

Features

- Energy Efficient
- Low Threshold Voltage
- High-speed Switching
- Green Device Available

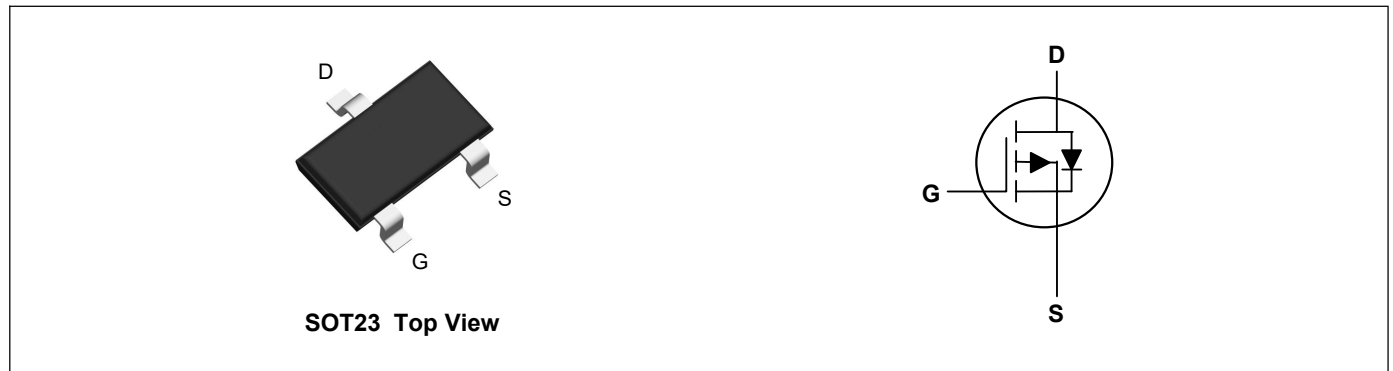
Product Summary



V_{DS}	-50	V
I_D	-130	mA
$R_{DS(ON)}$ (at $V_{GS}=-10V$)	6	Ω
$R_{DS(ON)}$ (at $V_{GS}=-5V$)	5	Ω

Applications

- Power management in portable and battery-powered products such
- DC-DC converters
- Load Switch



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

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹	I_D	-130	mA
Pulsed Drain Current ²	I_{DM}	-520	mA
Total Power Dissipation ³	P_D	225	mW
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}C$
Operating Junction Temperature Range	T_J	-55 to 150	$^{\circ}C$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance Junction-Ambient ¹	$R_{\theta JA}$	---	556	$^{\circ}C/W$

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-50	---	---	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-100mA$	---	1.9	5	Ω
		$V_{GS}=-5V, I_D=-100mA$	---	2.4	6	Ω
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=-250\mu A$	-0.8	---	-2	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-50V, V_{GS}=0V, T_J=25^{\circ}\text{C}$	---	---	-15	μA
		$V_{DS}=-50V, V_{GS}=0V, T_J=125^{\circ}\text{C}$	---	---	-60	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 10	μA
Forward Transconductance	g_{fs}	$V_{DS}=-25V, I_D=-100mA$	50	---	---	mS
Turn-On Delay Time	$T_{d(on)}$	$V_{DS}=-15V, V_{GS}=-10V, R_G=25\Omega, R_L=50\Omega$	---	16	---	ns
Rise Time	T_r		---	8	---	
Turn-Off Delay Time	$T_{d(off)}$		---	17	---	
Fall Time	T_f		---	5	---	
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$	---	36	---	pF
Output Capacitance	C_{oss}		---	4.5	---	
Reverse Transfer Capacitance	C_{rss}		---	2.8	---	

Drain-Source Diode Characteristics

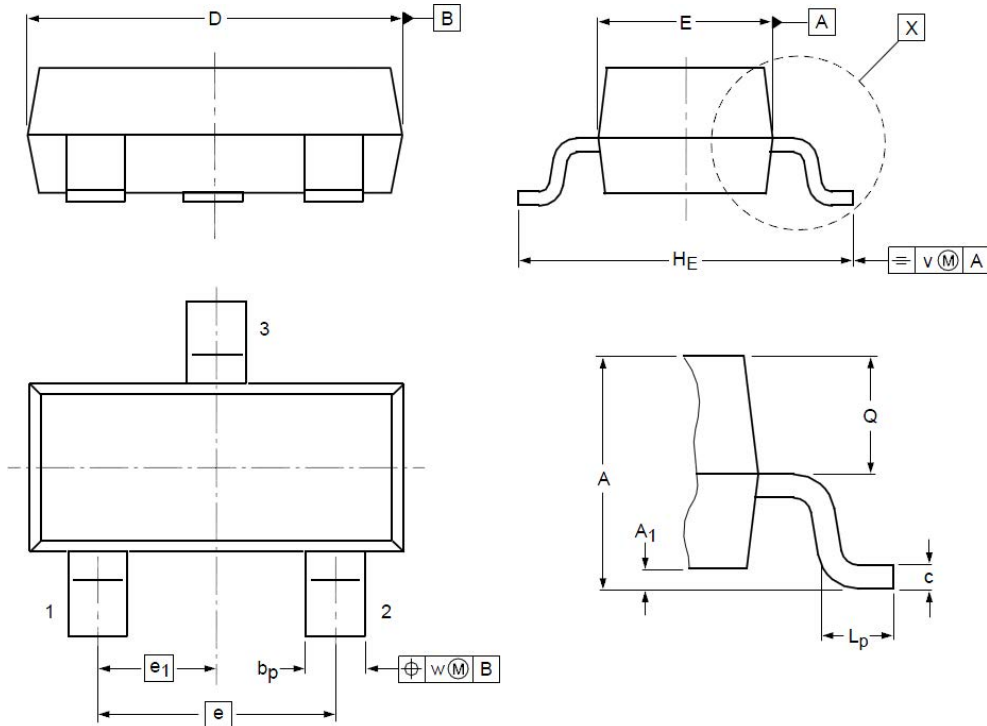
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Continuous Source Current ¹	I_S	$T_C=25^{\circ}\text{C}$	---	---	-0.13	A
Pulsed Source Current ²	I_{SM}		---	---	-0.52	A
Diode Forward Voltage ²	V_{SD}	$V_{GS}=0V, I_S=-0.13A, T_J=25^{\circ}\text{C}$	---	-2.2	---	V

Note:

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3.The power dissipation is limited by 150 $^{\circ}\text{C}$ junction temperature

Typical Characteristics

SOT23 Package Outline Dimensions



Symbol	Dimensions (unit:mm)			Symbol	Dimensions (unit:mm)		
	Min	Typ	Max		Min	Typ	Max
A	0.90	1.05	1.20	e₁	--	0.95	--
A₁	0.01	0.05	0.10	H_E	2.10	2.40	2.50
b_p	0.38	0.42	0.48	L_p	0.40	0.50	0.60
c	0.09	0.13	0.15	Q	0.45	0.49	0.55
D	2.80	2.92	3.00	V	--	0.20	--
E	1.20	1.33	1.40	W	--	0.10	--
e	--	1.90	--				