

**SE6302**  
**N-Channel 60V(D-S) MOSFET**

**GENERAL DESCRIPTION**

The SE6302 is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other battery powered circuits where high-side switching and low in-line power loss are needed in a very small outline surface mount package.

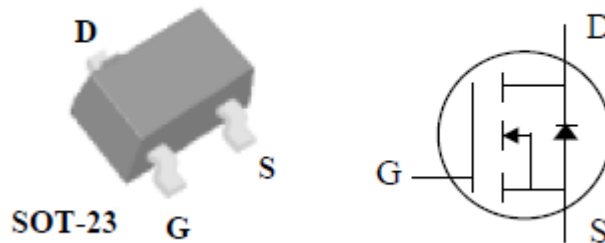
**FEATURES**

- $R_{DS(ON)} \cong 72m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \cong 95m\Omega @ V_{GS}=4.5V$
- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- Capable doing Cu wire bonding

**APPLICATIONS**

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- Load Switch
- DSC

**Pin configurations**



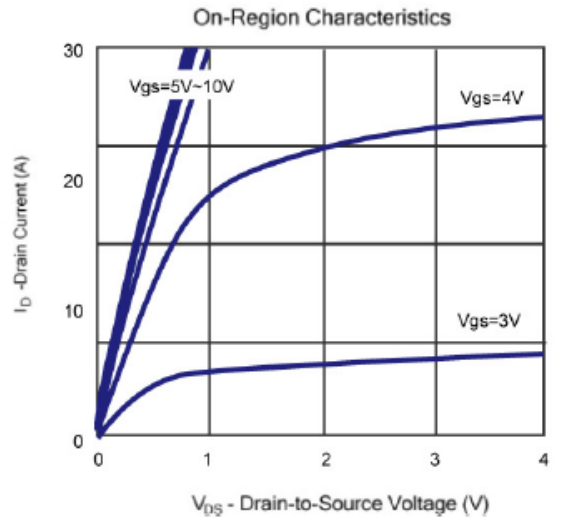
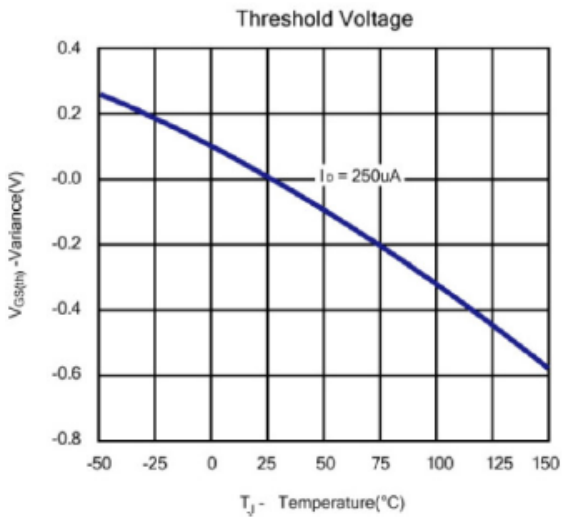
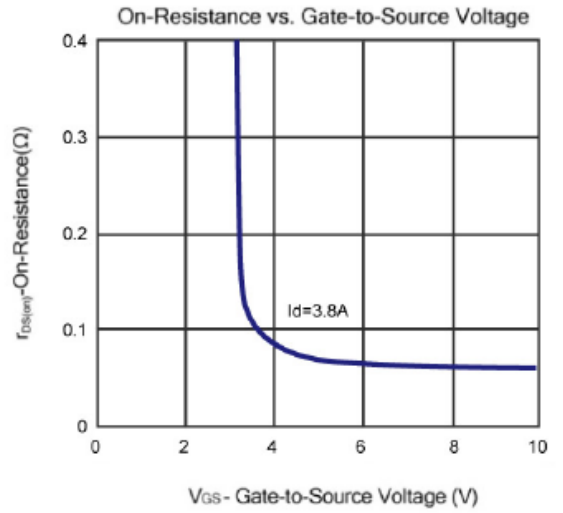
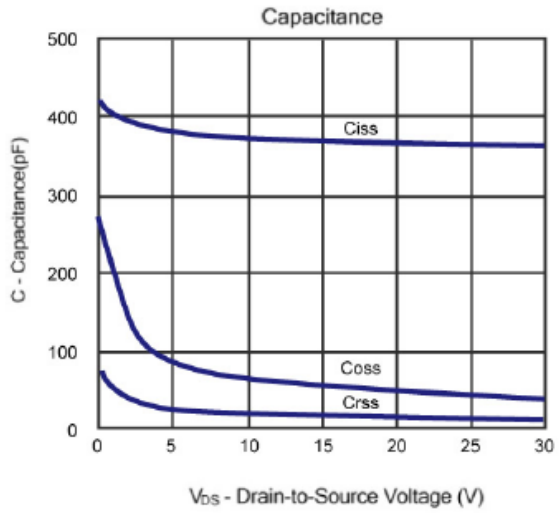
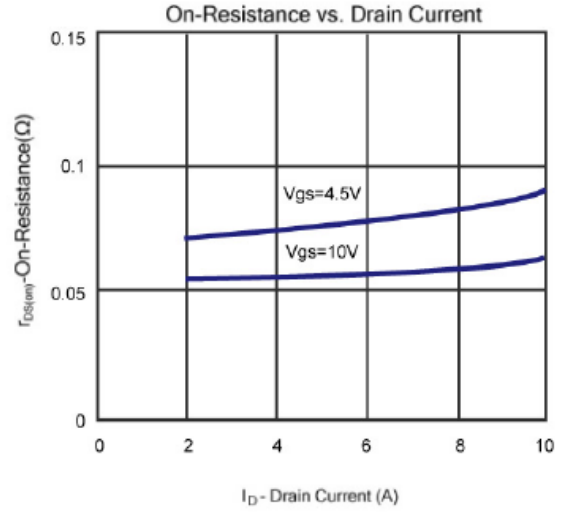
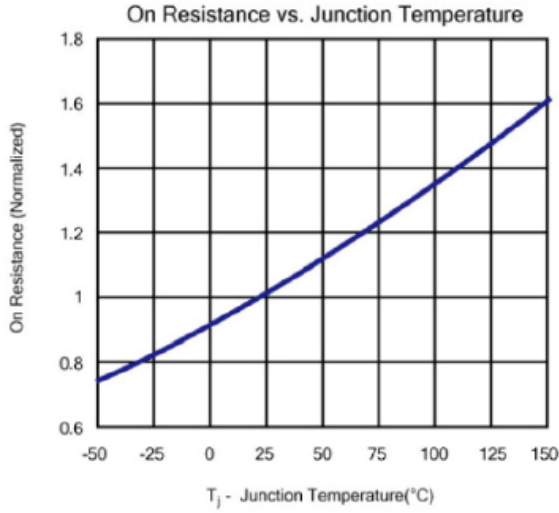
**Absolute Maximum Ratings**

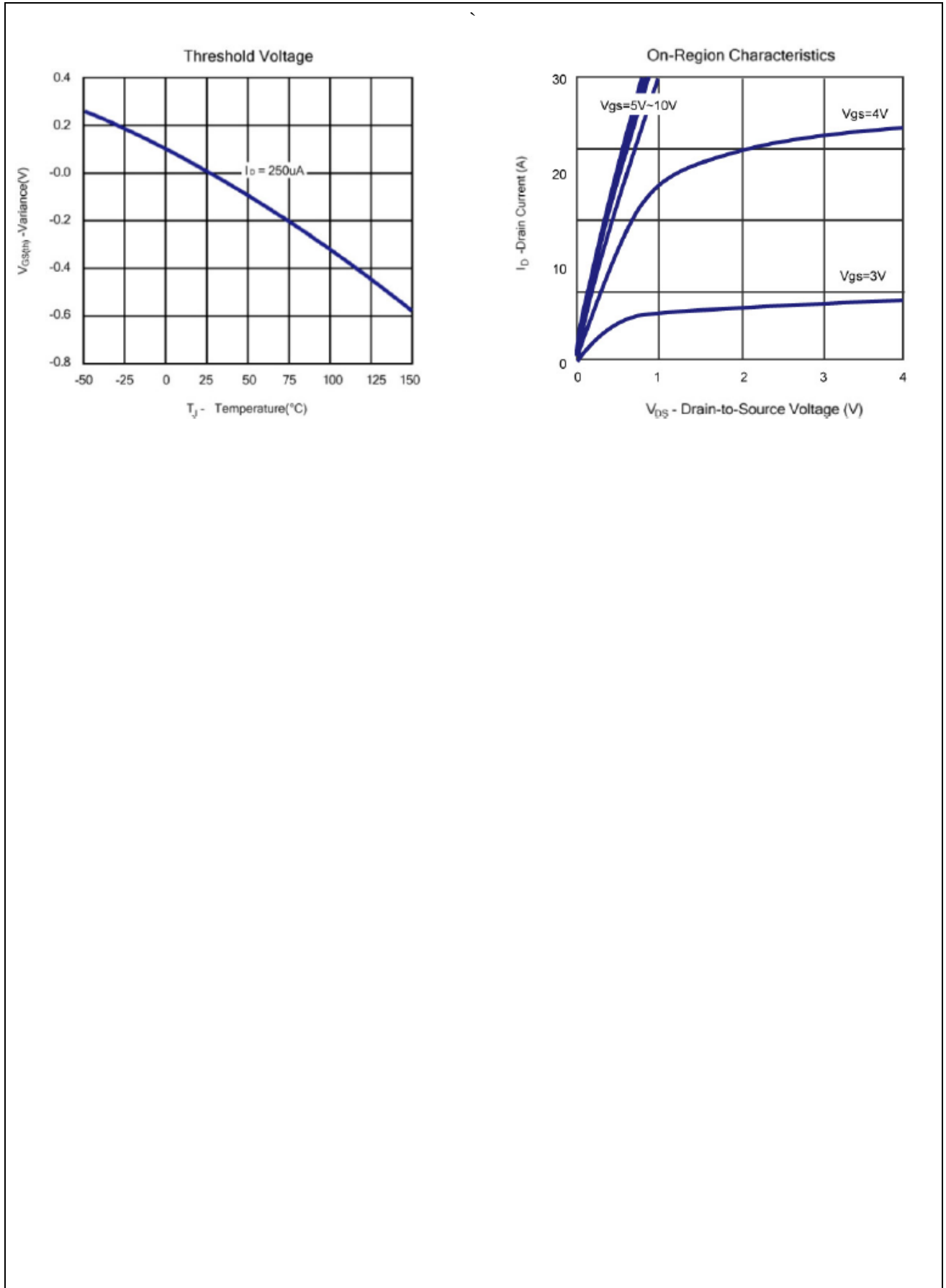
Parameter	Symbol	Limit	Units
Drain-Source Voltage	$V_{DSS}$	60	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V

# SE6302

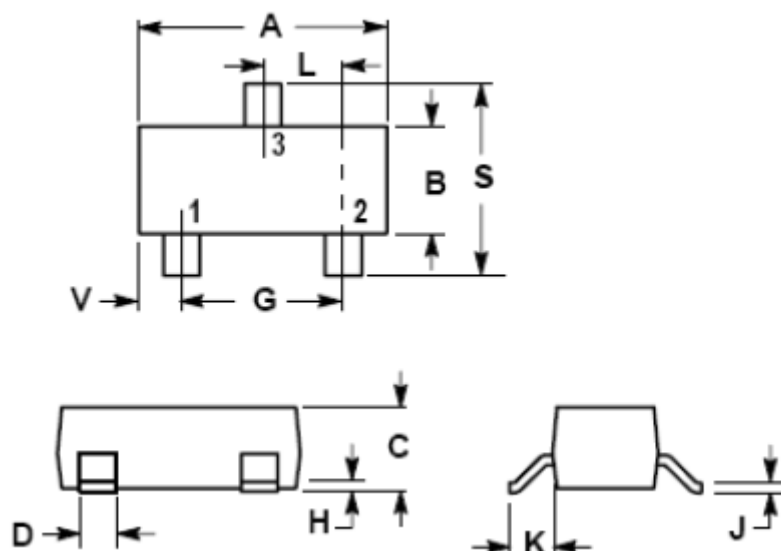
Electrical Characteristics (T <sub>J</sub> =25°C unless otherwise noted)						
Symbol	Parameter	Limit	Min	Typ	Max	Units
<b>STATIC</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0, I <sub>D</sub> =250μA	60			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1		3	V
I <sub>GSS</sub>	Gate Body Leakage	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =60V, V <sub>GS</sub> =0V			1	μA
R <sub>DS(ON)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> = 3.8A		60	72	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> = 3.0A		73	95	
VSD	Diode Forward Voltage	I <sub>S</sub> =2.0A, V <sub>GS</sub> =0V		0.8	1.2	V
<b>DYNAMIC</b>						
Qg	Total Gate Charge(10V)	V <sub>DS</sub> =30V, V <sub>GS</sub> =10V, I <sub>D</sub> =3.8A		12		nC
Qg	Total Gate Charge(4.5V)	V <sub>DS</sub> =30V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =3.8A		6		
Qgs	Gate-Source Charge			2.5		nC
Qgd	Gate-Drain Charge			2.5		
Ciss	Input capacitance	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz		370		pF
Coss	Output Capacitance			48		
Crss	Reverse Transfer Capacitance			15		
td(on)	Turn-On Delay Time	V <sub>DD</sub> =20V, R <sub>L</sub> =20Ω I <sub>D</sub> =1A, V <sub>GEN</sub> =10V R <sub>G</sub> =1Ω		9		ns
tr	Turn-On Rise Time			12		
td(off)	Turn-Off Delay Time			30		
tf	Turn-Off Fall Time			3		

# Typical Characteristics





## SOT-23 Package Dimensions



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

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