

100V N-Channel Enhancement Mode MOSFET

MAIN CHARACTERISTICS

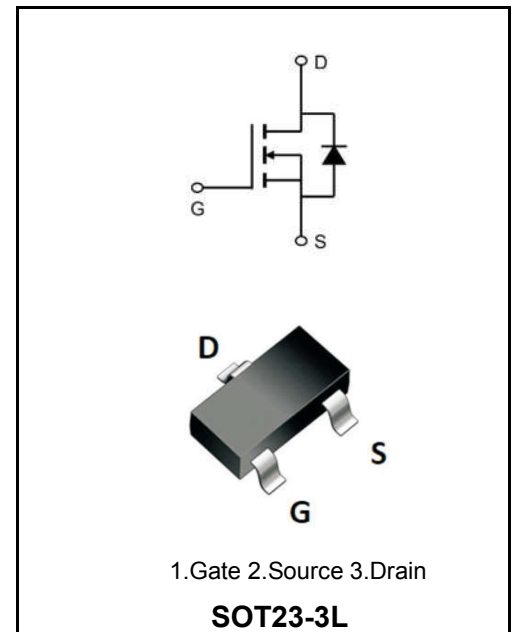
I_D	3A
V_{DSS}	100V
$R_{DS(on)-typ}(@V_{GS}=10V)$	<110mΩ

Features

- ◆TrenchFET Power MOSFET
- ◆Load Switch for Portable Devices.
- ◆DC/DC Converter

Mechanical Data

- ◆SOT23-3L Small Outline Plastic Package.
- ◆Epoxy UL: 94V-0.
- ◆Mounting Position: Any.



Marking Code

YFW3N10MI

3N10

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameters	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	3.0	A
Pulsed Drain Current(note1)	I_{DM}	20	
Power Dissipation	P_D	400	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55-+150	°C
Thermal Resistance From Junction to Ambient (note 2)	$R_{\theta JA}$	312.5	°C/W

Electrical Characteristics

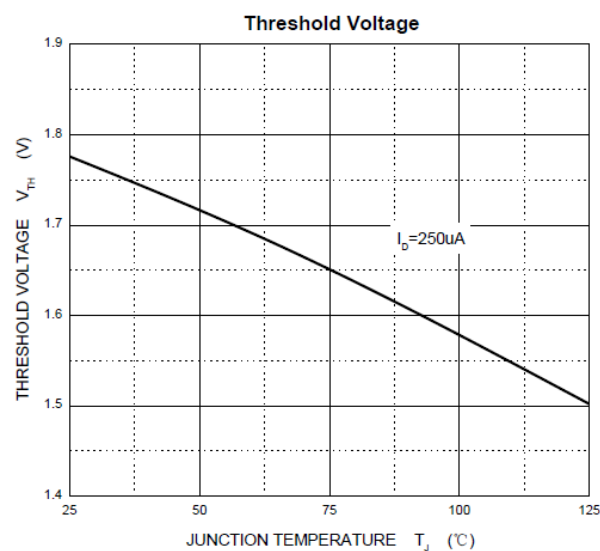
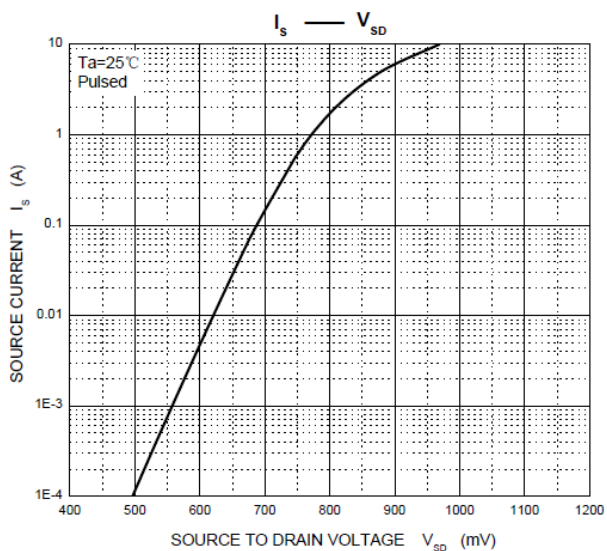
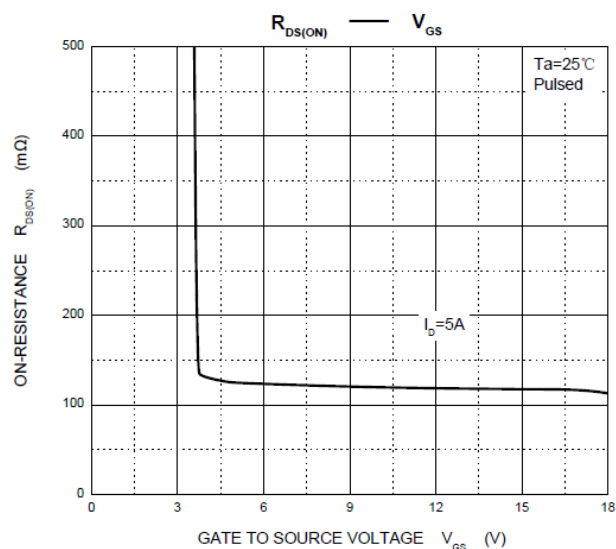
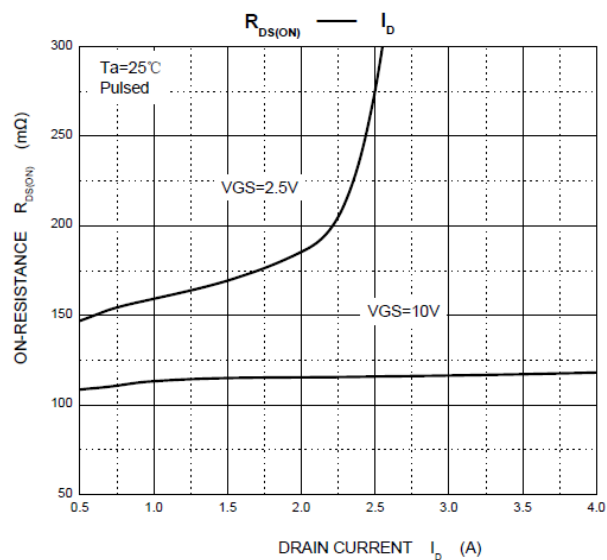
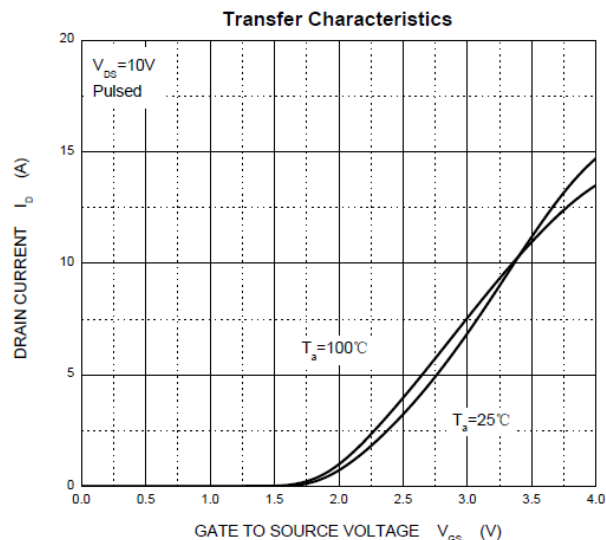
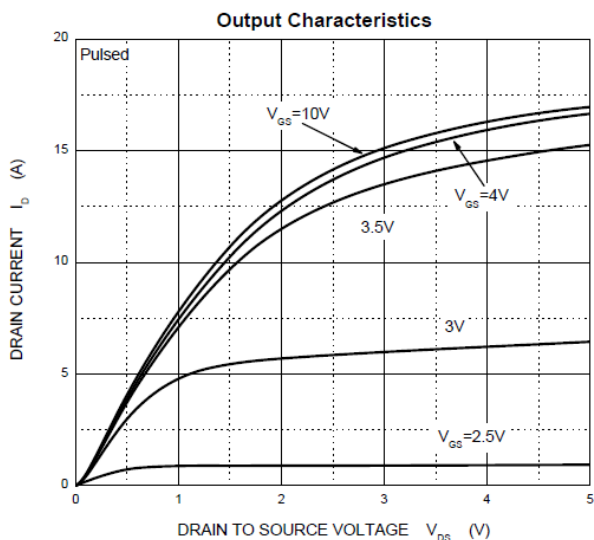
Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	Test Condition	Limits			Unit
			Min	Typ	Max	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
Gate-Threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	1.6	2.5	V
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
Zero Gate Voltage Drain current	I_{DSS}	$V_{DS}=80V, V_{GS}=0V$	-	-	1	uA
Drain-Source On-Resistance(note3)	$R_{DS(ON)}$	$V_{GS}=10V, I_D=3A$	-	-	110	mΩ
Forward trans conductance(note3)	g_{fs}	$V_{DS}=5V, I_D=2.9A$	3	-	-	S
Body diode voltage(note3)	V_{SD}	$I_S=3A, V_{GS}=0V$	-	-	1.2	V
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	-	690	-	pF
Output capacitance	C_{oss}		-	120	-	
Reverse Transfer capacitance	C_{rss}		-	90	-	
Total gate charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_D=3A$	-	15.5	-	nC
Gate-source charge	Q_{gs}		-	3.2	-	
Gate-drain charge	Q_{gd}		-	4.7	-	
Turn-on Time	$t_{d(on)}$	$V_{DS}=30V, V_{GS}=10V, I_D=2A, R_G=2.5\Omega, R_L=15\Omega$	-	11	-	ns
Rise time	t_r		-	7.4	-	
Turn-off Time	$t_{d(off)}$		-	35	-	
Fall time	t_f		-	9.1	-	

Notes:

1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board, $t \leq 10s$
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to producing.

Ratings and Characteristic Curves



Ordering information

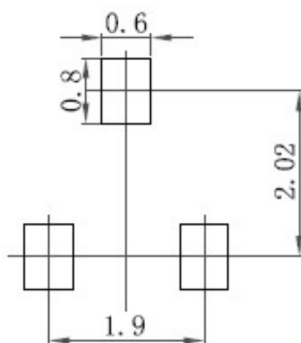
Package	Packing Description	Base Quantity	Packing Quantity
SOT23-3L	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT23-3L

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.05	1.25	41	49.2
A1	0.10		3.93	
A2	1.05	1.15	41	45
b	0.30	0.50	12	20
c	0.10	0.20	3.93	7.9
D	2.82	3.02	111	119
E	1.50	1.70	59	67
E1	2.65	2.95	104	116
e	0.95		37.4	
e1	1.80	2.00	71	78
L	0.30	0.066	12	26
Θ	8°			

The recommended mounting pad size



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