

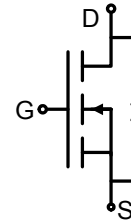
N-Channel Power MOSFET

General Features

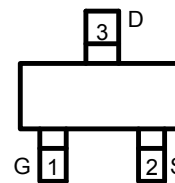
- $V_{DS} = 20V, I_D = 4.2A$
 $R_{DS(ON)} < 40m\Omega @ V_{GS}=2.5V$
 $R_{DS(ON)} < 30m\Omega @ V_{GS}=4.5V$
- High power and current handling capability
- Lead free product is acquired
- Surface mount package

Application

- PWM applications
- Load switch
- Power management



Schematic diagram



Marking and pin assignment



SOT-23 top view

■ MAXIMUM RATINGS

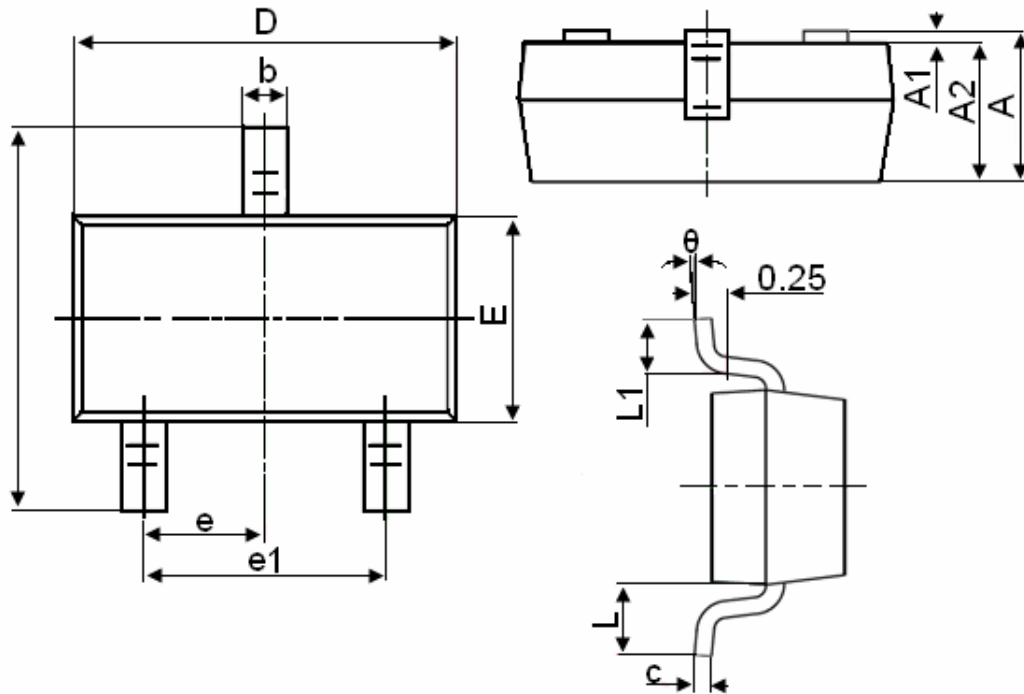
Characteristic	Symbol	Max	Unit
Drain-Source Voltage	BV_{DSS}	20	V
Gate- Source Voltage	V_{GS}	± 8	V
Drain Current (continuous)	I_D	4.2	A
Drain Current (pulsed)	I_{DM}	16	A
Total Device Dissipation $T_A=25^\circ C$	P_D	1200	mW
Junction	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-55to+150	$^\circ C$

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}	20	—	—	V
Gate Threshold Voltage ($I_D = 250\mu\text{A}, V_{GS} = V_{DS}$)	$V_{GS(th)}$	0.45	—	1.2	V
Diode Forward Voltage Drop ($I_S = 0.75\text{A}, V_{GS}=0\text{V}$)	V_{SD}	—	—	1.3	V
Zero Gate Voltage Drain Current ($V_{GS}=0\text{V}, V_{DS} = 16\text{V}$) ($V_{GS}=0\text{V}, V_{DS} = 16\text{V}, T_A=55^{\circ}\text{C}$)	I_{DSS}	—	—	1 10	μA
Gate Body Leakage ($V_{GS}=\pm 8\text{V}, V_{DS}=0\text{V}$)	I_{GSS}	—	—	± 100	nA
Static Drain-Source On-State Resistance ($I_D=4.2\text{A}, V_{GS}=4.5\text{V}$) ($I_D=2\text{A}, V_{GS}=2.5\text{V}$) ($I_D=1\text{A}, V_{GS}=1.8\text{V}$)	$R_{DS(ON)}$	—	25 30 50	30 40 60	$\text{m}\Omega$
Input Capacitance ($V_{GS}=0\text{V}, V_{DS} = 10\text{V}, f=1\text{MHz}$)	C_{ISS}	—	—	650	pF
Common Source Output Capacitance ($V_{GS}=0\text{V}, V_{DS} = 10\text{V}, f=1\text{MHz}$)	C_{OSS}	—	—	150	pF
Turn-ON Time ($V_{DS} = 10\text{V}, I_D = 3.5\text{A}, R_{GEN}=10\Omega$)	$t_{(on)}$	—	—	20	ns
Turn-OFF Time ($V_{DS} = 10\text{V}, I_D = 3.5\text{A}, R_{GEN}=10\Omega$)	$t_{(off)}$	—	—	60	ns

Pulse Width $\leq 300\mu\text{s}$; Duty Cycle $\leq 2.0\%$

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
θ	0°	8°