

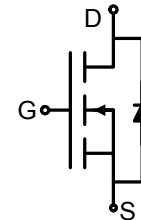
## N-Channel Power MOSFET

### General Features

- $V_{DS} = 20V, I_D = 5A$   
 $R_{DS(ON)} < 35m\Omega @ V_{GS}=2.5V$   
 $R_{DS(ON)} < 25m\Omega @ V_{GS}=4.5V$
- High power and current handling capability
- Lead free product is acquired
- Surface mount package

### Application

- Battery protection
- Load switch
- Power management



Schematic diagram



SOT-23 top view

### MAXIMUM RATINGS

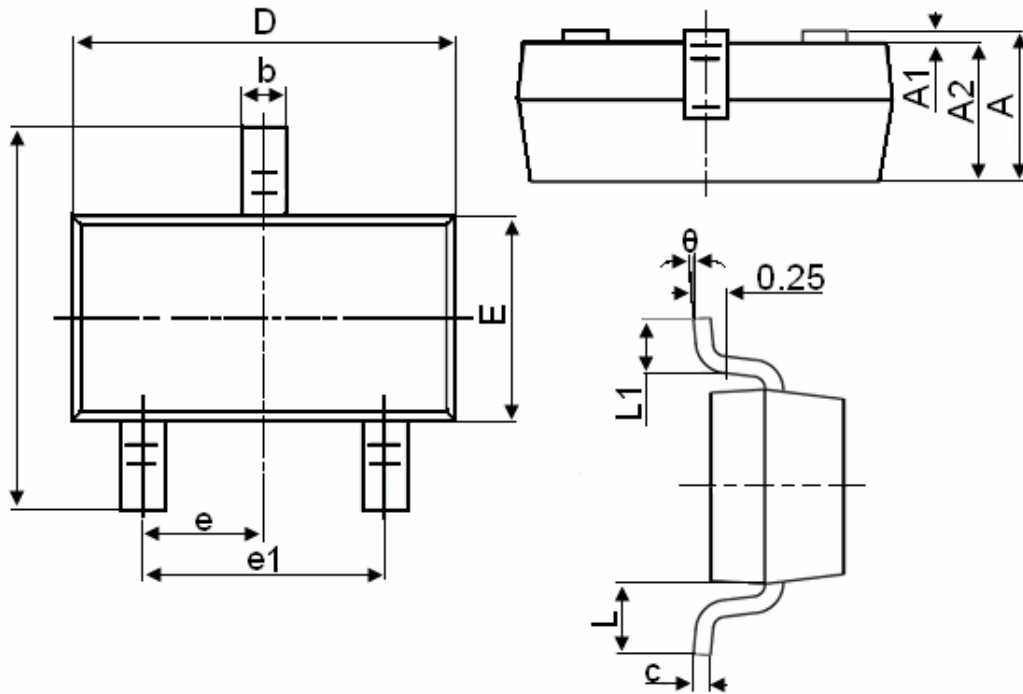
Characteristic	Symbol	Max	Unit
Drain-Source Voltage	$BV_{DSS}$	20	V
Gate- Source Voltage	$V_{GS}$	$\pm 8$	V
Drain Current (continuous)	$I_D$	5	A
Drain Current (pulsed)	$I_{DM}$	18	A
Total Device Dissipation $T_A=25^\circ C$	$P_D$	1250	mW
Junction	$T_J$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55to+150	$^\circ C$

**ELECTRICAL CHARACTERISTICS**

 (T<sub>A</sub>=25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage (I <sub>D</sub> = 250uA, V <sub>GS</sub> =0V)	BV <sub>DSS</sub>	20	—	—	V
Gate Threshold Voltage (I <sub>D</sub> =250uA, V <sub>GS</sub> = V <sub>DS</sub> )	V <sub>GS(th)</sub>	0.45	—	1.2	V
Diode Forward Voltage Drop (I <sub>S</sub> =0.75A, V <sub>GS</sub> =0V)	V <sub>SD</sub>	—	—	1.5	V
Zero Gate Voltage Drain Current (V <sub>GS</sub> =0V, V <sub>DS</sub> = 16V) (V <sub>GS</sub> =0V, V <sub>DS</sub> = 16V, T <sub>A</sub> =55°C)	I <sub>DSS</sub>	—	—	1 10	uA
Gate Body Leakage (V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V)	I <sub>GSS</sub>	—	—	±100	nA
Static Drain-Source On-State Resistance (I <sub>D</sub> = 5A, V <sub>GS</sub> = 4.5V)	R <sub>DS(ON)</sub>	—	23	25	mΩ
Static Drain-Source On-State Resistance (I <sub>D</sub> = 2A, V <sub>GS</sub> = 2.5V)	R <sub>DS(ON)</sub>	—	32	35	mΩ
Static Drain-Source On-State Resistance (I <sub>D</sub> = 1A, V <sub>GS</sub> = 1.8V)	R <sub>DS(ON)</sub>	—	45	50	mΩ
Input Capacitance (V <sub>GS</sub> =0V, V <sub>DS</sub> = 10V, f=1MHz)	C <sub>ISS</sub>	—	650	—	pF
Output Capacitance (V <sub>GS</sub> =0V, V <sub>DS</sub> = 10V, f=1MHz)	C <sub>OSS</sub>	—	120	—	pF
Turn-ON Time (V <sub>DS</sub> = 10V, I <sub>D</sub> = 3A, R <sub>GEN</sub> =6Ω)	t <sub>(on)</sub>	—	20	—	ns
Turn-OFF Time (V <sub>DS</sub> = 10V, I <sub>D</sub> = 3A, R <sub>GEN</sub> =6Ω)	t <sub>(off)</sub>	—	60	—	ns

Pulse Width ≤ 300 μs; Duty Cycle ≤ 2.0%

**SOT-23 Package Information**


Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
$\theta$	0°	8°