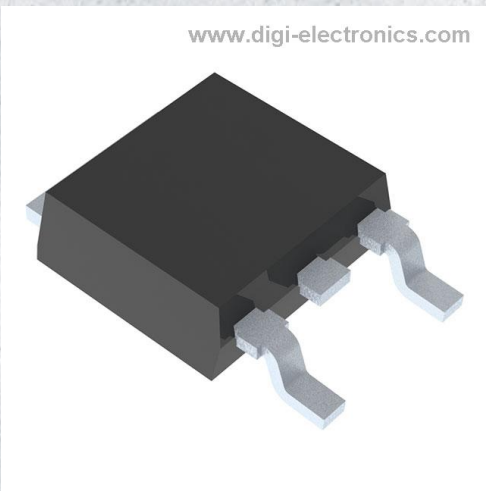
SFT1443-TL-H Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	SFT1443-TL-H-DG
Manufacturer	onsemi
Manufacturer Product Number	SFT1443-TL-H
Description	MOSFET N-CH 100V 9A DPAK/TP-FA
Detailed Description	N-Channel 100 V 9A (Ta) 1W (Ta), 19W (Tc) Surface Mount DPAK/TP-FA

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
SFT1443-TL-H	onsemi
Series:	Product Status:
-	Obsolete
FET Type:	Technology:
N-Channel	MOSFET (Metal Oxide)
Drain to Source Voltage (Vdss):	Current - Continuous Drain (Id) @ 25°C:
100 V	9A (Ta)
Drive Voltage (Max Rds On, Min Rds On):	Rds On (Max) @ Id, Vgs:
4V, 10V	225mOhm @ 3A, 10V
Vgs(th) (Max) @ Id:	Gate Charge (Qg) (Max) @ Vgs:
2.6V @ 1mA	9.8 nC @ 10 V
Vgs (Max):	Input Capacitance (Ciss) (Max) @ Vds:
±20V	490 pF @ 20 V
FET Feature:	Power Dissipation (Max):
-	1W (Ta), 19W (Tc)
Operating Temperature:	Mounting Type:
150°C (TJ)	Surface Mount
Supplier Device Package:	Package / Case:
DPAK/TP-FA	TO-252-3, DPAK (2 Leads + Tab), SC-63
Base Product Number:	
SFT144	

Environmental & Export classification

Moisture Sensitivity Level (MSL):	REACH Status:
1 (Unlimited)	REACH Unaffected
ECCN:	HTSUS:
EAR99	8541.29.0095

Ordering number : ENA1896B

SFT1443

Power MOSFET
100V, 225mΩ, 9A, Single N-Channel

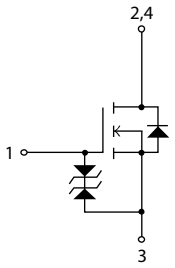
ON Semiconductor®

http://onsemi.com

Features

- High Speed Switching
- ESD Diode-Protected Gate
- Low Gate Charge
- Pb-free, Halogen-free and RoHS Compliance

Electrical Connection
N-Channel



Specifications

Absolute Maximum Ratings at Ta = 25°C

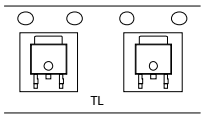
Parameter		Symbol	Value	Unit
Drain to Source Voltage		V_{DSS}	100	V
Gate to Source Voltage		V_{GSS}	±20	V
Drain Current (DC)		I_D	9	A
Drain Current PW≤10μs, duty cycle≤1%		I_{DP}	36	A
Power Dissipation		P_D	1.0	W
	Tc=25°C		19	W
Junction Temperature		Tj	150	°C
Storage Temperature		Tstg	–55 to +150	°C

Thermal Resistance Ratings

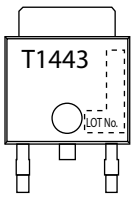
Parameter	Symbol	Value	Unit
Junction to Case Steady State	$R_{\theta JC}$	6.58	°C/W
Junction to Ambient *[1]	$R_{\theta JA}$	125	

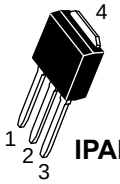
Note : *[1] Insertion mounted

Packing Type:TL

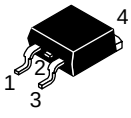


Marking





IPAK(TP)



DPAK(TP-FA)

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.

ORDERING INFORMATION

See detailed ordering and shipping information on page 6 of this data sheet.

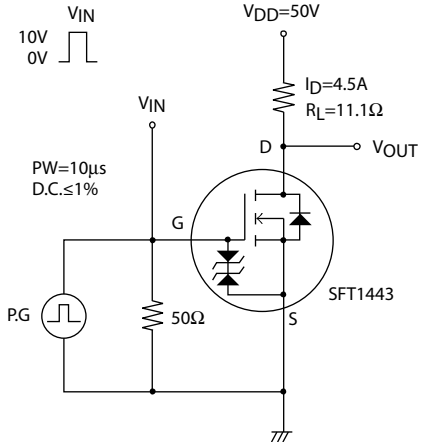
SFT1443

Electrical Characteristics at Ta = 25°C

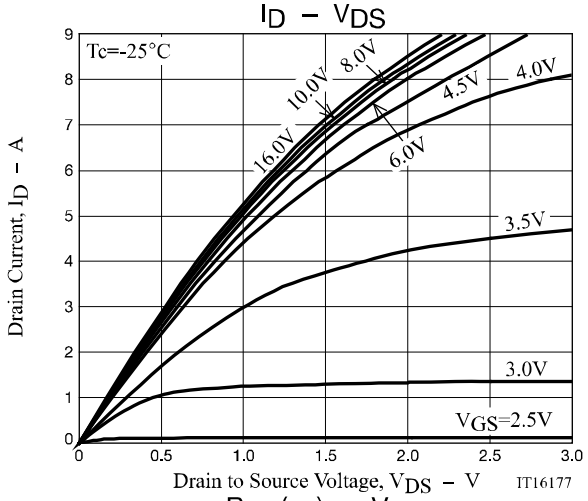
Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	100			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V			1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Gate Threshold Voltage	$V_{GS}(th)$	V_{DS}=10V, I_D=1mA	1.5		2.6	V
Forward Transconductance	g_{FS}	V_{DS}=10V, I_D=4.5A		4		S
Static Drain to Source On-State Resistance	$R_{DS}(on)1$	I_D=3A, V_{GS}=10V		180	225	mΩ
	$R_{DS}(on)2$	I_D=1.5A, V_{GS}=4.5V		195	275	mΩ
	$R_{DS}(on)3$	I_D=1.5A, V_{GS}=4V		205	290	mΩ
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		490		pF
Output Capacitance	Coss			34		pF
Reverse Transfer Capacitance	Crss			19		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		8		ns
Rise Time	t_r			10		ns
Turn-OFF Delay Time	$t_d(off)$			34		ns
Fall Time	t_f			24		ns
Total Gate Charge	Qg	V_{DS}=50V, V_{GS}=10V, I_D=9A		9.8		nC
Gate to Source Charge	Qgs			1.8		nC
Gate to Drain “Miller” Charge	Qgd			1.6		nC
Forward Diode Voltage	V_{SD}	I_S=9A, V_{GS}=0V		1.03	1.2	V

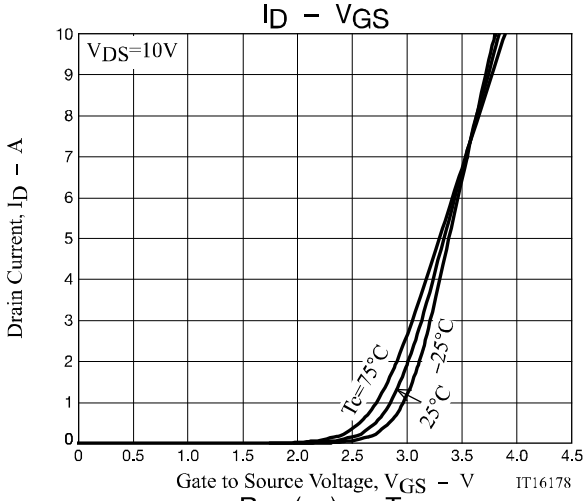
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

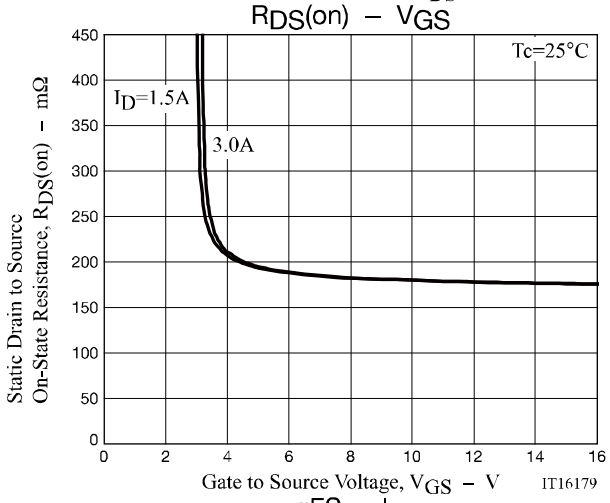
Switching Time Test Circuit

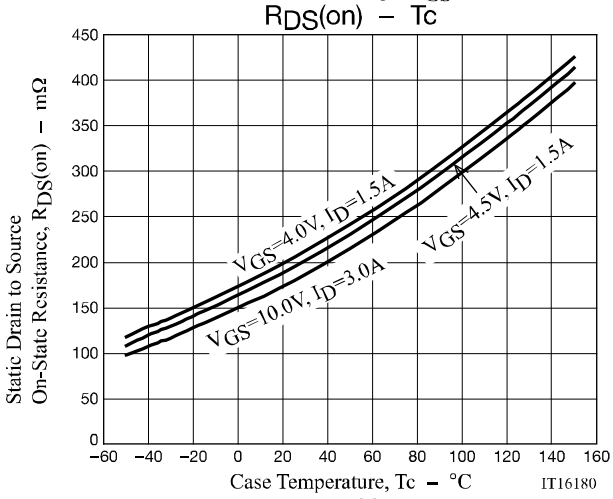


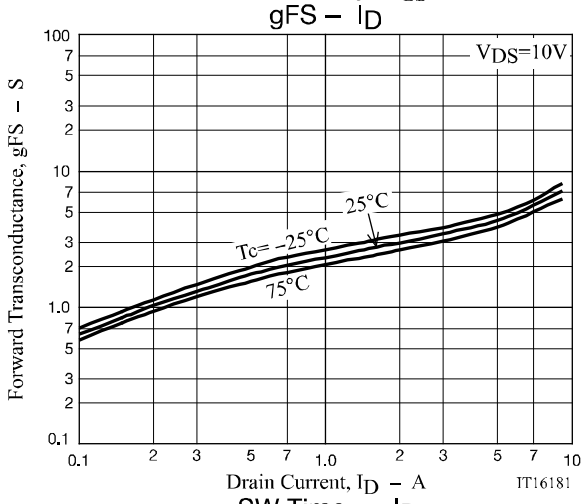
SFT1443

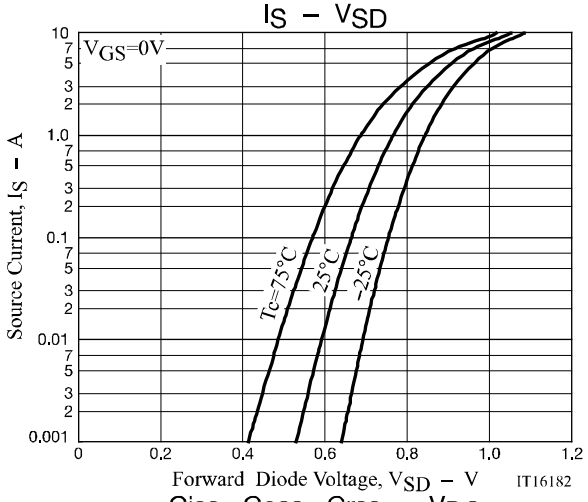

ID – VDS
Tc=-25°C
10.0V
8.0V
4.5V
4.0V
16.0V
6.0V
3.5V
3.0V
VGS=2.5V
Drain Current, ID – A
Drain to Source Voltage, VDS – V
IT16177

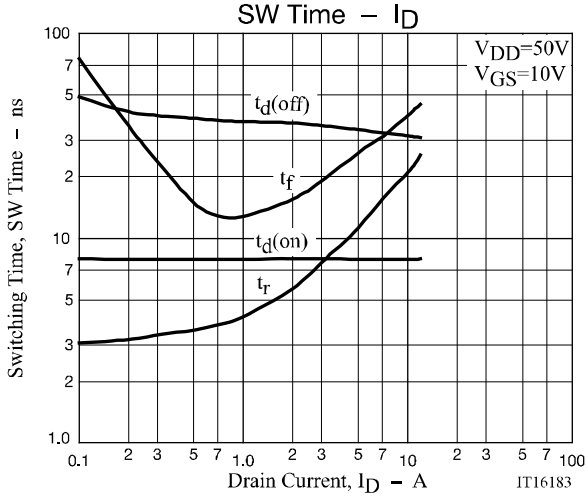

ID – VGS
VDS=10V
Tc=75°C
25°C
–25°C
Drain Current, ID – A
Gate to Source Voltage, VGS – V
IT16178

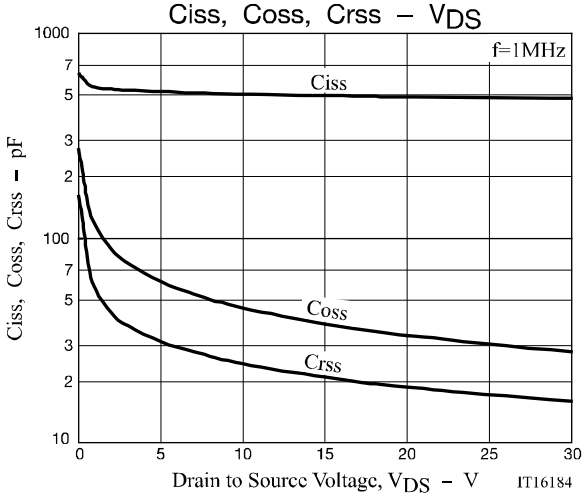

RDS(on) – VGS
Tc=25°C
ID=1.5A
3.0A
Static Drain to Source
On-State Resistance, RDS(on) – mΩ
Gate to Source Voltage, VGS – V
IT16179


RDS(on) – Tc
VGS=4.0V, ID=1.5A
VGS=4.5V, ID=1.5A
VGS=10.0V, ID=3.0A
Static Drain to Source
On-State Resistance, RDS(on) – mΩ
Case Temperature, Tc – °C
IT16180

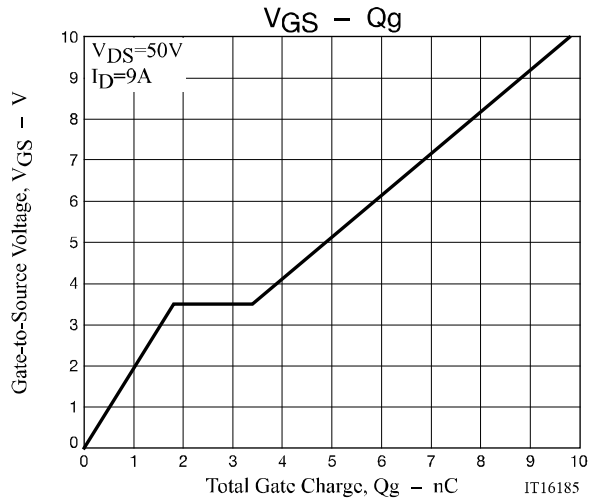

gFS – ID
VDS=10V
25°C
Tc= –25°C
75°C
Forward Transconductance, gFS – S
Drain Current, ID – A
IT16181

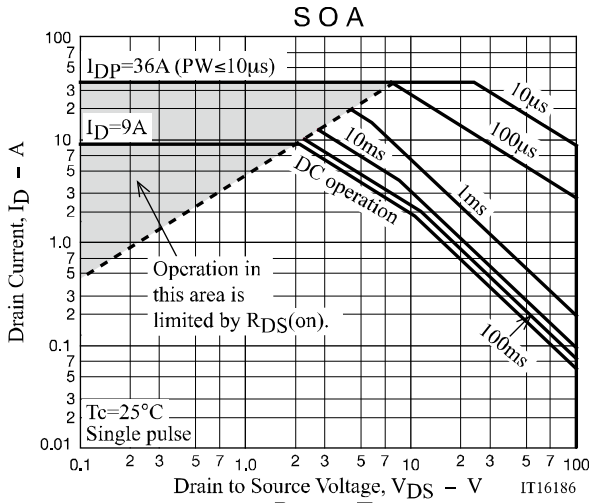

IS – VSD
VGS=0V
Tc=75°C
25°C
–25°C
Source Current, IS – A
Forward Diode Voltage, VSD – V
IT16182

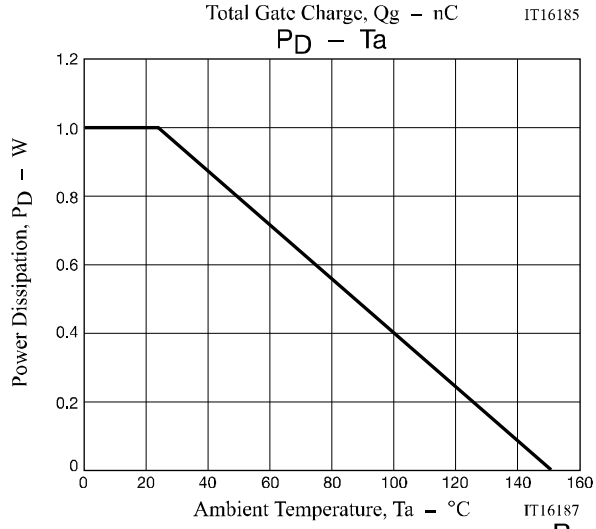

SW Time – ID
VDD=50V
VGS=10V
td(off)
tf
td(on)
tr
Switching Time, SW Time – ns
Drain Current, ID – A
IT16183

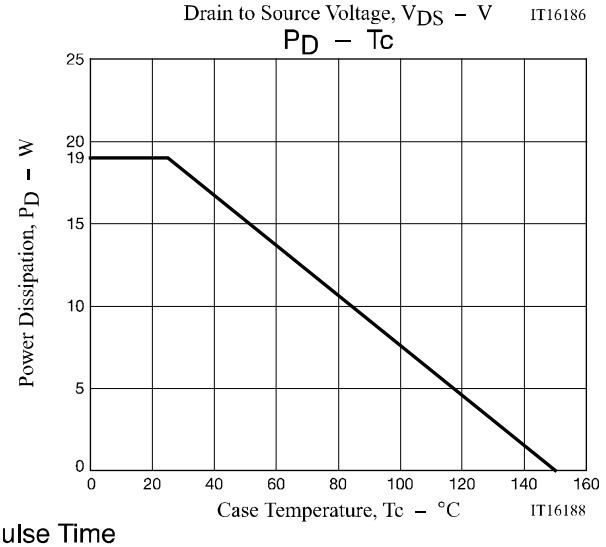

Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain to Source Voltage, VDS – V
IT16184

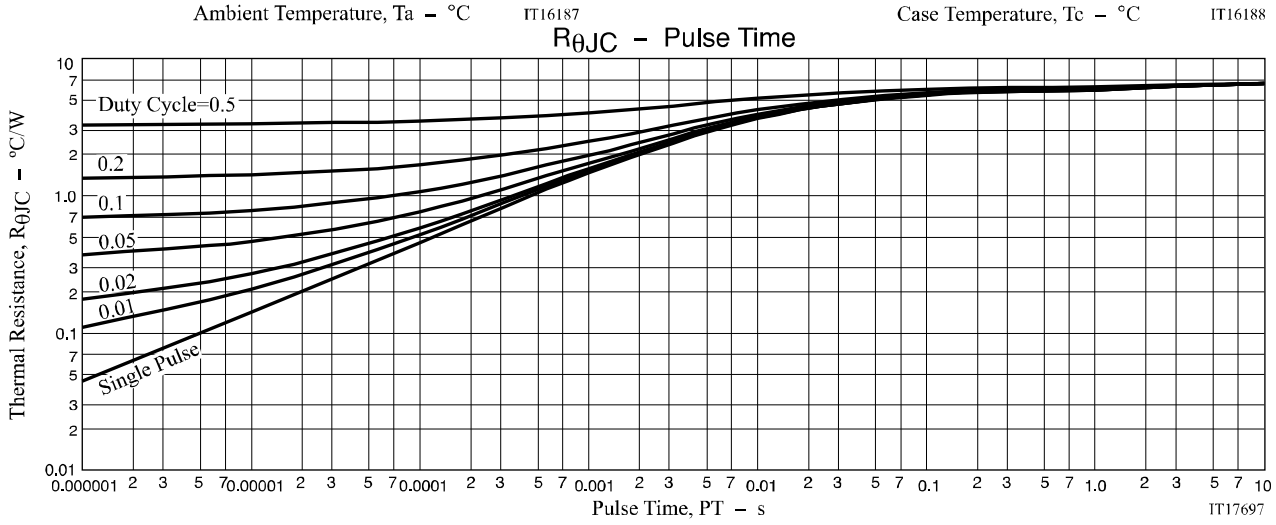
SFT1443


VGS – Qg
VDS=50V
ID=9A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT16185


S O A
IDP=36A (PW≤10μs)
ID=9A
10μs
100μs
10ms
1ms
DC operation
100ms
Operation in
this area is
limited by RDS(on).
Tc=25°C
Single pulse
Drain Current, ID – A
Drain to Source Voltage, VDS – V
IT16186


PD – Ta
Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT16187


PD – Tc
Power Dissipation, PD – W
Case Temperature, Tc – °C
IT16188


RθJC – Pulse Time
Duty Cycle=0.5
0.2
0.1
0.05
0.02
0.01
Single Pulse
Thermal Resistance, RθJC – °C/W
Pulse Time, PT – s
IT17697

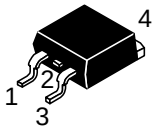
SFT1443

Package Dimensions

SFT1443-TL-H/ SFT1443-TL-W

DPAK/TP-FA

unit : mm

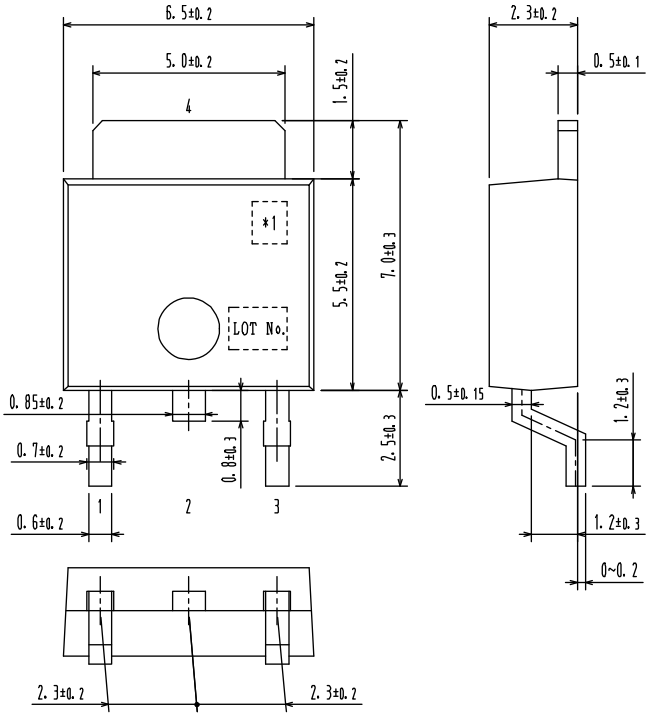


1:Gate

2:Drain

3:Source

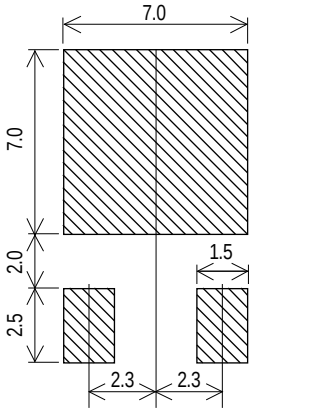
4:Drain



Pin 2 is idle pin with electrical designation only carried.

*1:Lot indication

Recommended Soldering Footprint



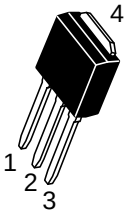
SFT1443

Package Dimensions

SFT1443-H/ SFT1443-W

IPAK/TP

Unit : mm

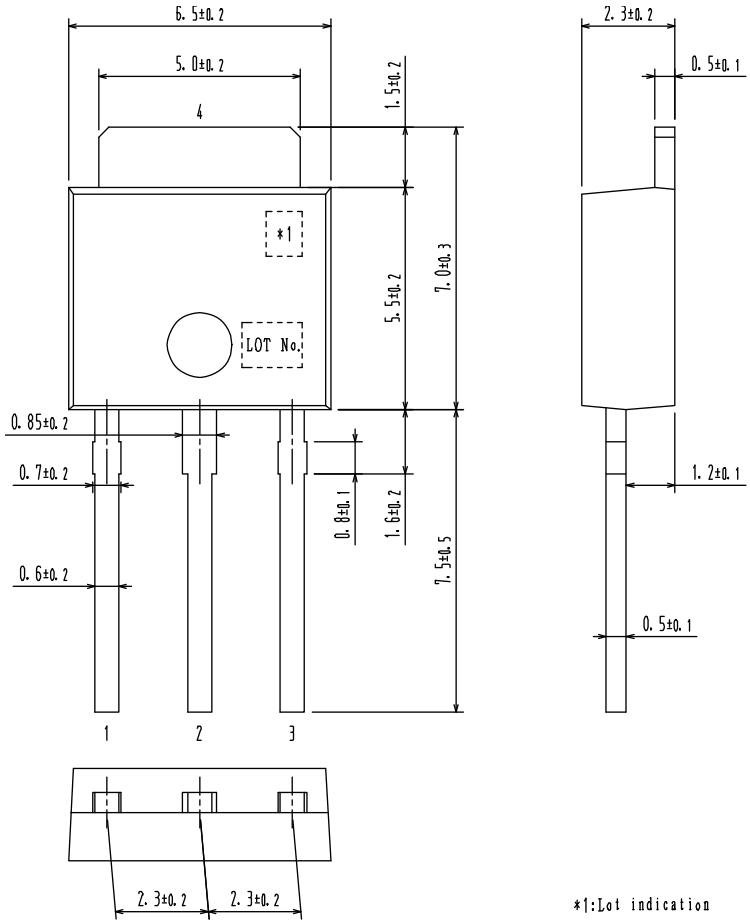


1:Gate

2:Drain

3:Source

4:Drain



Ordering & Package Information

Device	Package	Shipping	Note
SFT1443-H	IPAK(TP) SC-64,TO-251	500pcs. / bag	Pb-Free and Halogen Free
SFT1443-W			
SFT1443-TL-H	DPAK(TP-FA) SC-63,TO-252	700pcs. / reel	
SFT1443-TL-W			

Note on usage : Since the SFT1443 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

OUR CERTIFICATE

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