SFT1431

Power MOSFET 35V, 25mΩ,11A, Single N-Channel

Features

- Low On-Resistance
- High Speed Switching
- Low Gate Charge

• ESD Diode-Protected Gate

• Pb-free and RoHS Compliance



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

Parameter		Symbol	Value	Unit
Drain to Source Voltage		VDSS	35	V
Gate to Source Voltage		VGSS	±20	V
Drain Current (DC)		ID	11	А
Drain Current PW≤10μs, duty cycle≤1%		I _{DP}	44	А
Power Dissipation			1.0	W
	Tc=25°C	PD	15	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 _θ JC	8.33	0000
Junction to Ambient *1	R _{θJA}	125	°C/W

Note : *1 Insertion mounted

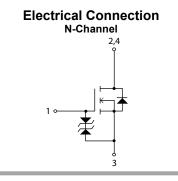
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ORDERING INFORMATION

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

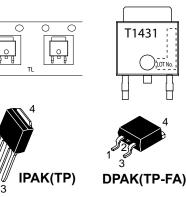


http://onsemi.com







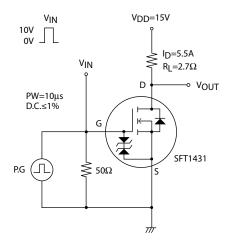


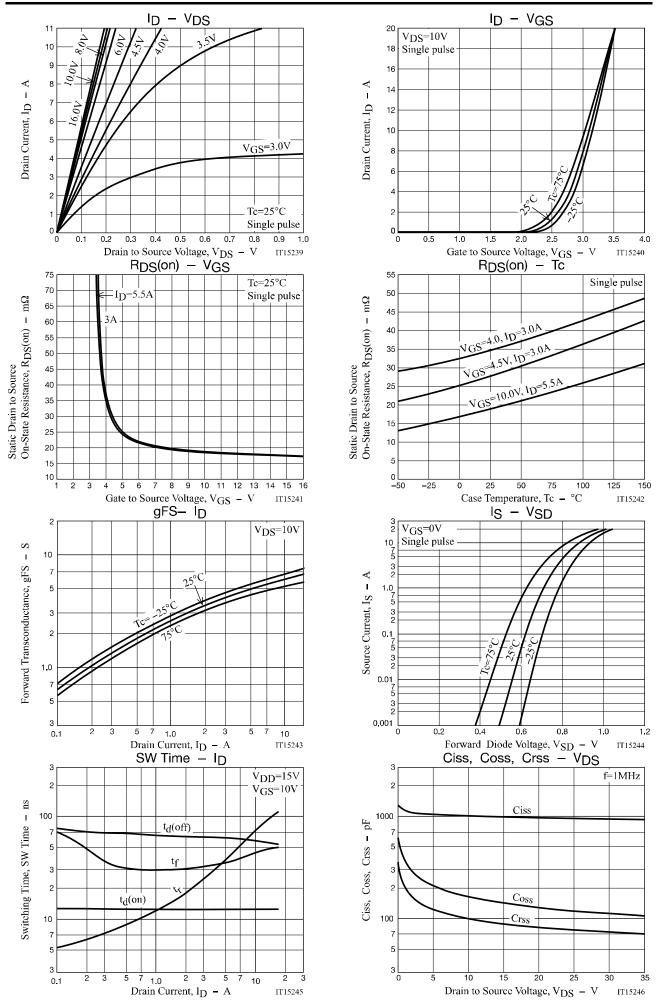
Electrical Characteristics at $Ta = 25^{\circ}C$

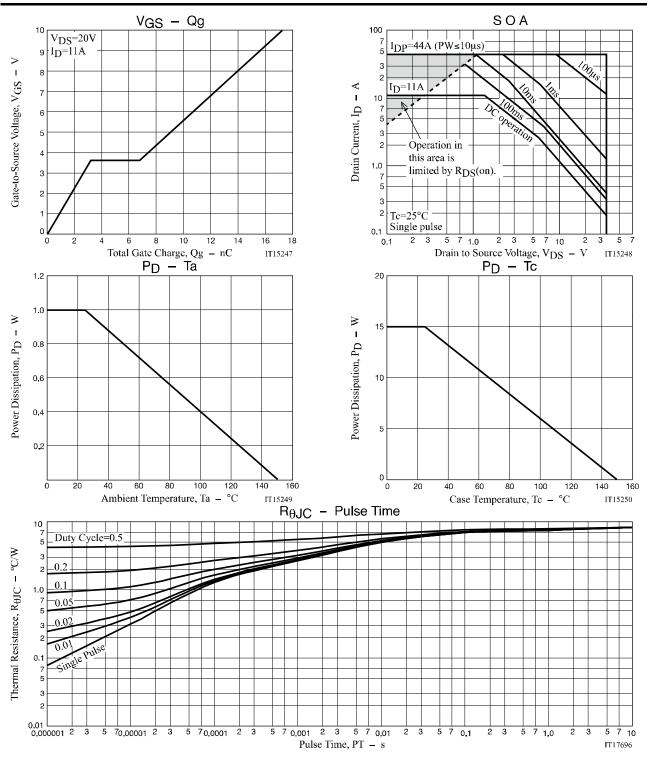
D	0			Value		
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source Breakdown Voltage	V(BR)DSS	I _D =1mA, V _{GS} =0V	35			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =35V, V _{GS} =0V			1	μΑ
Gate to Source Leakage Current	IGSS	V _{GS} =±16V, V _{DS} =0V			±10	μΑ
Gate Threshold Voltage	VGS(th)	V _{DS} =10V, I _D =1mA	1.2		2.6	V
Forward Transconductance	9FS	V _{DS} =10V, I _D =5.5A		5		S
Static Drain to Source On-State Resistance	R _{DS} (on)1	ID=5.5A, VGS=10V		19	25	mΩ
	R _{DS} (on)2	I _D =3A, V _{GS} =4.5V		28	39.5	mΩ
	R _{DS} (on)3	I _D =3A, V _{GS} =4V		35	49	mΩ
Input Capacitance	Ciss			960		pF
Output Capacitance	Coss	V _{DS} =20V, f=1MHz		130		pF
Reverse Transfer Capacitance	Crss	7		84		pF
Turn-ON Delay Time	t _d (on)			12		ns
Rise Time	tr			40		ns
Turn-OFF Delay Time	t _d (off)	See specified Test Circuit.		60		ns
Fall Time	tf			36		ns
Total Gate Charge	Qg			17.3		nC
Gate to Source Charge	Qgs	V _{DS} =20V, V _{GS} =10V, I _D =11A		3.2		nC
Gate to Drain "Miller" Charge	Qgd	1		3.6		nC
Forward Diode Voltage	VSD	I _S =11A, V _{GS} =0V		0.88	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







Package Dimensions SFT1431-TL-E/ SFT1431-TL-W

DPAK/TP-FA

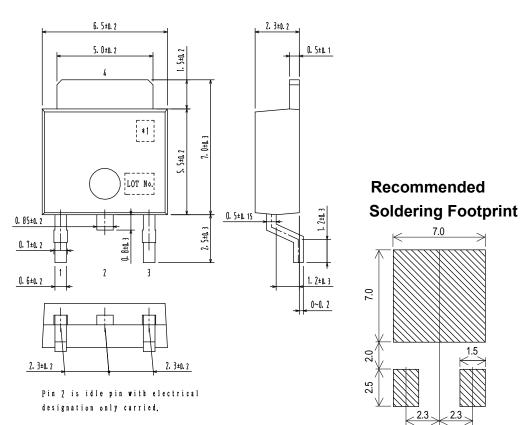
unit : mm



1:Gate 2:Drain

3:Source

4:Drain



*1:Lot indication

7.0

1.5

<u>_ 2.</u>3

Package Dimensions

SFT1431-E/ SFT1431-W 6. 5±0. 2 2. 3±0. 2 **IPAK/TP** 5. O±0. 2 0. 5±0. 1 1. 5±0. 2 Unit : mm 4 | *1 | 7.0±0.3 5. 5±0. 2 LOT No. 1:Gate 0.85±0.2 2:Drain 0. 7±0. 2 1. 2±0. 1 3:Source 1. 6±0. 2 0. 8±0. 1 4:Drain 5±0.5 0.6±0.2 0. 5±0. 1 2 3 Π

2. 3±0. 2

2. 3±0.2

*1:Lot indication

Ordering & Package Information

Device	Package	Shipping	Note	
SFT1431-E	IPAK(TP)	500 (1	Pb-Free	
SFT1431-W	SC-64,TO-251	500pcs. / bag	Pb-Free and Halogen Free	
SFT1431-TL-E	DPAK(TP-FA)	700maa (raal	Pb-Free	
SFT1431-TL-W	SC-63,TO-252	700pcs. / reel	Pb-Free and Halogen Free	

Note on usage : Since the SFT1431 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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