

100V N-Channel Enhancement Mode MOSFET

MAIN CHARACTERISTICS

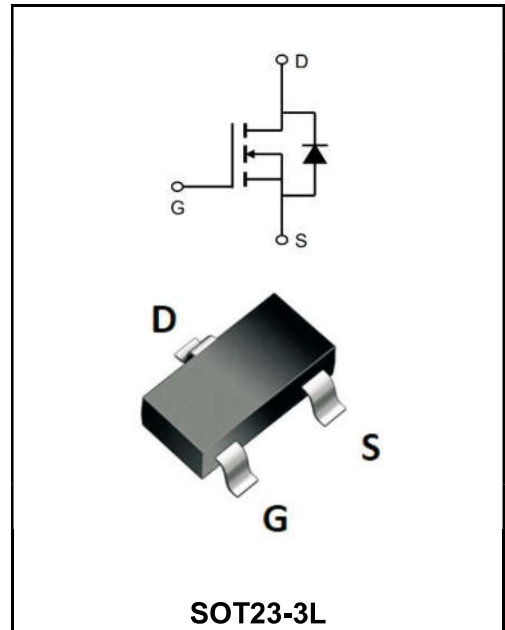
I_D	8A
V_{DSS}	100V
R_{DS(on)-typ}(@V_{GS}=10V)	< 85mΩ
R_{DS(on)-typ}(@V_{GS}=4.5V)	< 120mΩ

Features & Applications

- ◆Advanced high cell density Trench technology
- ◆Super Low Gate Charge
- ◆Green Device Available
- ◆Secondary Synchronous Rectifier
- ◆LED TV Back Light

Mechanical Data

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



Marking Code	
YFW8N10MI	8N10

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(note1)	I_D	8	A
Drain Current-Pulsed (note 1)	I_{DM}	28	
Power Dissipation(note 5)	P_D	450	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55-+150	°C
Thermal Resistance From Junction to Ambient (note 5)	R_{θJA}	300	°C/W

Electrical Characteristics

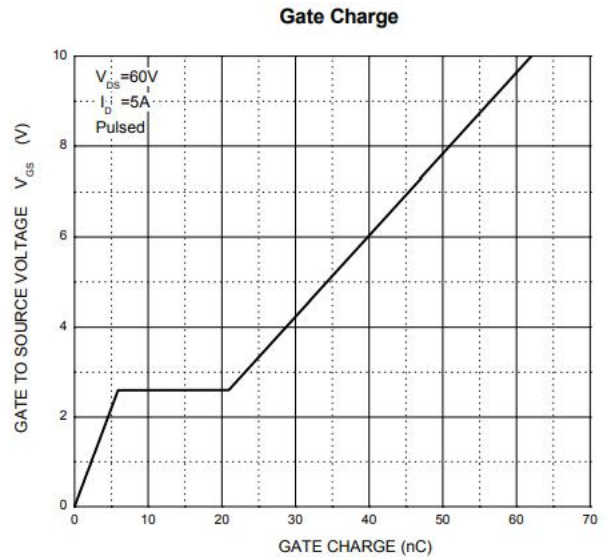
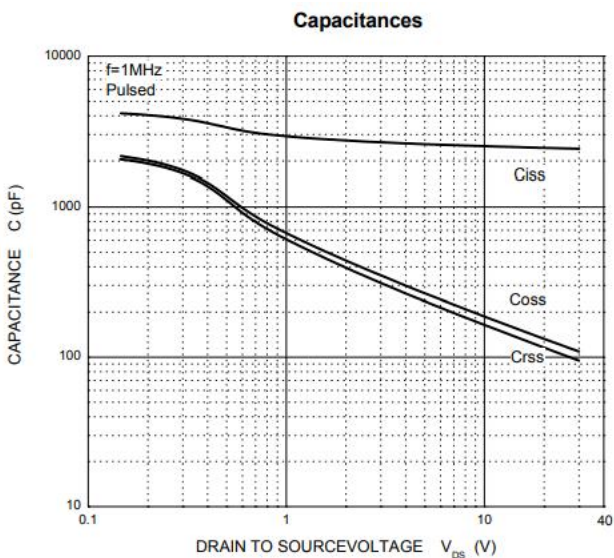
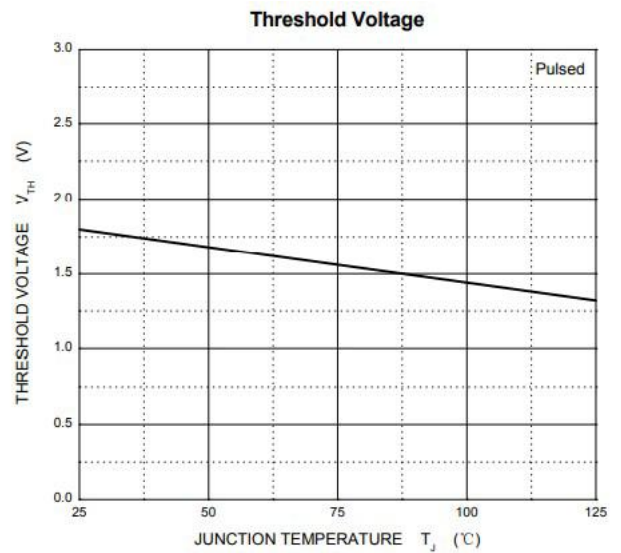
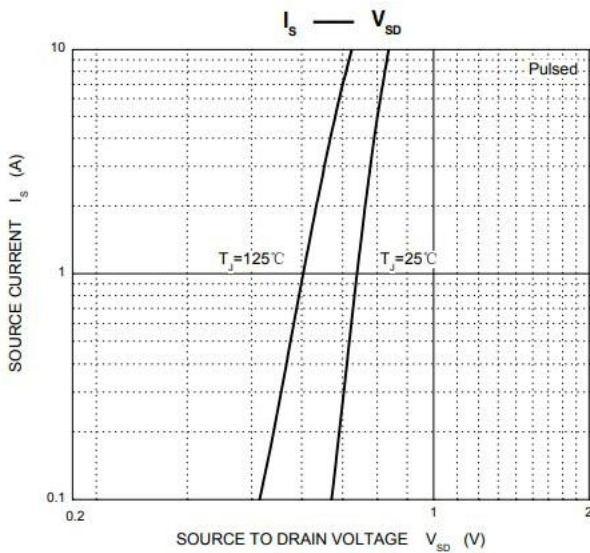
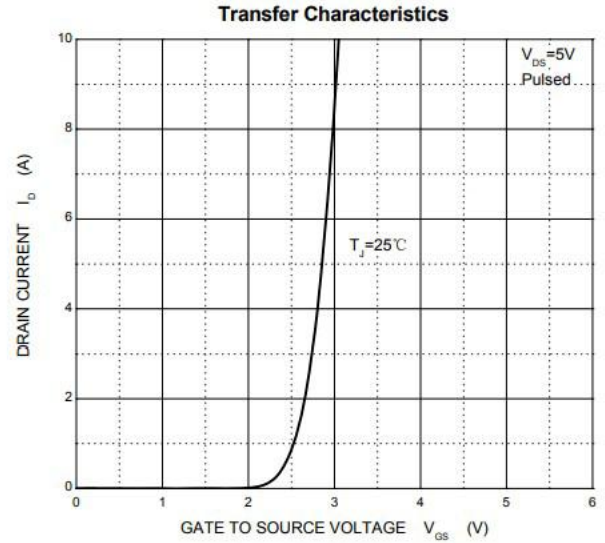
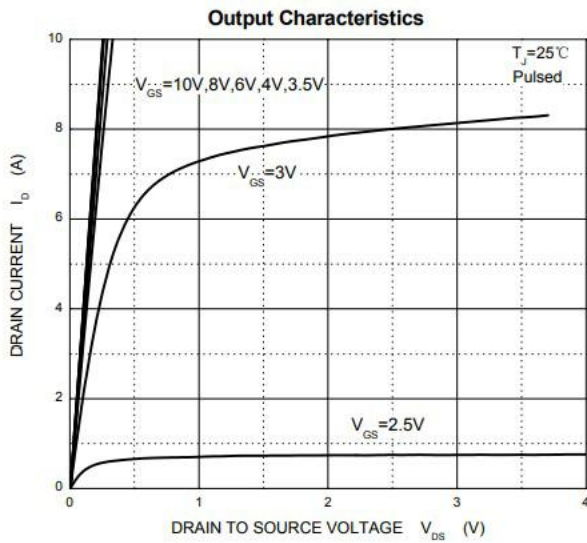
Ratings at 25°C ambient temperature unless otherwise specified.

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
Zero Gate Voltage Drain current	I_{DSS}	$V_{DS}=80V, V_{GS}=0V$	-	-	1	μA
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=7A$			85	m Ω
		$V_{GS}=4.5V, I_D=5A$	-	-	120	m Ω
Forward trans conductance	g_{fs}	$V_{DS}=5V, I_D=7A$	-	22	-	S
Gate-Threshold voltage*	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	-	3.0	V
Input capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$	-	-	4960	pF
Output capacitance	C_{oss}		-	-	300	
Reverse Transfer capacitance	C_{rss}		-	-	268	
Gate resistance	R_g	$V_{DS}=0V, V_{GS}=0V, f=1MHz$	-	2.6	-	Ω
Turn-on Time	$t_{d(on)}$	$V_{GS}=50V, R_L=6.7\Omega, V_{DS}=10V, R_{GEN}=3.3\Omega, I_D=7A$	-	11.4	-	ns
Rise time	t_r		-	27.2	-	
Turn-off Time	$t_{d(off)}$		-	34.7	-	
Fall time	t_f		-	16.6	-	
Body diode voltage	V_{SD}	$I_S=1A, V_{GS}=0V$	-	-	1.2	V

Notes:

1. $T_c=25^\circ C$ Limited only by maximum temperature allowed.
2. $P_w \leq 10\mu s, Duty\ cycle \leq 1\%$.
3. Pulse Test: Pulse Width $\leq 300\mu s, duty\ cycle \leq 2\%$.
4. Guaranteed by design, not subject to production.
5. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 fr-4board with 2oz. Copper, in a still air environment with $T_a=25^\circ C, t \leq 10sec$.

Ratings and Characteristic Curves



Ordering information

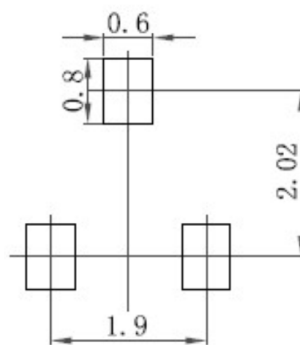
Package	Packing Description	Base Quantity	Packing Quantity
SOT23-3L	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

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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