



SFT1452

N-Channel Power MOSFET 250V, 3A, 2.4Ω, Single DPAK/IPAK

ON Semiconductor®

<http://onsemi.com>

Features

- ON-resistance $R_{DS(on)}=1.8\Omega(\text{typ.})$
- Input Capacitance $C_{iss}=210\text{pF}(\text{typ.})$
- 10V drive
- Halogen free compliance
- ESD Diode-Protected Gate

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		250	V
Gate-to-Source Voltage	V_{GS}		± 30	V
Drain Current (DC)	I_D		3	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	12	A
Power Dissipation	P_D		1	W
		$T_c=25^\circ\text{C}$	26	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

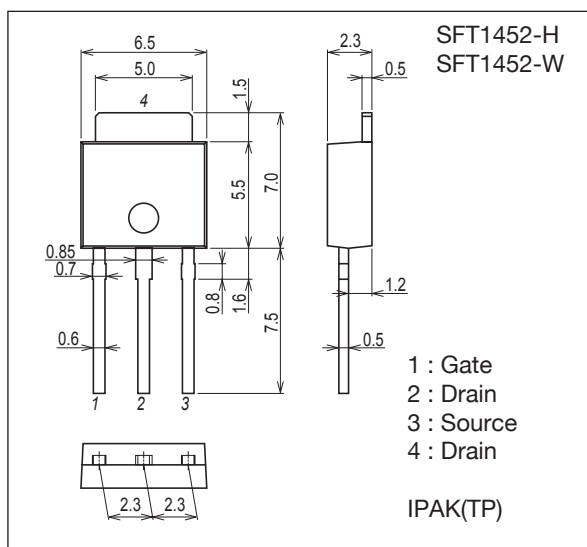
Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Junction to Case Steady State	$R_{\theta JC}$	4.81	$^\circ\text{C/W}$
Junction to Ambient *1	$R_{\theta JA}$	125	

Note : *1 Insertion mounted

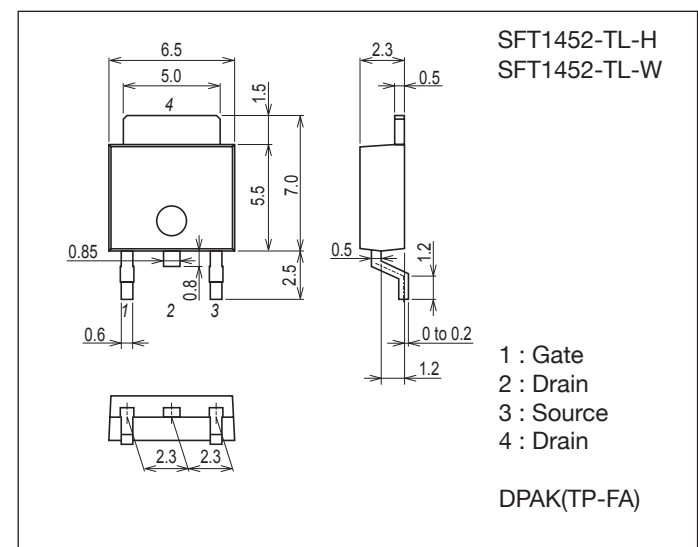
Package Dimensions unit : mm (typ)

7518-004



Package Dimensions unit : mm (typ)

7003-004



ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

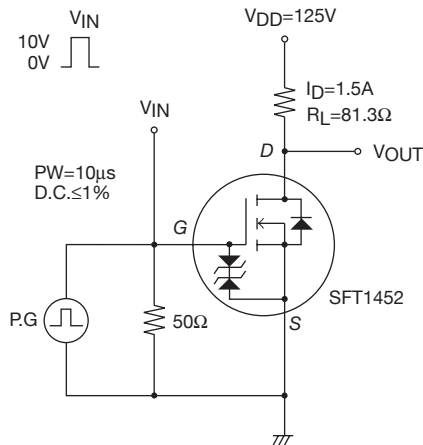
SFT1452

Electrical Characteristics at Ta=25°C

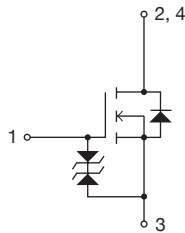
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	250			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=250V, V_{GS}=0V$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 24V, V_{DS}=0V$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=10V, I_D=1mA$	2.5		4.5	V
Forward Transconductance	g_{FS}	$V_{DS}=10V, I_D=1.5A$		1.7		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=1.5A, V_{GS}=10V$		1.8	2.4	Ω
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		210		pF
Output Capacitance	C_{oss}			20		pF
Reverse Transfer Capacitance	C_{rss}			7		pF
Turn-ON Delay Time	$t_{d(on)}$			8		ns
Rise Time	t_r	See specified Test Circuit.		9		ns
Turn-OFF Delay Time	$t_{d(off)}$			13		ns
Fall Time	t_f			14		ns
Total Gate Charge	Q_g	$V_{DS}=125V, V_{GS}=10V, I_D=3A$		4.2		nC
Gate-to-Source Charge	Q_{gs}			1.4		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			1.0		nC
Forward Diode Voltage	V_{SD}	$I_S=3A, V_{GS}=0V$		0.95	1.2	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Switching Time Test Circuit



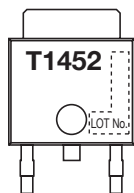
Electrical Connection



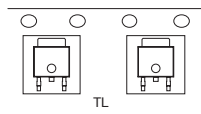
Ordering & Package Information

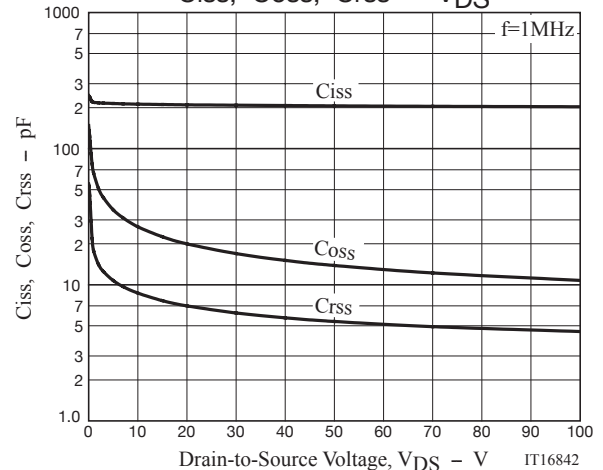
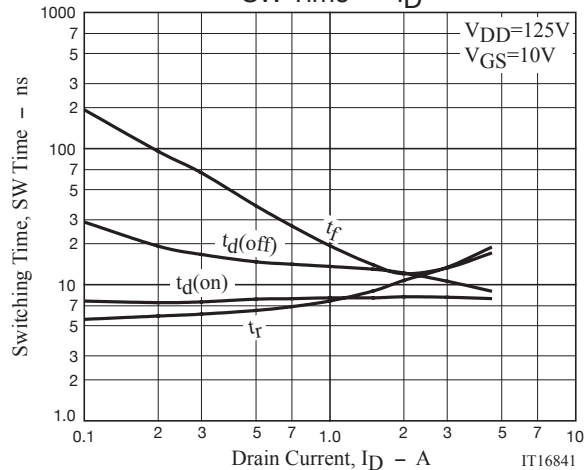
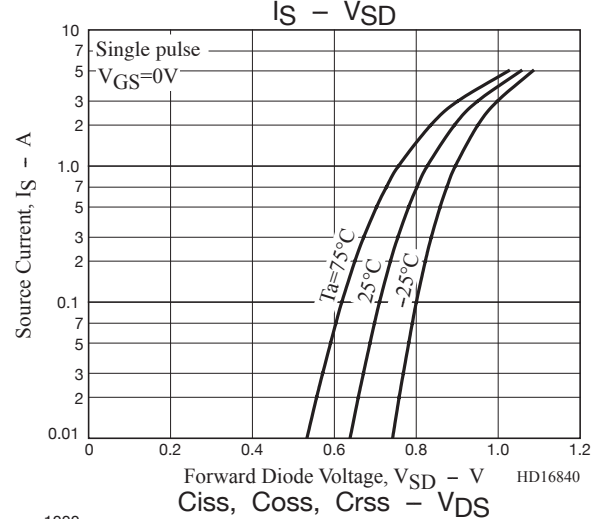
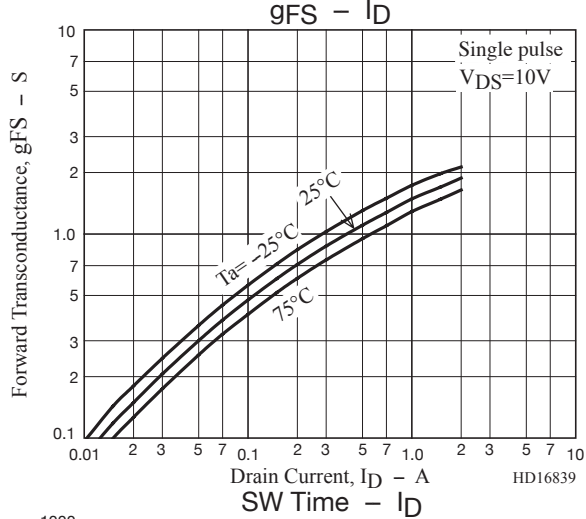
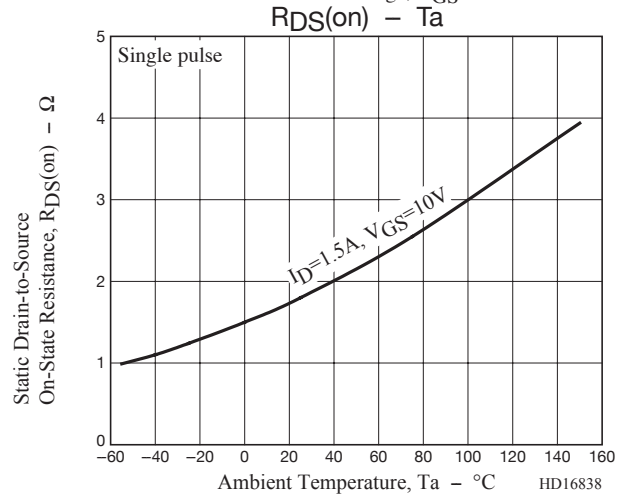
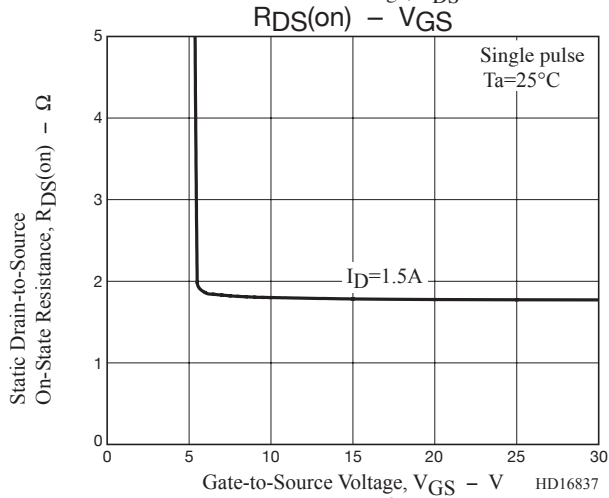
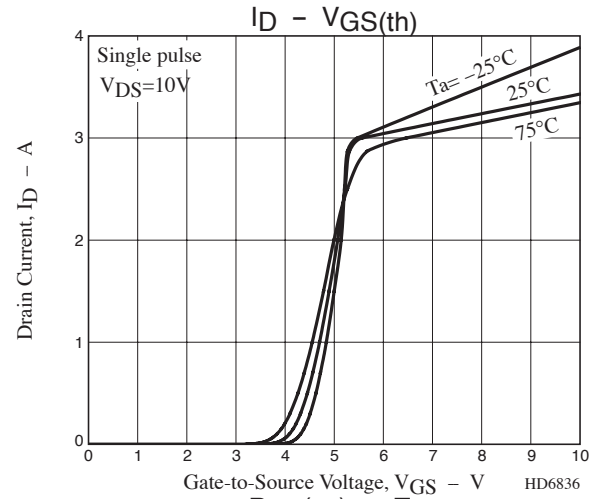
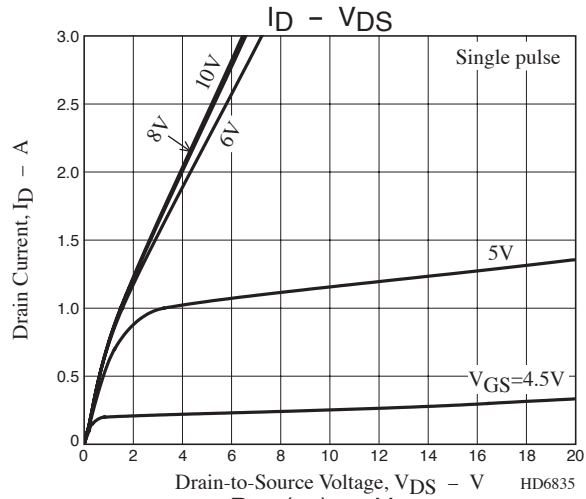
Device	Package	Shipping	memo
SFT1452-H	IPAK(TP)	500pcs./bag	Pb-Free and Halogen Free
SFT1452-W	SC-64, TO-251		
SFT1452-TL-H	DAPK(TP-FA)	700pcs./reel	
SFT1452-TL-W	SC-63, TO-252		

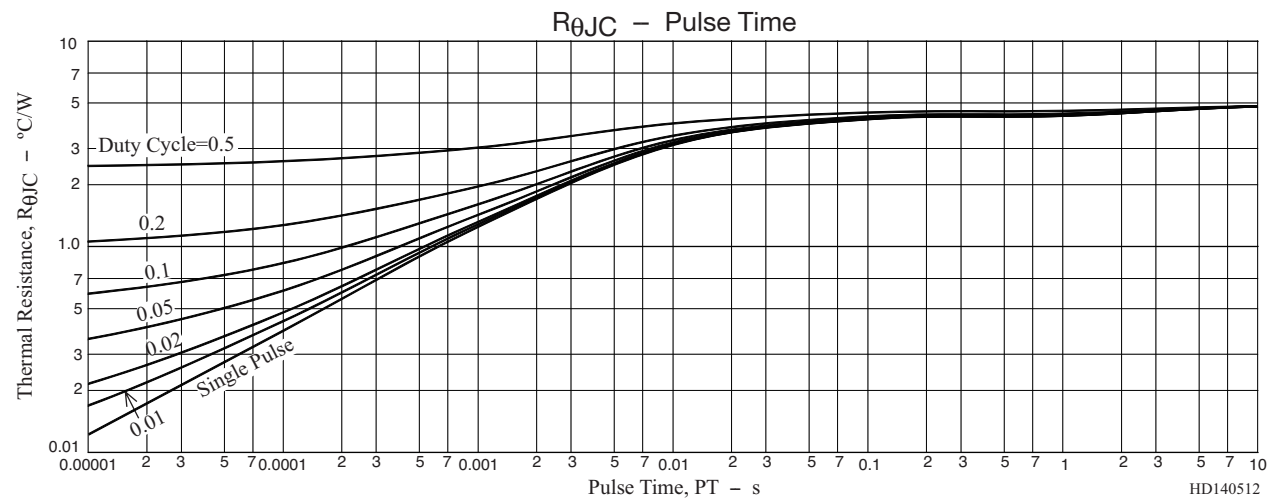
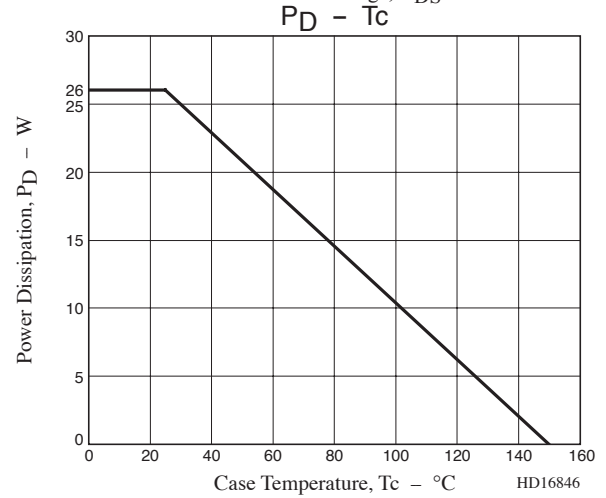
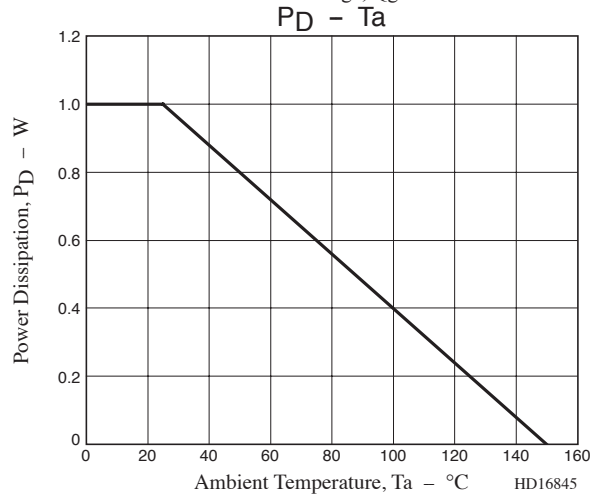
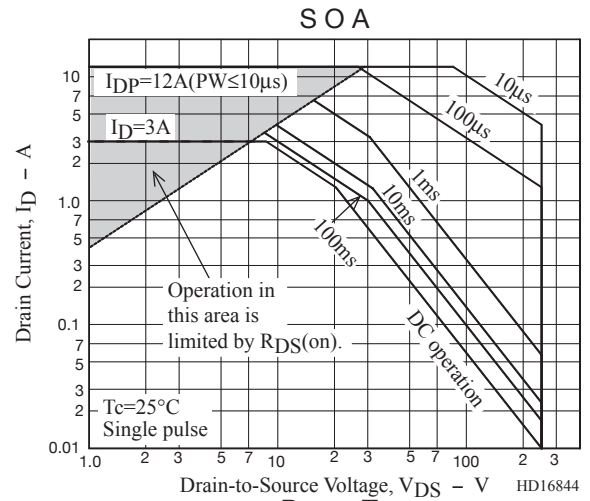
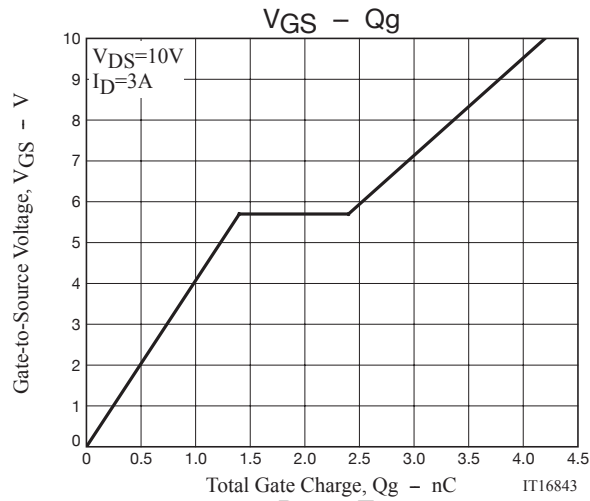
Marking



Packing Type:TL



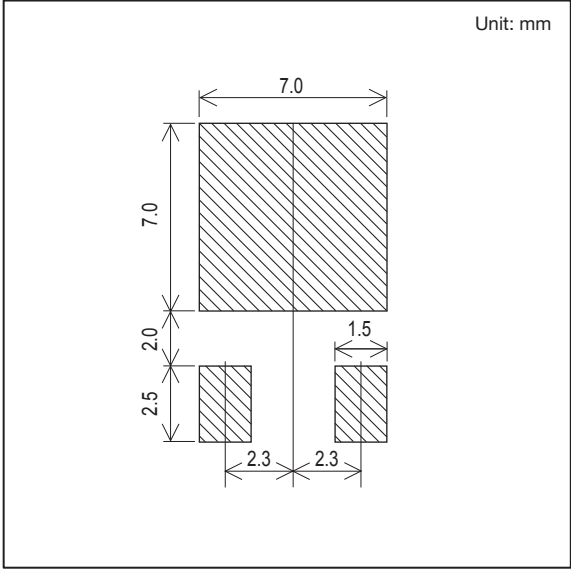
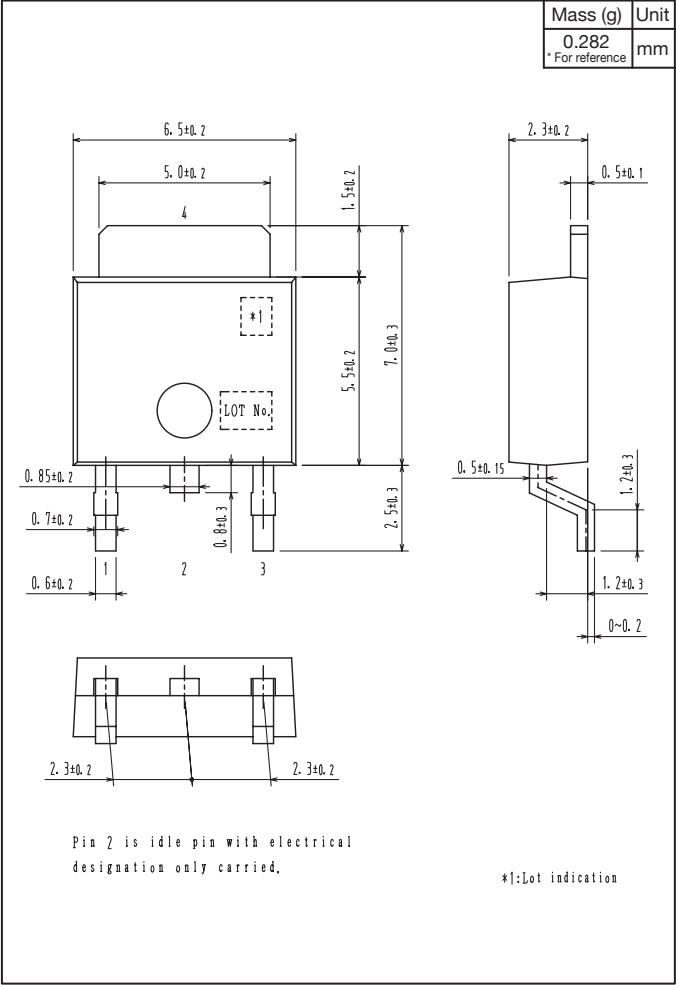




Outline Drawing

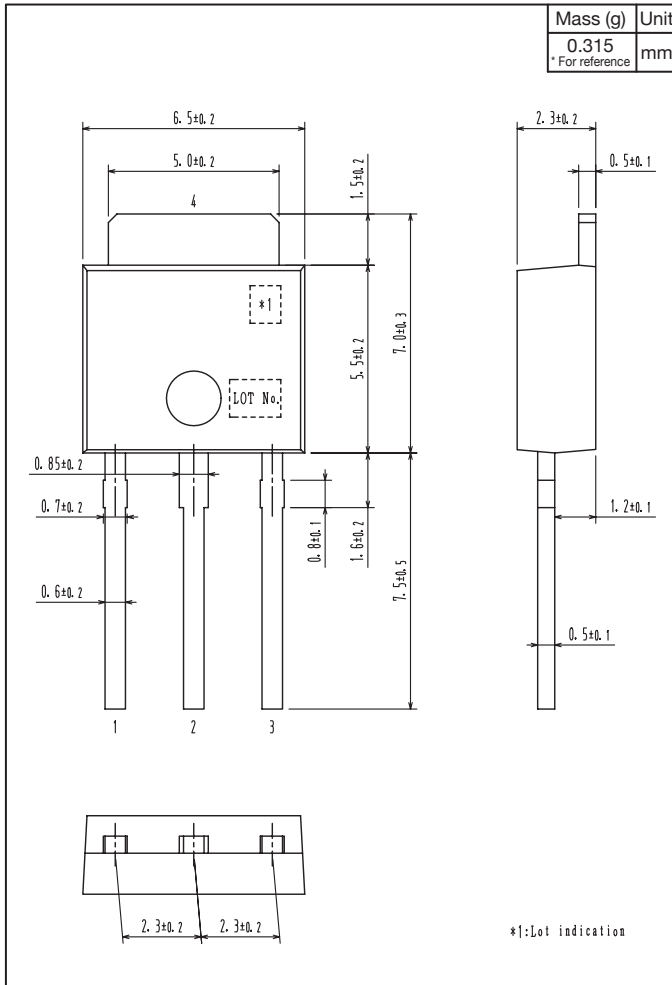
SFT1452-TL-H, SFT1452-TL-W

Land Pattern Example



Outline Drawing

SFT1452-H, SFT1452-W



Note on usage : Since the SFT1452 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

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moschip.ru_9