

**100V N-Channel Enhancement Mode MOSFET**

**MAIN CHARACTERISTICS**

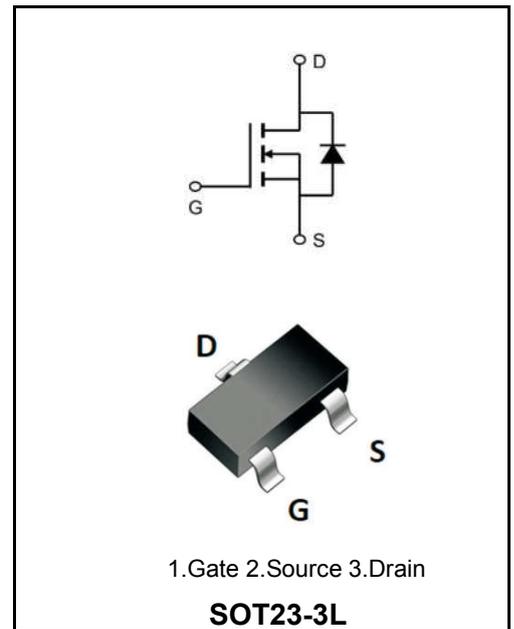
<b>I<sub>D</sub></b>	3A
<b>V<sub>DSS</sub></b>	100V
<b>R<sub>DS(on)-typ(@V<sub>GS</sub>=10V)</sub></b>	<110mΩ

**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.



<b>Marking Code</b>	
G1003A	G1003A

**Maximum Ratings & Thermal Characteristics**

Ratings at 25°C ambient temperature unless otherwise specified.

Parameters	Symbol	Value	Unit
Drain-Source Voltage	<b>V<sub>DS</sub></b>	100	<b>V</b>
Gate-Source Voltage	<b>V<sub>GS</sub></b>	±20	<b>V</b>
Continuous Drain Current	<b>I<sub>D</sub></b>	3.0	<b>A</b>
Pulsed Drain Current(note1)	<b>I<sub>DM</sub></b>	20	
Power Dissipation	<b>P<sub>D</sub></b>	400	<b>mW</b>
Junction Temperature	<b>T<sub>j</sub></b>	150	<b>°C</b>
Storage Temperature	<b>T<sub>stg</sub></b>	-55-+150	<b>°C</b>
Thermal Resistance From Junction to Ambient (note 2)	<b>R<sub>θJA</sub></b>	312.5	<b>°C/W</b>

**Electrical Characteristics**

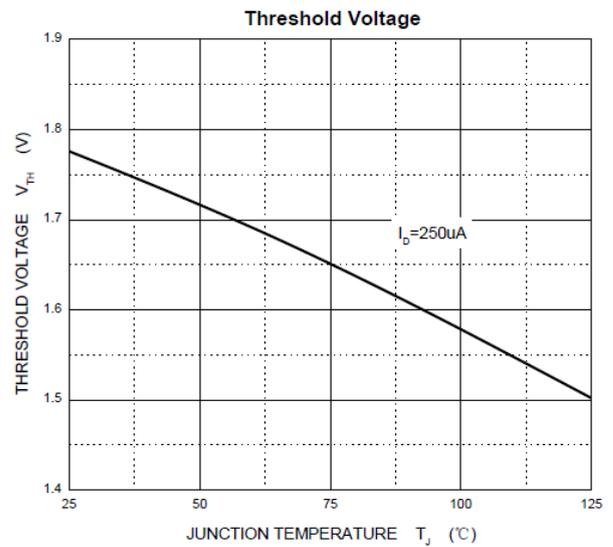
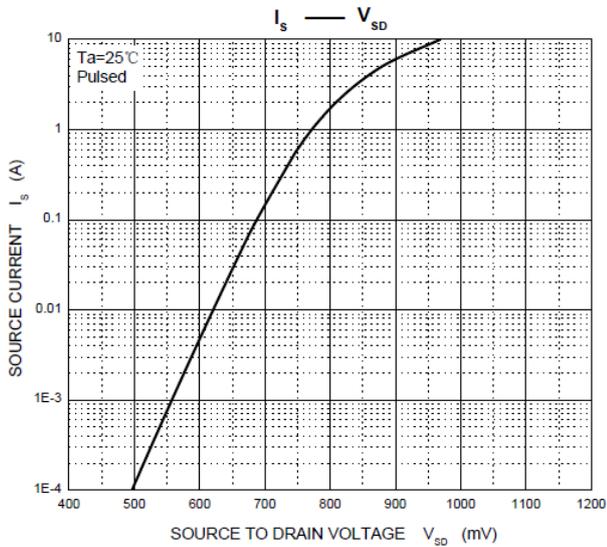
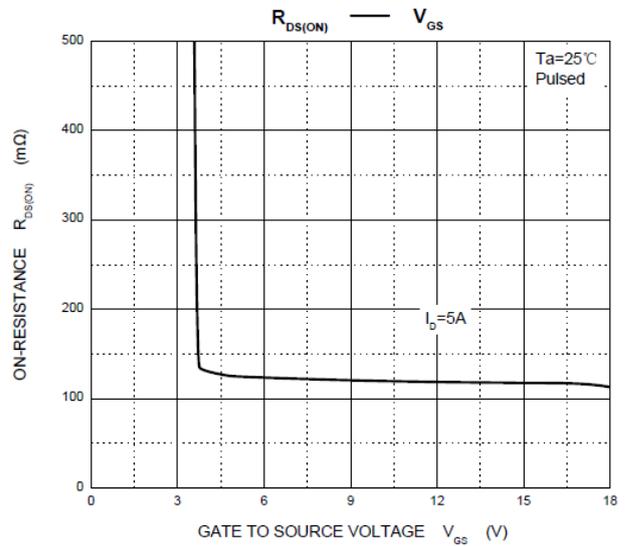
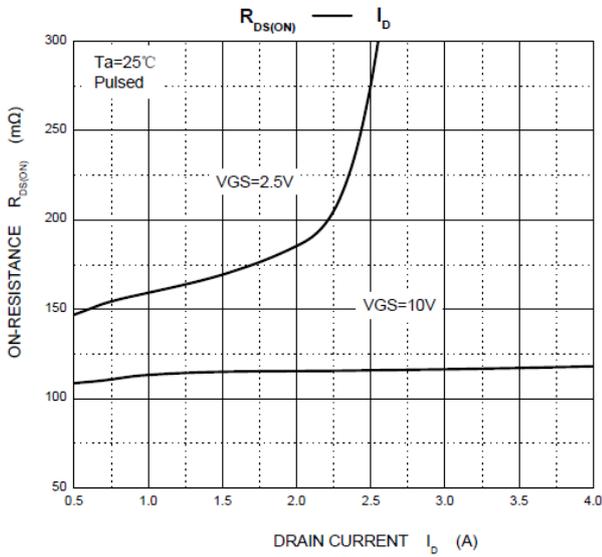
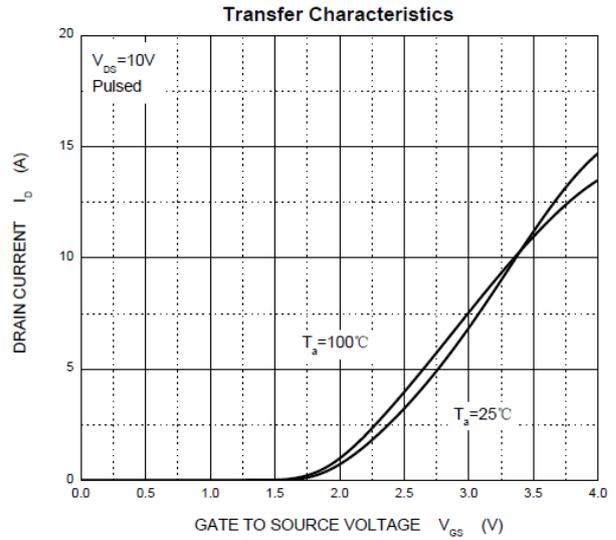
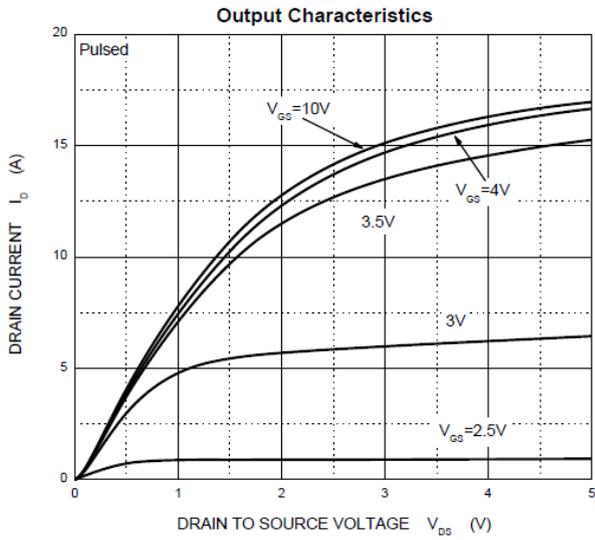
Ratings at 25°C ambient temperature unless otherwise specified.

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	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	$\pm 100$	nA
Zero Gate Voltage Drain current	$I_{DSS}$	$V_{DS}=80V, V_{GS}=0V$	-	-	1	$\mu A$
Drain-Source On-Resistance(note3)	$R_{DS(ON)}$	$V_{GS}=10V, I_D=3A$	-	-	110	m $\Omega$
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**

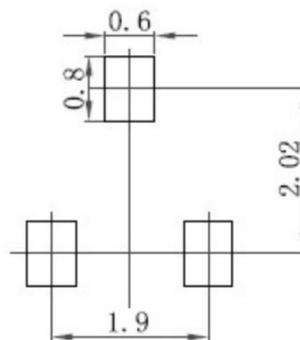
Package	Packing Description	Base Quantity	Packing Quantity
SOT23-3L	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

**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
a	0.95		37.4	
a1	1.80	2.00	71	78
L	0.30	0.066	12	26
Θ	8°			

**The recommended mounting pad size**



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