

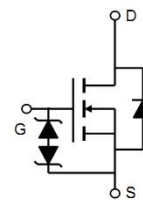
## N-Channel Power MOSFET

### General Features

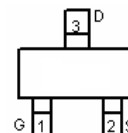
- $V_{DS} = 60V, I_D = 300mA$   
 $R_{DS(ON)} < 3\Omega @ V_{GS}=10V$   
 $R_{DS(ON)} < 3.5\Omega @ V_{GS}=5V$
- High power and current handling capability
- Lead free product is acquired
- Surface mount package

### Application

- PWM applications
- Load switch
- Power management



Schematic diagram



Marking and Pin Assignment



SOT-23 top view

### MAXIMUM RATINGS

Characteristic	Symbol	Max	Unit
Drain-Source Voltage	$BV_{DSS}$	60	V
Gate- Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current (continuous)	$I_{DR}$	300	mA
Drain Current (pulsed)	$I_{DRM}$	500	mA

### THERMAL CHARACTERISTICS

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

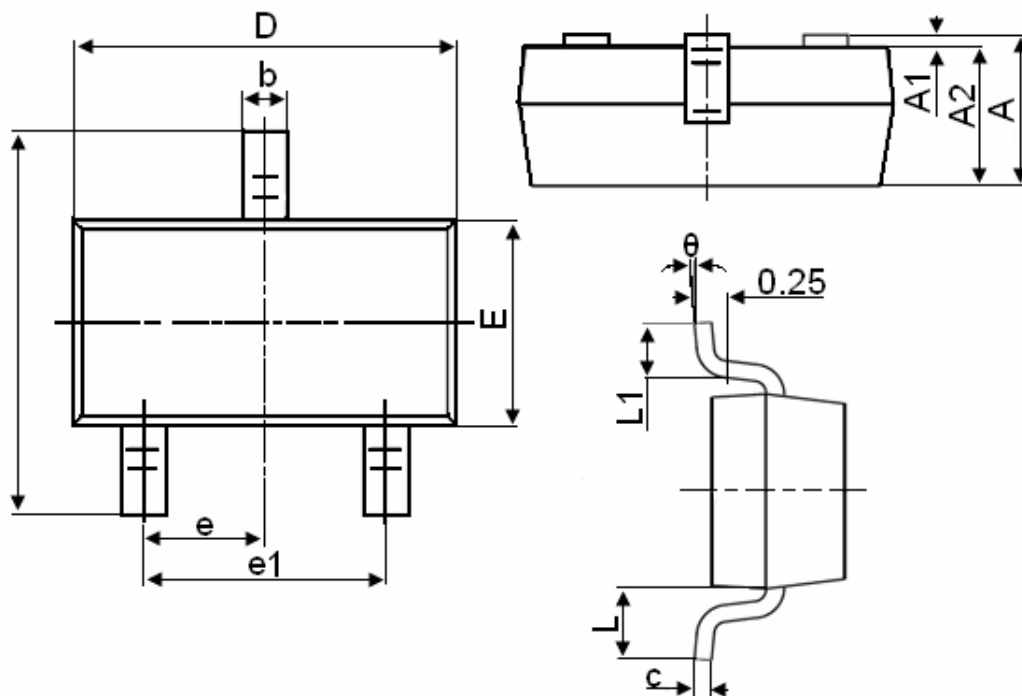
**ELECTRICAL CHARACTERISTICS**

 (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>	60	—	—	V
Gate Threshold Voltage (I <sub>D</sub> =250uA, V <sub>GS</sub> = V <sub>DS</sub> )	V <sub>GS(th)</sub>	1.0	—	2.5	V
Drain-Source On Voltage (I <sub>D</sub> =50mA, V <sub>GS</sub> =5V) (I <sub>D</sub> =500mA, V <sub>GS</sub> =10V)	V <sub>DS(ON)</sub>	—	—	0.375 3.75	V
Diode Forward Voltage Drop (I <sub>SD</sub> =200mA, 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> = BV <sub>DSS</sub> )	I <sub>DSS</sub>	—	—	1	uA
Gate Body Leakage (V <sub>GS</sub> =±10V, V <sub>DS</sub> =0V) (V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V)	I <sub>GSS</sub>	—	—	±1 ±10	uA
Static Drain-Source On-State Resistance (I <sub>D</sub> =500mA, V <sub>GS</sub> =10V) (I <sub>D</sub> =50mA, V <sub>GS</sub> =5V)	R <sub>DS(ON)</sub>	—	—	3 3.5	Ω
ESD Rating	ESD	1000V HBM			

1. FR-5=1.0×0.75×0.062in.
2. Alumina=0.4×0.3×0.024in.99.5%alumina.
3. Pulse Width≤300 μ 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°