

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

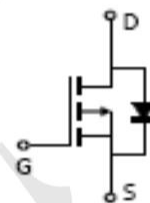
- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

Package and Pin Configuration

SOT-23



Circuit diagram



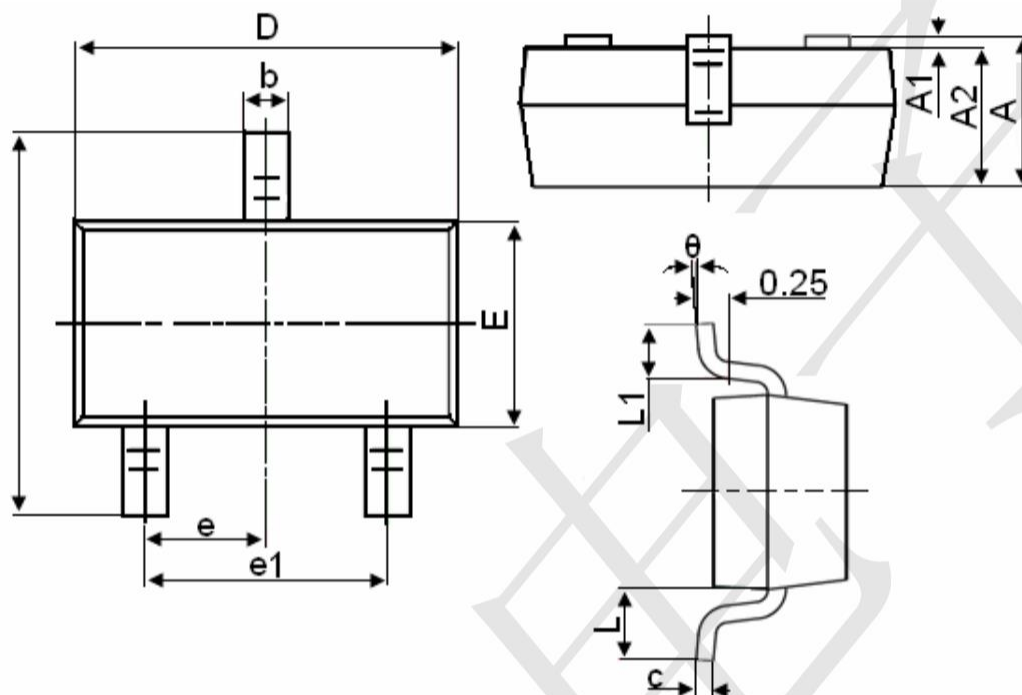
Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	-20	V
Gate-Source Voltage	VGS	± 8	
Continuous Drain Current	ID	-1.6	A
Pulsed Diode Current	IDM	-10	
Power Dissipation	PD	1.1	W
Thermal Resistance from Junction to Ambient ($t \leq 10s$)	R θ JA	250	$^\circ C/W$
Operating Junction	TJ	150	$^\circ C$
Storage Temperature	TSTG	-55~+150	$^\circ C$

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 = -250μA	-20			V
Gate-source threshold voltage	VGS(th)	VDS =VGS, ID = -250μA	-0.4		-1	V
Gate-source leakage	IGSS	VDS =0V, VGS = ±8V			±100	nA
Zero gate voltage drain current	IDSS	VDS = -16V, VGS =0V			-1	μA
Drain-source on-state resistancea	RDS(on)	VGS = -4.5V, ID = -1.6A		115	130	mΩ
		VGS = -2.5V, ID = -1.3A		155	180	mΩ
Forward transconductancea	gfs	VDS = -4.5V, ID = -1.6A		3		S
Diode forward voltage	VSD	IS= -1A,VGS=0V		-0.8	-1.2	V
Dynamic						
Input capacitance	Ciss	VDS = -10V,VGS =0V, f=1MHz		405		pF
Output capacitance	Coss			170		pF
Reverse transfer capacitanceb	Crss			45		pF
Total gate charge	Qg	VDS = -5V,VGS = -4.5V, ID = -1.6A		6		nC
Gate-source charge	Qgs			0.8		nC
Gate-drain charge	Qgd			1.3		nC
Gate resistance	Rg	f=1MHz	0.5		3.2	Ω
Switchingbtr						
Turn-on delay time	td(on)	VDS= -5V RL=3.5Ω, ID ≈ -1A, VGEN= -4.5V,Rg=3Ω		6.5		ns
Rise time	tr			20		ns
Turn-off delay time	td(off)			31		ns
Fall time	tf			21		ns
Drain-source body diode characteristicstr						
Continuous Source-Drain Diode Current	IS	Tc=25℃			-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°