



# SFT1458

## N-Channel Power MOSFET 600V, 1.0A, 13Ω, Single TP/TP-FA

ON Semiconductor®

http://onsemi.com

### Features

- On-resistance  $R_{DS(on)}=10\Omega$ (typ.)
- Input Capacitance  $C_{iss}=65\text{pF}$ (typ.)
- Protection Diode in
- 10V drive
- Halogen free compliance

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	$V_{DSS}$		600	V
Gate to Source Voltage	$V_{GSS}$		$\pm 30$	V
Drain Current (DC)	$I_D$		1	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	4	A
Allowable Power Dissipation	$P_D$		1	W
		$T_c=25^\circ\text{C}$	38	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

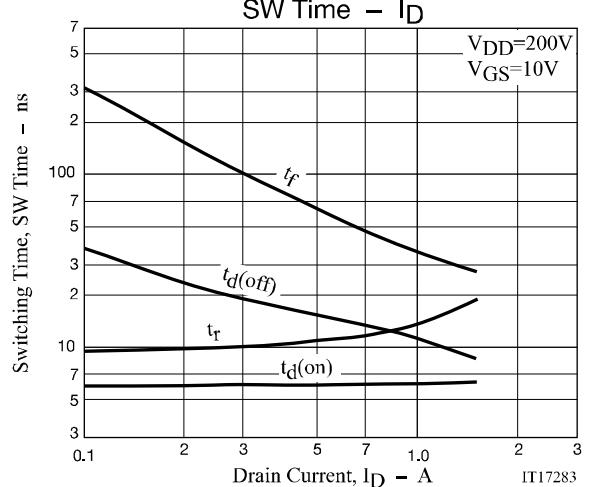
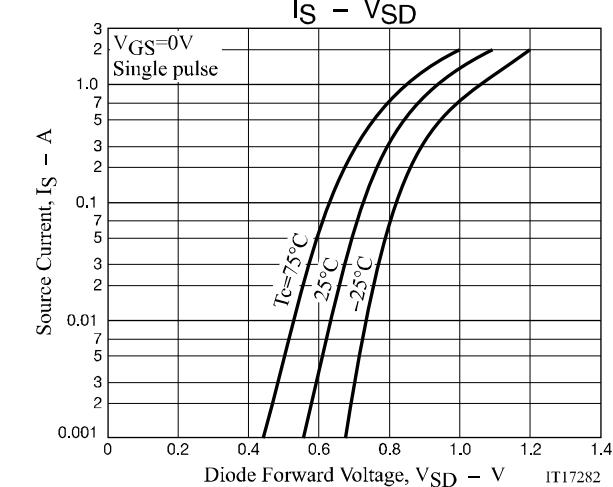
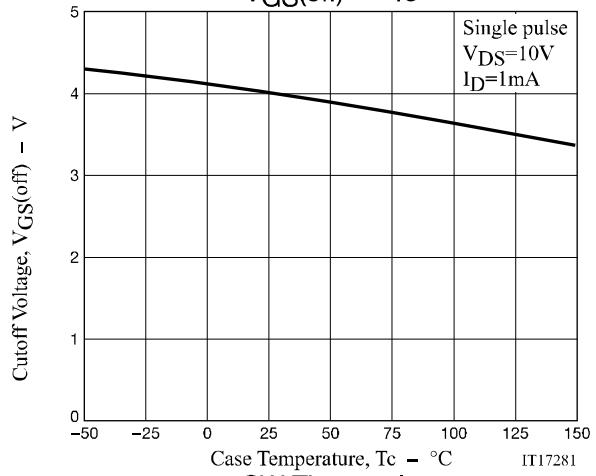
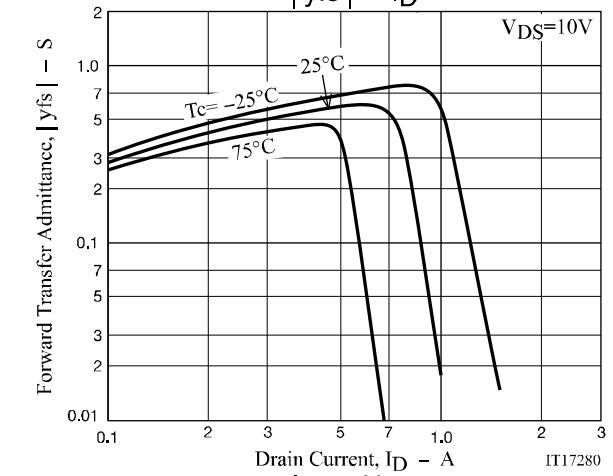
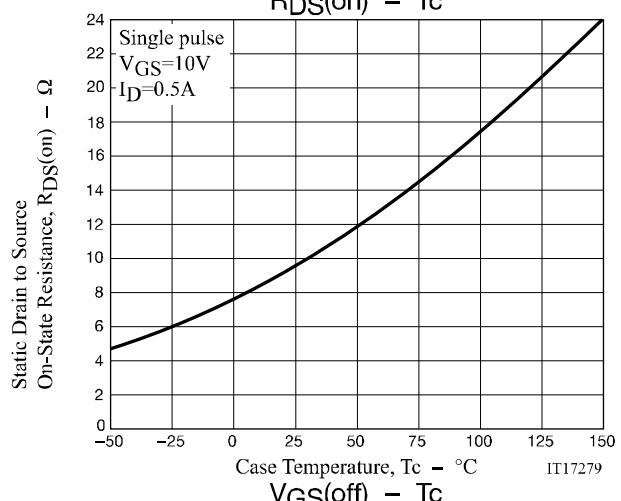
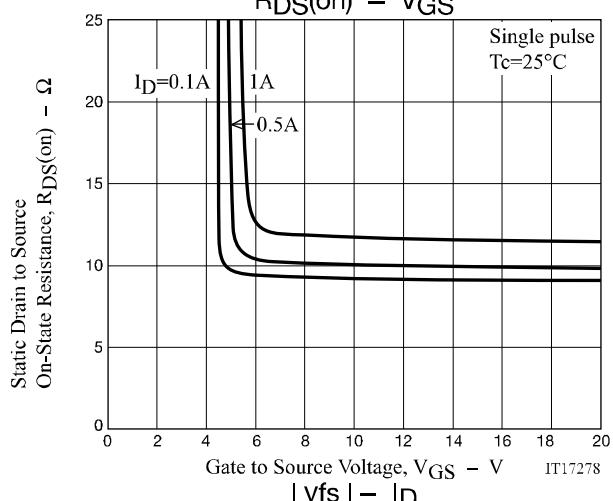
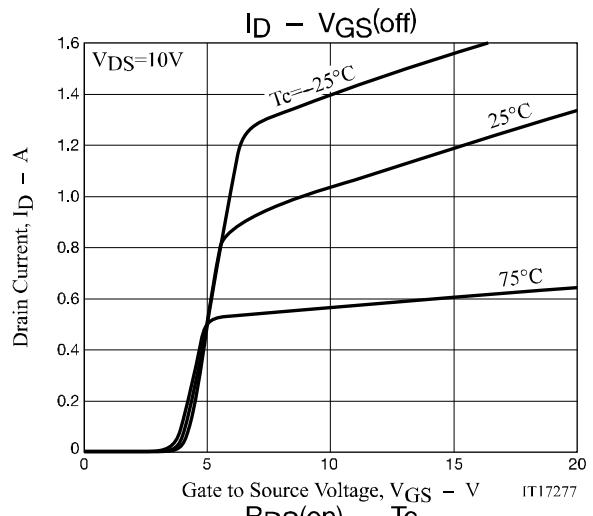
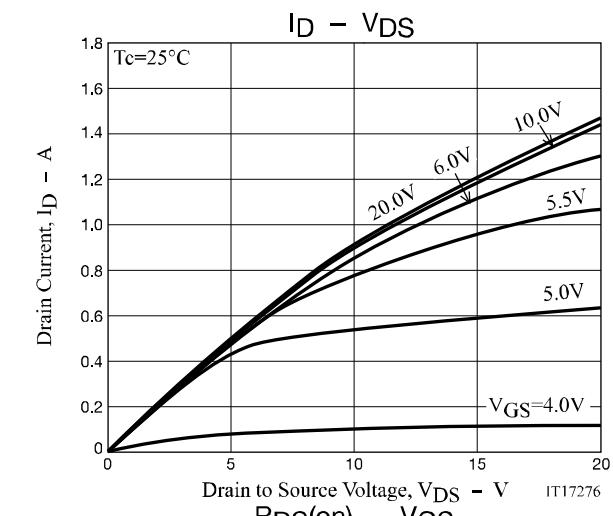
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

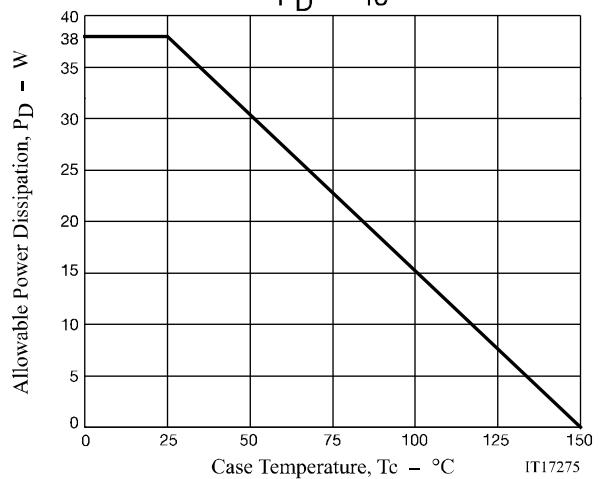
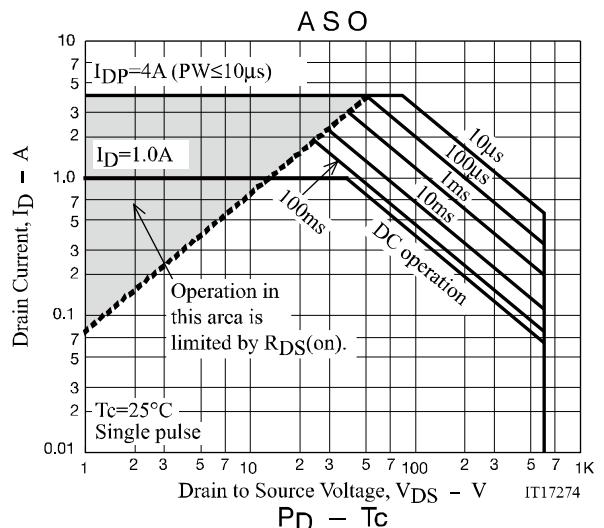
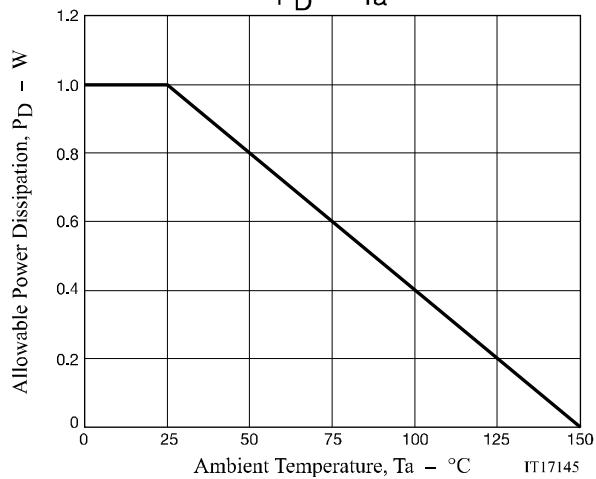
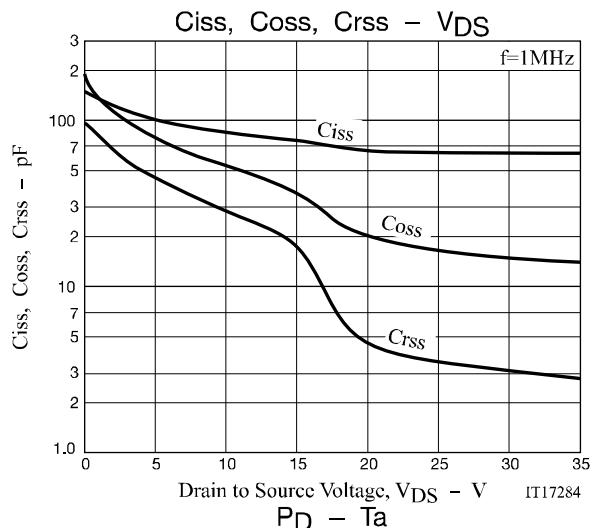
#### Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10\text{mA}$ , $V_{GS}=0\text{V}$	600			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=480\text{V}$ , $V_{GS}=0\text{V}$			100	$\mu\text{A}$
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 24\text{V}$ , $V_{DS}=0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(\text{off})}$	$V_{DS}=10\text{V}$ , $I_D=1\text{mA}$	3.5		4.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$ , $I_D=0.5\text{A}$		0.57		S
Static Drain to Source On-State Resistance	$R_{DS(on)}$	$I_D=0.5\text{A}$ , $V_{GS}=10\text{V}$		10	13	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20\text{V}$ , $f=1\text{MHz}$		65		$\text{pF}$
Output Capacitance	$C_{oss}$			20		$\text{pF}$
Reverse Transfer Capacitance	$C_{rss}$			4.5		$\text{pF}$
Turn-ON Delay Time	$t_{d(on)}$			6		ns
Rise Time	$t_r$	See specified Test Circuit.		11		ns
Turn-OFF Delay Time	$t_{d(off)}$			12		ns
Fall Time	$t_f$			60		ns
Total Gate Charge	$Q_g$			3.8		$\text{nC}$
Gate to Source Charge	$Q_{gs}$	$V_{DS}=200\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=1\text{A}$		0.54		$\text{nC}$
Gate to Drain "Miller" Charge	$Q_{gd}$			2.3		$\text{nC}$
Diode Forward Voltage	$V_{SD}$			0.93	1.2	V

### ORDERING INFORMATION

See detailed ordering and shipping information on page 5 of this data sheet.





**Package Dimensions**

SFT1458-H

**IPAK/TP**

CASE 369AL

ISSUE O

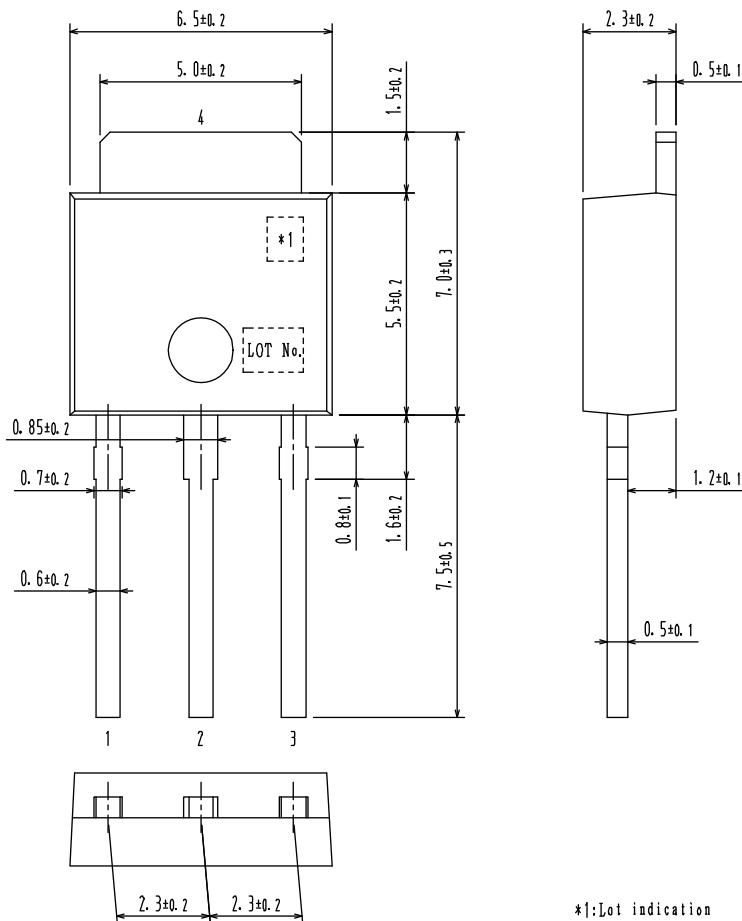
Unit : mm

1: Gate

2: Drain

3: Source

4: Drain



**Package Dimensions**

SFT1458-TL-H

**DPAK/TP-FA**

CASE 369AH

ISSUE O

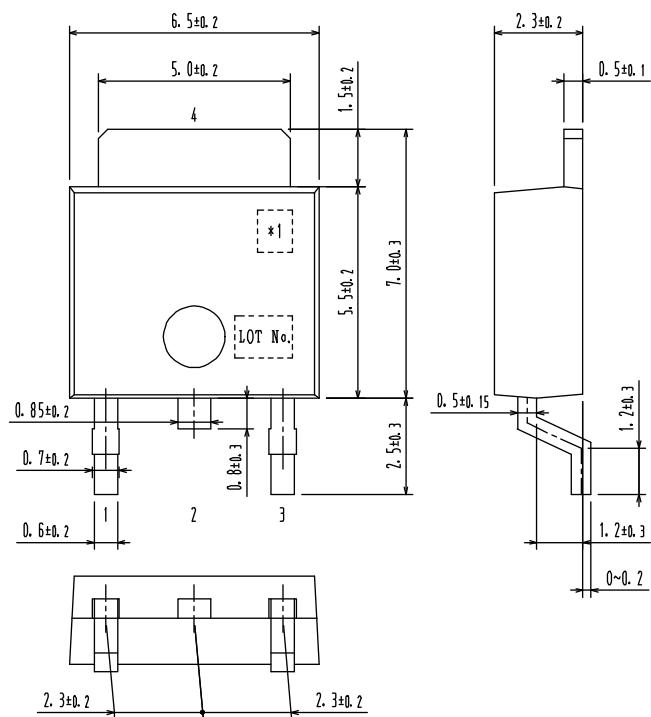
Unit : mm

1: Gate

2: Drain

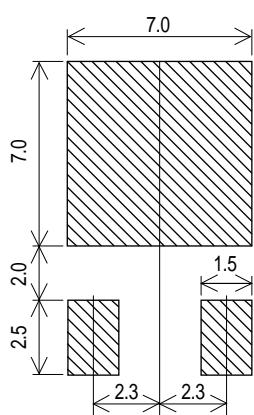
3: Source

4: Drain



\*1:Lot indication

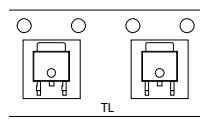
**Land Pattern Example**



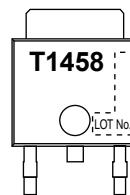
## Ordering & Package Information

Device	Package	Shipping	note
SFT1458-H	TP SC-64,TO-251, SOT-553, DPAK	500 pcs. / bag	Pb-Free And Halogen Free
SFT1458-TL-H	TP-FA SC-63,TO-252, SOT-428, DPAK	700 pcs. / reel	

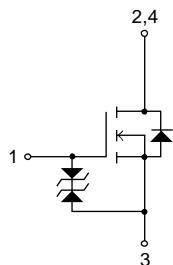
## Packing Type:TL



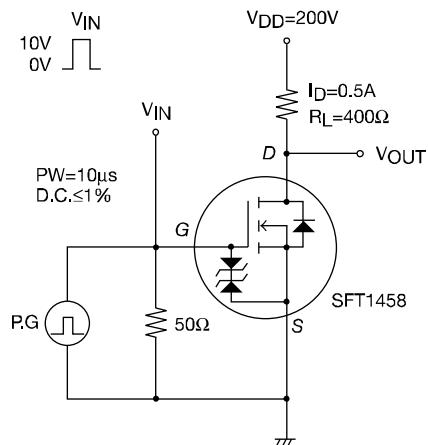
## Marking



## Electrical Connection



## Switching Time Test Circuit



Note on usage : Since the SFT1458 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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