

Product Summary

- $V_{DS} = -20V, I_D = -2A$
- $R_{DS(ON)} < 70m\Omega @ V_{GS} = -4.5V$
- $R_{DS(ON)} < 110m\Omega @ V_{GS} = -2.5V$

Application

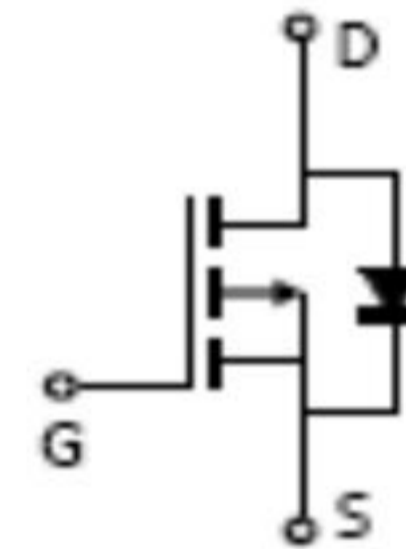
- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

Package and Pin Configuration

SOT-23



Circuit diagram



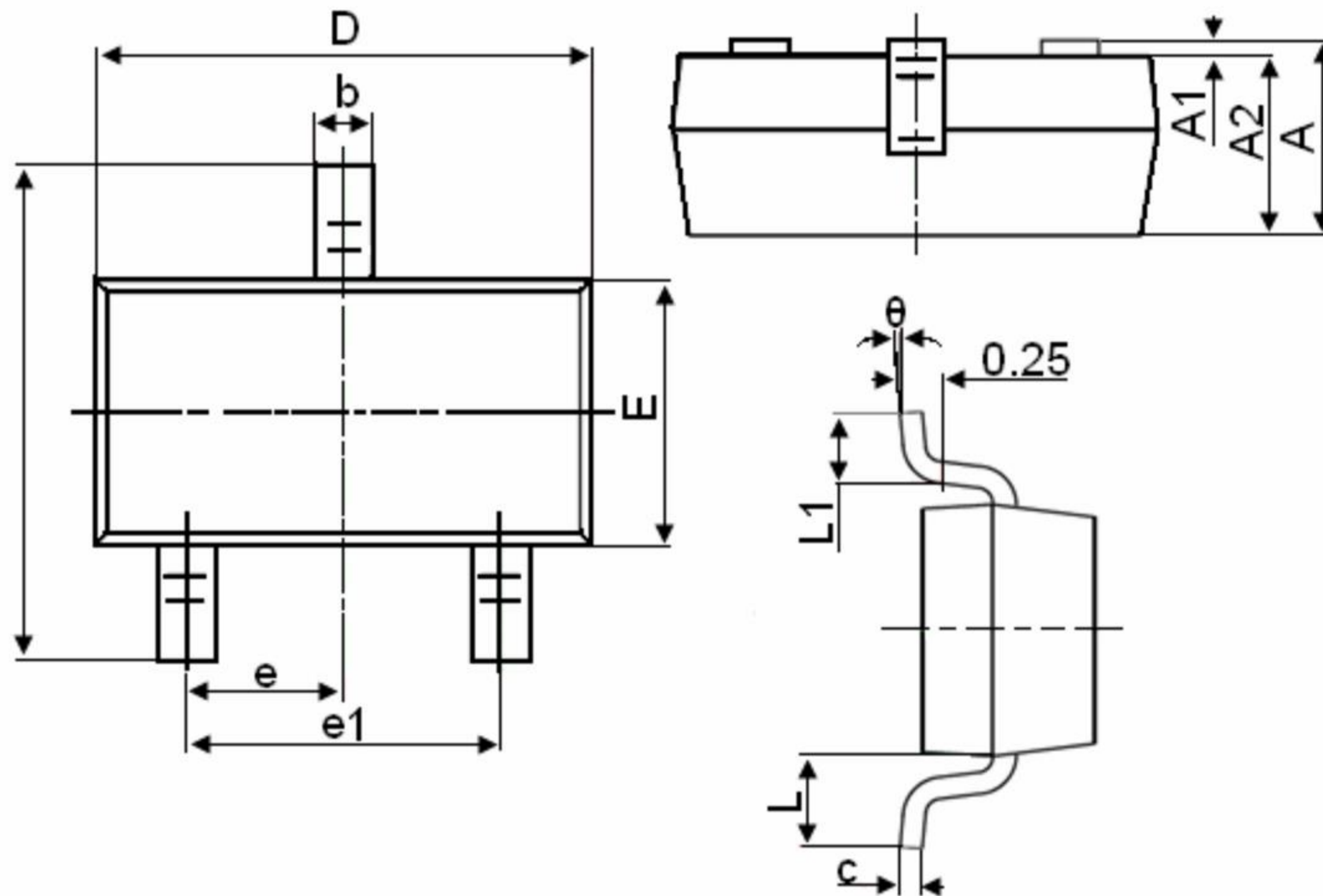
Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	-20	V
Gate-Source Voltage	VGS	±8	
Continuous Drain Current	ID	-2	A
Pulsed Diode Current	IDM	-10	
Power Dissipation	PD	1.1	W
Thermal Resistance from Junction to Ambient ($t \leq 10s$)	RθJA	250	°C/W
Operating Junction	TJ	150	°C
Storage Temperature	TSTG	-55~+150	°C

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID = -250 μ A	-20			V
Gate-source threshold voltage	VGS(th)	VDS = VGS, ID = -250 μ A	-0.4		-1.5	V
Gate-source leakage	IGSS	VDS = 0V, VGS = \pm 8V			\pm 100	nA
Zero gate voltage drain current	IDSS	VDS = -16V, VGS = 0V			-1	μ A
Drain-source on-state resistancea	RDS(on)	VGS = -4.5V, ID = -2A		52	70	m Ω
		VGS = -2.5V, ID = -1.7A		78	110	m Ω
		VGS = -1.8V, ID = -1.2A			210	m Ω
Forward transconductancea	gfs	VDS = -4.5V, ID = -2A		8		S
Diode forward voltage	VSD	IS = -1A, VGS = 0V		-0.8	-1.2	V
Dynamic						
Input capacitance	Ciss	VDS = -10V, VGS = 0V, f = 1MHz		600		pF
Output capacitance	Coss			175		pF
Reverse transfer capacitanceb	Crss			80		pF
Total gate charge	Qg	VDS = -10V, VGS = -4.5V, ID = -2A		8		nC
Gate-source charge	Qgs			1.3		nC
Gate-drain charge	Qgd			2.2		nC
Gate resistance	Rg	f = 1MHz	0.5		3.2	Ω
Switchingbtr						
Turn-on delay time	td(on)	VDS = -10V RL = 3.5 Ω , ID \approx -1A, VGEN = -4.5V, Rg = 3 Ω		6		ns
Rise time	tr			9		ns
Turn-off delay time	td(off)			31		ns
Fall time	tf			26		ns
Drain-source body diode characteristicstr						
Continuous Source-Drain Diode Current	IS	Tc = 25 $^\circ$ C			-1.2	A
Pulsed Diode forward Curren	ISM				-10	A

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°