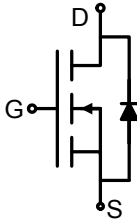





## N-Channel Power MOSFET

<p><b>General Features</b></p> <ul style="list-style-type: none"> <li>● <math>V_{DS} = 60V, I_D = 0.115A</math> <math>R_{DS(ON)} &lt; 7.5 \Omega @ V_{GS} = 5V</math></li> <li>● High power and current handling capability</li> <li>● Lead free product is acquired</li> <li>● Surface mount package</li> </ul> <p><b>Application</b></p> <ul style="list-style-type: none"> <li>● Battery protection</li> <li>● Load switch</li> <li>● Power management</li> </ul>	 <p><b>Schematic diagram</b></p>  <p><b>SOT-23 top view</b></p>
--	---

### ■ MAXIMUM RATINGS

Characteristic	Symbol	Max	Unit
Drain-Source Voltage	$BV_{DSS}$	60	V
Gate- Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current (continuous)	$I_{DR}$	115	mA
Drain Current (pulsed)	$I_{DRM}$	800	mA

### ■ THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation	$P_D$	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	$T_J, T_{stg}$	150°C, -55 to +150°C	

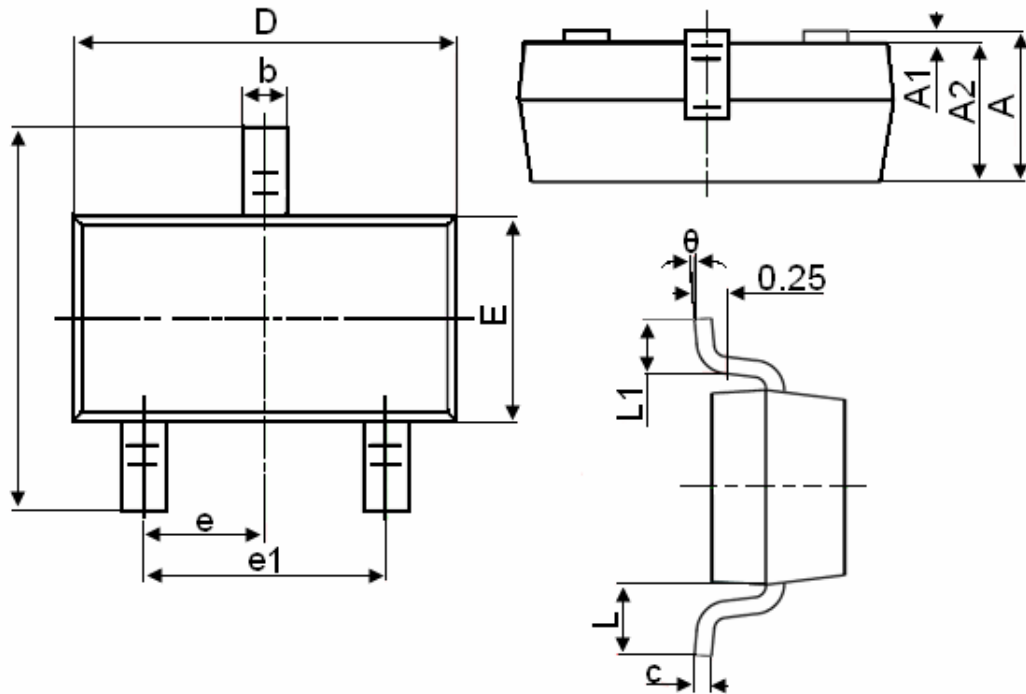
**ELECTRICAL CHARACTERISTICS**

 ( $T_A=25^\circ\text{C}$  unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage ( $I_D=250\mu\text{A}, V_{GS}=0\text{V}$ )	$BV_{DSS}$	60	—	—	V
Gate Threshold Voltage ( $I_D=250\mu\text{A}, V_{GS}=V_{DS}$ )	$V_{GS(th)}$	1.0	—	2.5	V
Drain-Source On Voltage ( $I_D=50\text{mA}, V_{GS}=5\text{V}$ ) ( $I_D=500\text{mA}, V_{GS}=10\text{V}$ )	$V_{DS(ON)}$	—	—	0.375 3.75	V
Diode Forward Voltage Drop ( $I_{SD}=200\text{mA}, V_{GS}=0\text{V}$ )	$V_{SD}$	—	—	1.5	V
Zero Gate Voltage Drain Current ( $V_{GS}=0\text{V}, V_{DS}=BV_{DSS}$ ) ( $V_{GS}=0\text{V}, V_{DS}=0.8BV_{DSS}, T_A=125^\circ\text{C}$ )	$I_{DSS}$	—	—	1 500	$\mu\text{A}$
Gate Body Leakage ( $V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$ )	$I_{GSS}$	—	—	$\pm 100$	nA
Static Drain-Source On-State Resistance ( $I_D=50\text{mA}, V_{GS}=5\text{V}$ ) ( $I_D=500\text{mA}, V_{GS}=10\text{V}$ )	$R_{DS(ON)}$	—	—	7.5 7.5	$\Omega$
Input Capacitance ( $V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1\text{MHz}$ )	$C_{ISS}$	—	—	50	pF
Common Source Output Capacitance ( $V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1\text{MHz}$ )	$C_{OSS}$	—	—	25	pF
Turn-ON Time ( $V_{DS}=30\text{V}, I_D=200\text{mA}, R_{GEN}=25\Omega$ )	$t_{(on)}$	—	—	20	ns
Turn-OFF Time ( $V_{DS}=30\text{V}, I_D=200\text{mA}, R_{GEN}=25\Omega$ )	$t_{(off)}$	—	—	40	ns
Reverse Recovery Time ( $I_{SD}=800\text{mA}, V_{GS}=0\text{V}$ )	$t_{rr}$	—	400	—	ns

- FR-5=1.0×0.75×0.062in.
- Alumina=0.4×0.3×0.024in.99.5%alumina.
- Pulse Width≤300  $\mu\text{s}$ ; 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°

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- [View 2N7002 on WIN SOURCE](#)
- [ShenZhen SikorMicro Semicon Co. Ltd Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management