

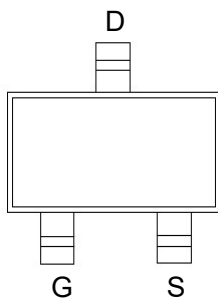
30V/5.8A N-Channel MOSFET

Features

- Trench Power LV MOSFET technology
- High density cell design for low $R_{DS(ON)}$
- High Speed switching

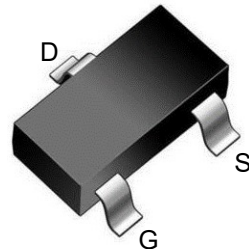
Application

- Battery protection
- Load switch
- Power management

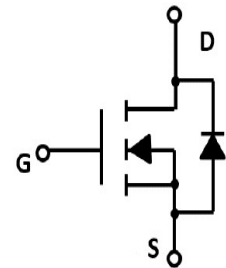


Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
30V	38mΩ@10V	5.8A
	40mΩ@4.5V	



SOT-23 top view



Schematic diagram



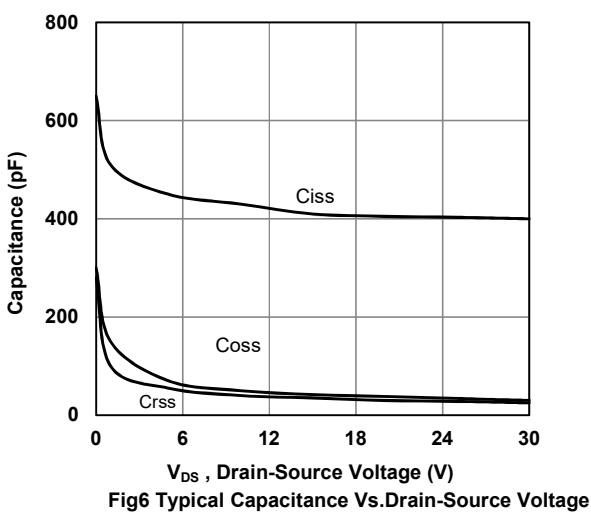
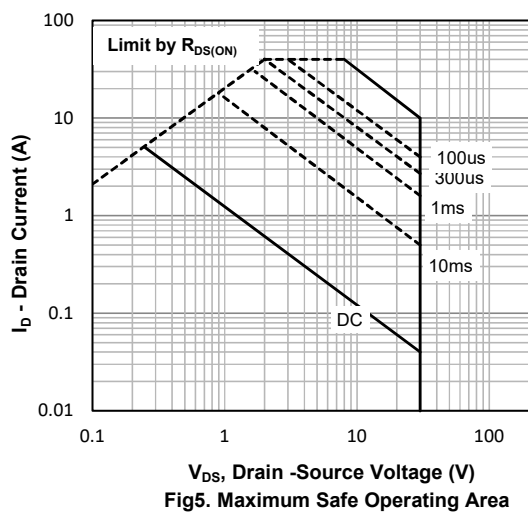
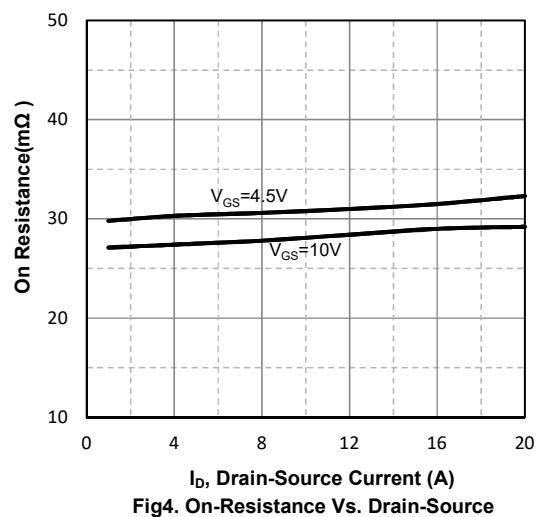
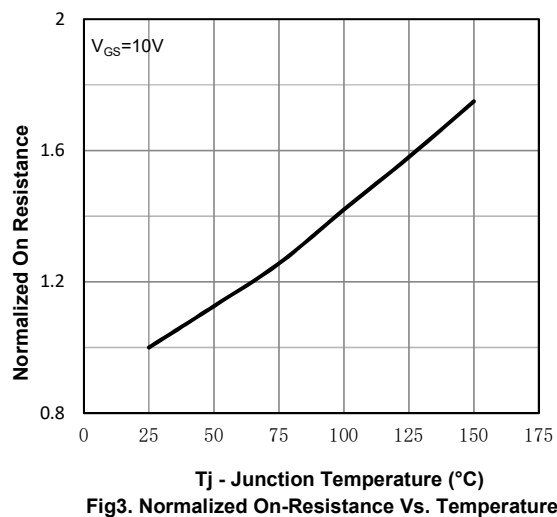
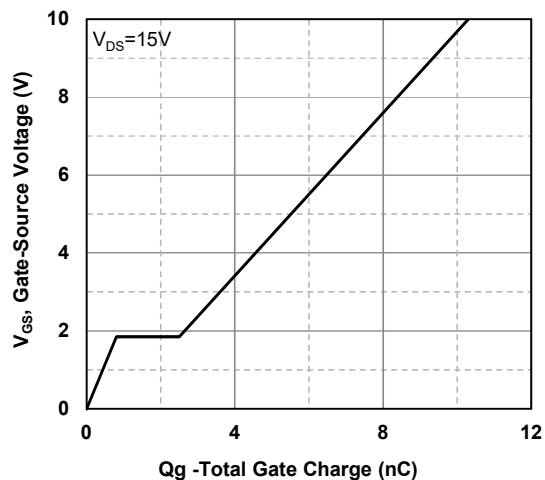
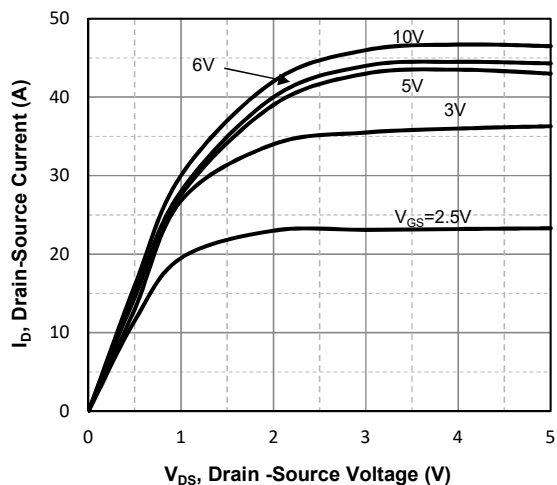
Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

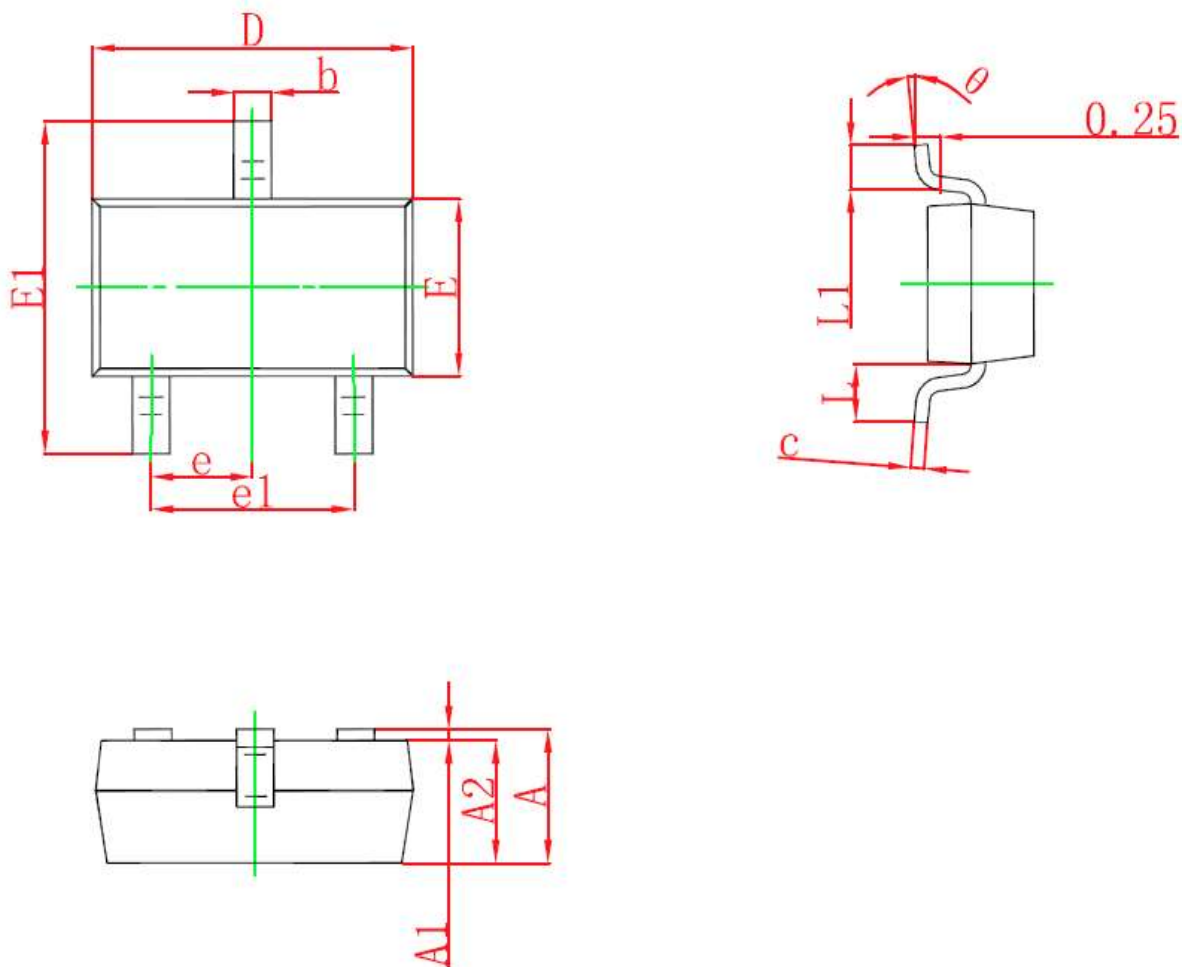
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		30	V
V _{GS}	Gate-Source Voltage		±12	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-50 to 155	°C
I _S	Diode Continuous Forward Current	Tc=25°C	5.8	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	40	A
I _D	Continuous Drain Current	Tc=25°C	5.8	A
P _D	Maximum Power Dissipation	Tc=25°C	1.2	W
R _{θJA}	Thermal Resistance Junction-Ambient		104	°C/W

Electrical Characteristics (TJ=25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	30	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.65	0.9	1.45	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =5.0A	--	28	38	mΩ
		V _{GS} =4.5V, I _D =4.0A	--	30	40	mΩ
		V _{GS} =2.5V, I _D =2.0A	--	38	55	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	--	425	--	pF
C _{OSS}	Output Capacitance		--	45	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	35	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =15V, I _D =5A, V _{GS} =10V	--	10	--	nC
Q _{gs}	Gate Source Charge		--	0.83	--	nC
Q _{gd}	Gate Drain Charge		--	1.8	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =15V, I _D =5A, V _{GS} =10V, R _G =2.2Ω	--	4.4	--	nS
t _r	Turn-on Rise Time		--	28.3	--	nS
t _{d(off)}	Turn-Off Delay Time		--	16.5	--	nS
t _f	Turn-Off Fall Time		--	26.3	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25°C, Is=5.8A,	--	--	1.2	V

Typical Operating Characteristics



SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		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	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°