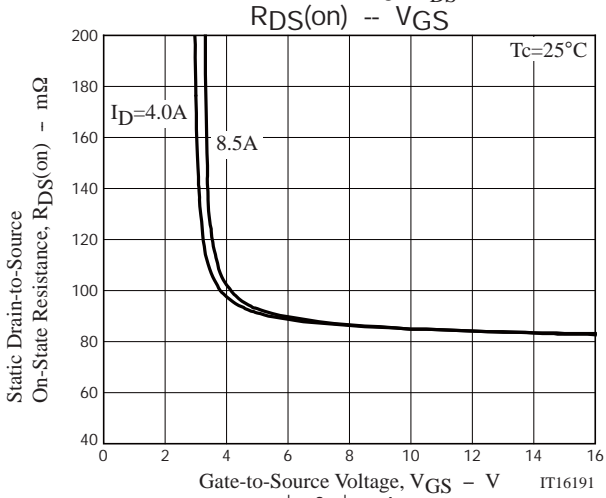
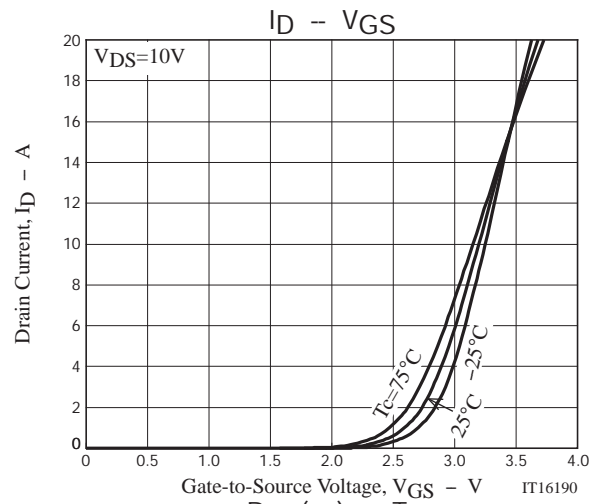
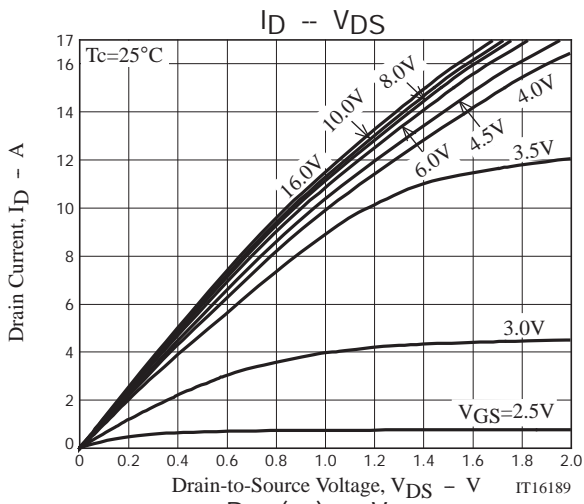
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	100			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =100V, V <sub>GS</sub> =0V			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.2		2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =8.5A		8.9		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =8.5A, V <sub>GS</sub> =10V		85	111	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =4A, V <sub>GS</sub> =4.5V		90	126	mΩ
	R <sub>DS(on)3</sub>	I <sub>D</sub> =4A, V <sub>GS</sub> =4V		93	130	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =20V, f=1MHz		1030		pF
Output Capacitance	C <sub>oss</sub>			78		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			42		pF
Turn-ON Delay Time	t <sub>d(on)</sub>		See specified Test Circuit.		10	
Rise Time	t <sub>r</sub>			35		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>			60		ns
Fall Time	t <sub>f</sub>			60		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =50V, V <sub>GS</sub> =10V, I <sub>D</sub> =17A			19	
Gate-to-Source Charge	Q <sub>gs</sub>			3.6		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>			3.8		nC
Diode Forward Voltage	V <sub>SD</sub>		I <sub>S</sub> =17A, V <sub>GS</sub> =0V		0.96	1.2

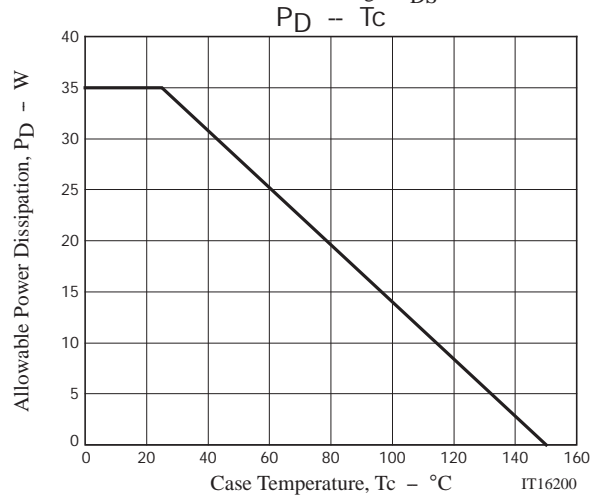
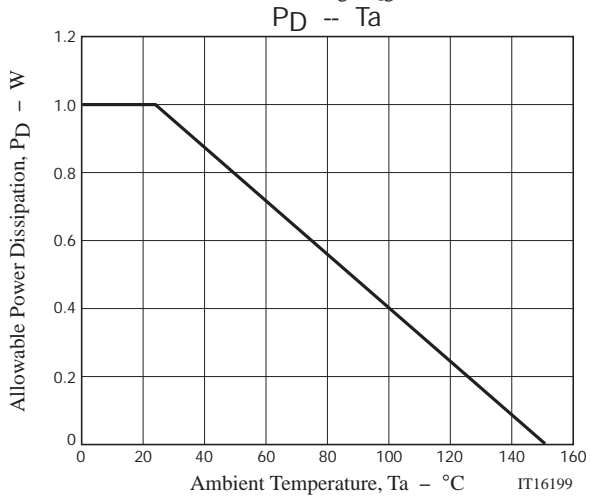
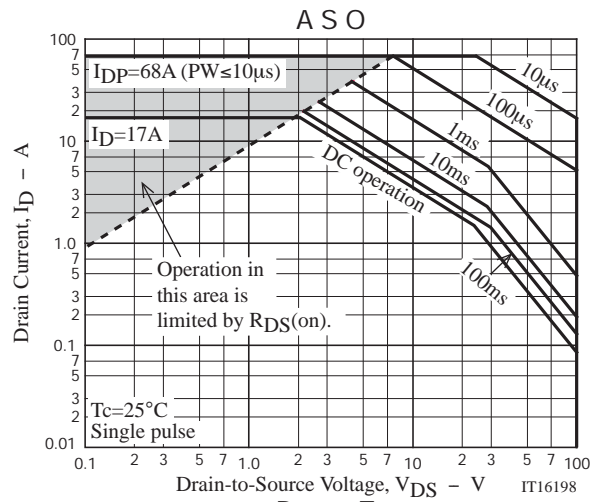
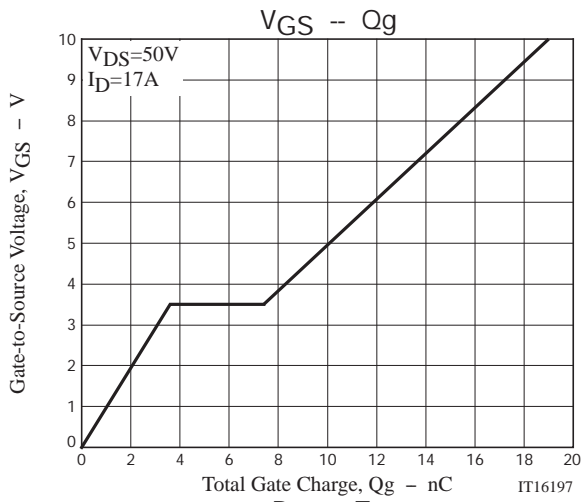
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
SFT1445-H	TP	500pcs./bag	Pb Free and Halogen Free
SFT1445-TL-H	TP-FA	700pcs./reel	





Taping Specification

SFT1445-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.

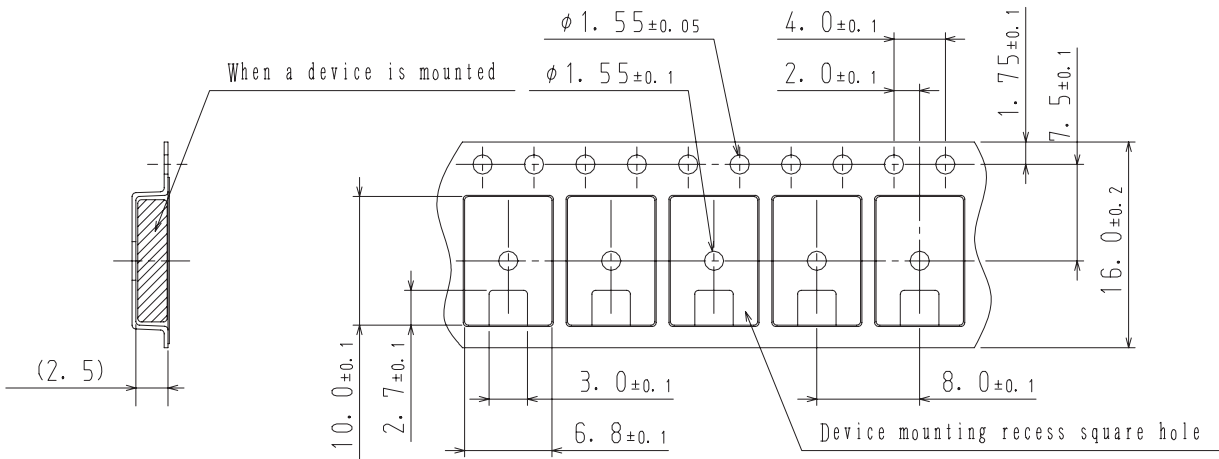
Type No. →  
LOT No. →  
Quantity →  
Origin →

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

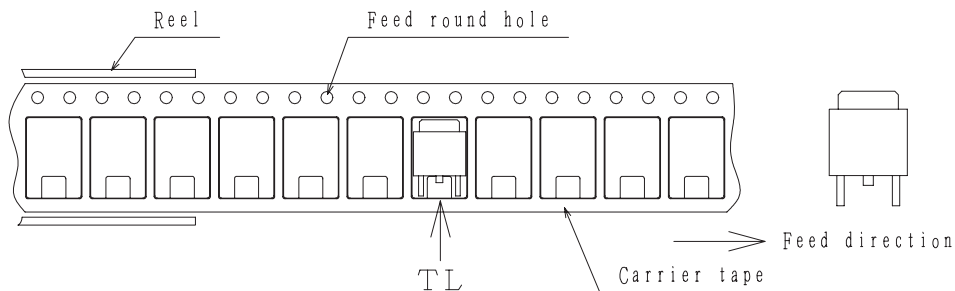
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

Taping configuration

1. Carrier tape size (unit:mm)



2. Device placement direction

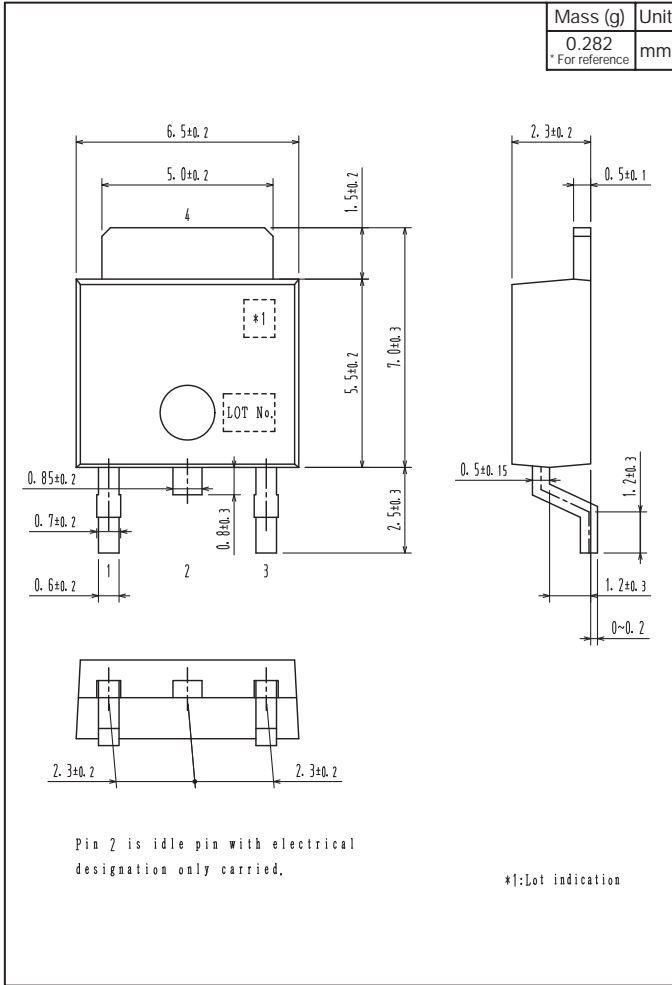


Those with one electrode terminal on the feed hole side.....TL

# SFT1445

## Outline Drawing

SFT1445-TL-H



## Land Pattern Example



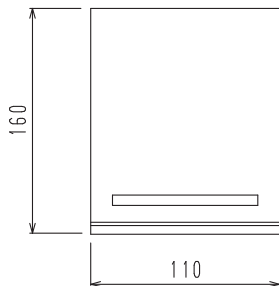
Bag Packing Specification

SFT1445-H

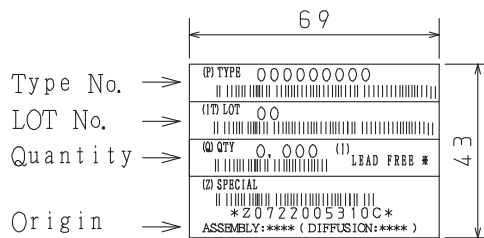
1. Packing Format

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)



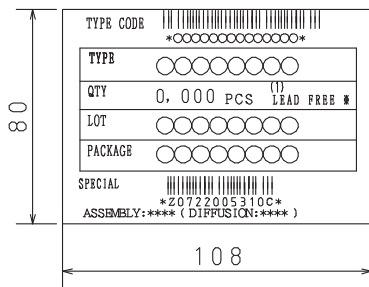
4. Outer box label  
(unit:mm)

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.

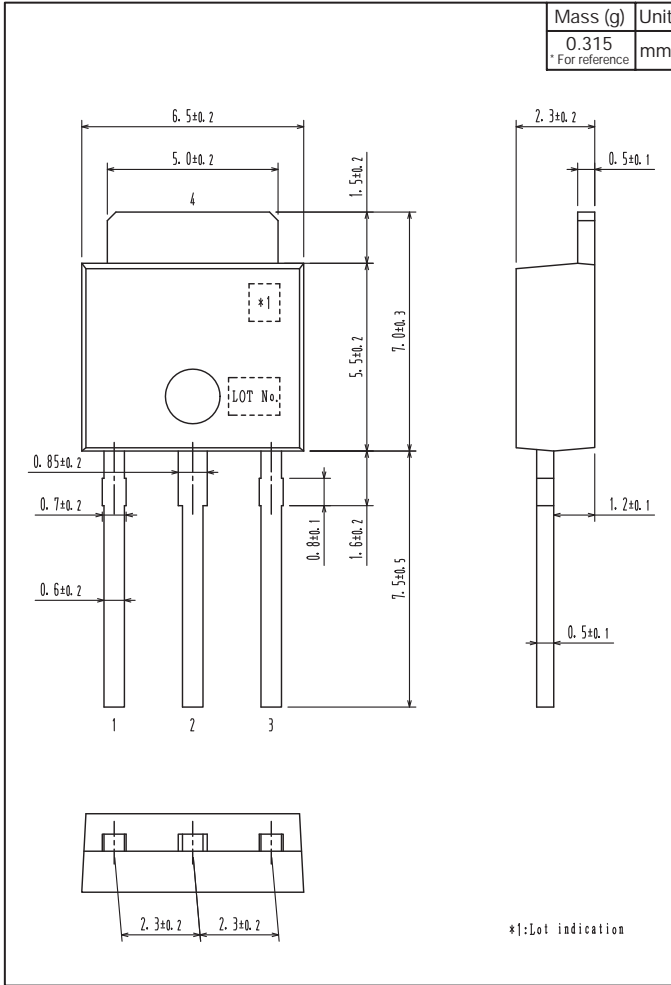
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3



# SFT1445

## Outline Drawing

SFT1445-H





Note on usage : Since the SFT1445 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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