

## SI2303 P-channel 30-V(D-S) MOSFET

V(BR)DSS	RDS(on)MAX	ID
-30 V	190mΩ@-10V	-1.7A
	330mΩ@-4.5V	

### FEATURE

※ TrenchFET Power MOSFET

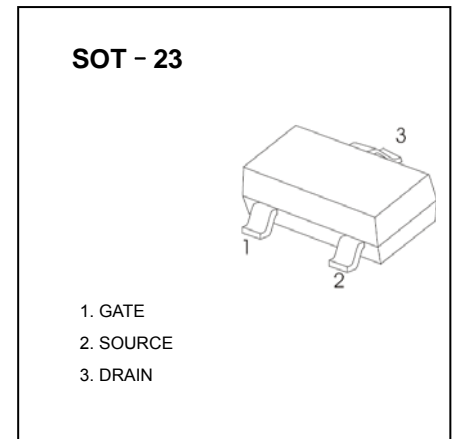
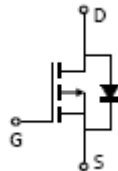
### APPLICATION

- ※ Load Switch for Portable Devices
- ※ DC/DC Converter

### MARKING



### Equivalent Circuit



### Maximum ratings ( Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	-30	V
Gate-Source Voltage	VGS	±20	
Continuous Drain Current	ID	-1.7	A
Pulsed Diode Current	IDM	-10	
Continuous Source-Drain Current(Diode Conduction)	IS	-1	
Power Dissipation	PD	0.9	W
Thermal Resistance from Junction to Ambient (t≤5s)	RθJA	357	°C/W
Operating Junction	TJ	150	°C
Storage Temperature	TSTG	-55~+150	°C

## SOT-23 Plastic-Encapsulate MOSFETS

## MOSFET ELECTRICAL CHARACTERISTICS

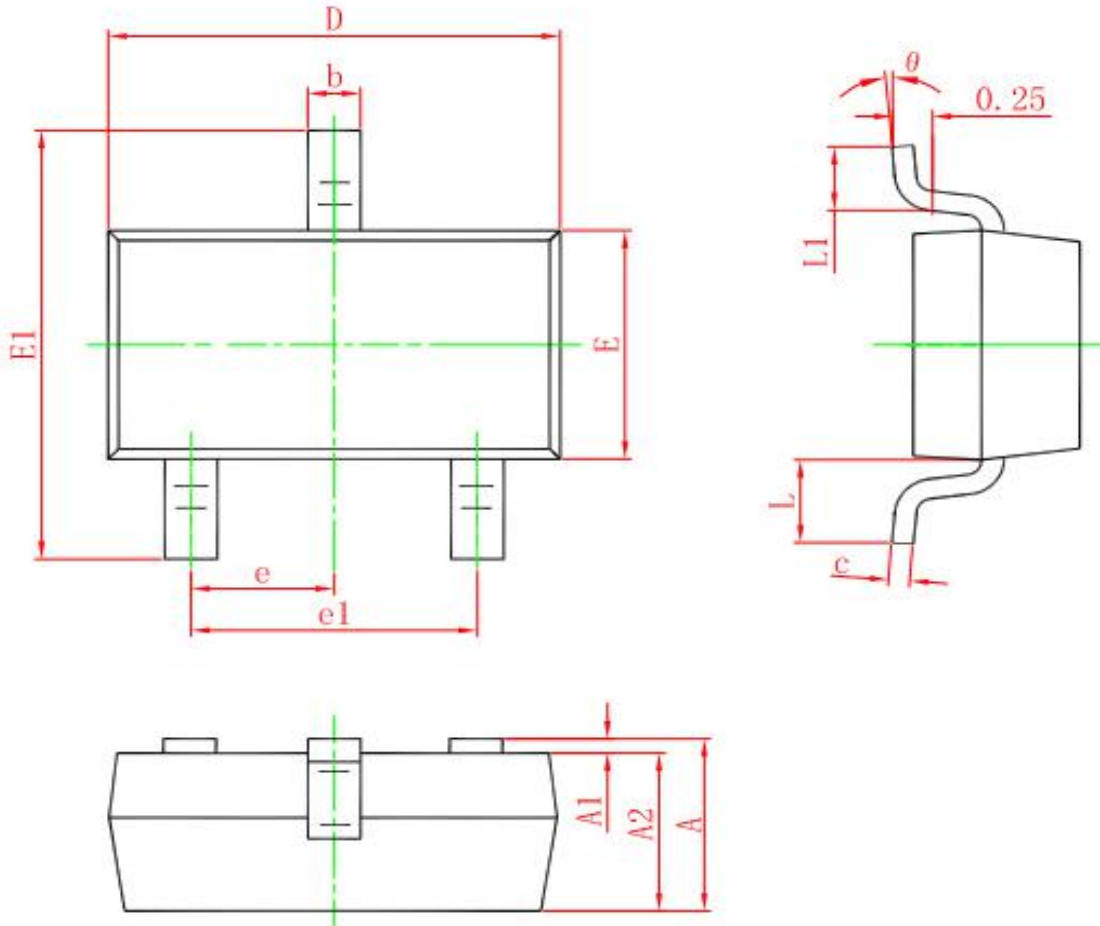
## Static Electrical Characteristics (Ta = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-source breakdown voltage	V(BR)DSS	VGS = 0V, ID = -250 $\mu$ A	-30			V
Gate-source threshold voltage	VGS(th)	VDS = VGS, ID = -250 $\mu$ A	-1		-3	V
Gate-source leakage	IGSS	VDS = 0V, VGS = $\pm$ 20V			$\pm$ 100	nA
Zero gate voltage drain current	IDSS	VDS = -30V, VGS = 0V			-1	$\mu$ A
Drain-source on-state resistance <sup>a</sup>	RDS(on)	VGS = -10V, ID = -1.7A		120	190	m $\Omega$
		VGS = -4.5V, ID = -1.3A		150	330	m $\Omega$
Forward transconductance <sup>a</sup>	gfs	VDS = -10V, ID = -1.7A	5.5			S
Diode forward voltage	VSD	IS = -1A, VGS = 0V		-0.8	-1.2	V
<b>Dynamic</b>						
Input capacitance	Ciss	VDS = -15V, VGS = 0V, f = 1MHz		155		pF
Output capacitance	Coss			35		pF
Reverse transfer capacitance <sup>b</sup>	Crss			25		pF
Total gate charge	Qg	VDS = -15V, VGS = -4.5V, ID = -1.7A		2	4	nC
Gate-source charge	Qgs			0.6		nC
Gate-drain charge	Qgd			1		nC
Gate resistance	Rg	f = 1MHz		8.5	17	$\Omega$
<b>Switching<sup>b</sup></b>						
Turn-on delay time	td(on)	VDD = -15V RL = 10 $\Omega$ , ID $\approx$ -1.5A, VGEN = -4.5V, Rg = 5 $\Omega$		36	44	ns
Rise time	tr			37	45	ns
Turn-off delay time	td(off)			12	18	ns
Fall time	tf			9	14	ns
<b>Drain-source body diode characteristics</b>						
Continuous Source-Drain Diode Current	IS	Tc = 25 $^{\circ}$ C			-1.75	A
Pulsed Diode forward Current	ISM				-10	A

**Note :**

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width  $\leq$  300 $\mu$ s, Duty Cycle  $\leq$  2%.
4. Guaranteed by design, not subject to production testing.

SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°