

N-Channel Power MOSFET

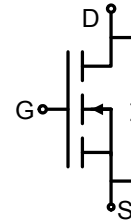
General Features

- $V_{DS} = 20V, I_D = 4.2A$
 $R_{DS(ON)} < 40m\Omega @ V_{GS}=2.5V$
 $R_{DS(ON)} < 30m\Omega @ V_{GS}=4.5V$

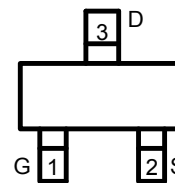
- High power and current handling capability
- Lead free product is acquired
- Surface mount package

Application

- PWM applications
- Load switch
- Power management



Schematic diagram



Marking and pin assignment



SOT-23 top view

■ MAXIMUM RATINGS

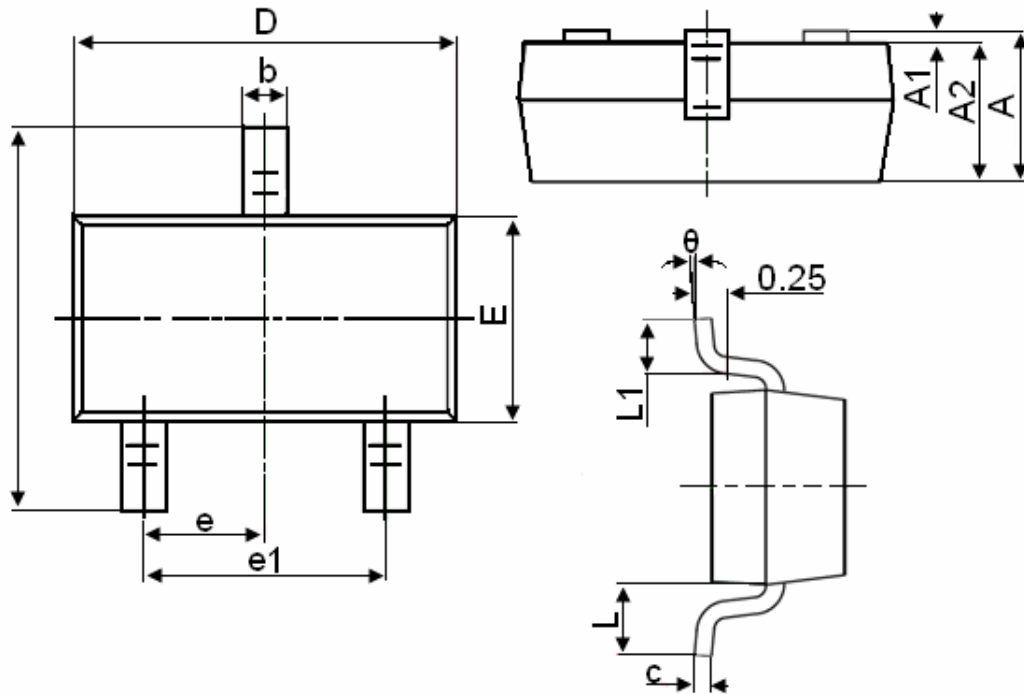
Characteristic	Symbol	Max	Unit
Drain-Source Voltage	BV_{DSS}	20	V
Gate- Source Voltage	V_{GS}	± 8	V
Drain Current (continuous)	I_D	4.2	A
Drain Current (pulsed)	I_{DM}	16	A
Total Device Dissipation $T_A=25^\circ C$	P_D	1200	mW
Junction	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-55to+150	$^\circ C$

ELECTRICAL CHARACTERISTICS

 (T_A=25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage (I _D = 250uA, V _{GS} =0V)	BV _{DSS}	20	—	—	V
Gate Threshold Voltage (I _D = 250uA, V _{GS} = V _{DS})	V _{GS(th)}	0.45	—	1.2	V
Diode Forward Voltage Drop (I _S = 0.75A, V _{GS} =0V)	V _{SD}	—	—	1.3	V
Zero Gate Voltage Drain Current (V _{GS} =0V, V _{DS} = 16V) (V _{GS} =0V, V _{DS} = 16V, T _A =55°C)	I _{DSS}	—	—	1 10	uA
Gate Body Leakage (V _{GS} =±8V, V _{DS} =0V)	I _{GSS}	—	—	±100	nA
Static Drain-Source On-State Resistance (I _D =4.2A, V _{GS} =4.5V) (I _D =2A, V _{GS} =2.5V) (I _D =1A, V _{GS} =1.8V)	R _{DS(ON)}	—	25 30 50	30 40 60	mΩ
Input Capacitance (V _{GS} =0V, V _{DS} = 10V, f=1MHz)	C _{ISS}	—	—	650	pF
Common Source Output Capacitance (V _{GS} =0V, V _{DS} = 10V, f=1MHz)	C _{OSS}	—	—	150	pF
Turn-ON Time (V _{DS} = 10V, I _D = 3.5A, R _{GEN} =10Ω)	t _(on)	—	—	20	ns
Turn-OFF Time (V _{DS} = 10V, I _D = 3.5A, R _{GEN} =10Ω)	t _(off)	—	—	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
θ	0°	8°

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