

-20V/-2.3A P-Channel MOSFET

Features

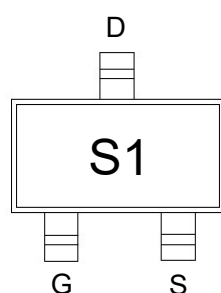
- Leading trench technology for low $R_{DS(on)}$
- Low Gate Charge

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-20V	130mΩ@4.5V	-2.3A
	150mΩ@2.5V	

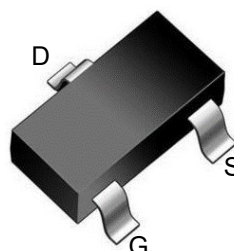
Application

- Video monitor
- Power management

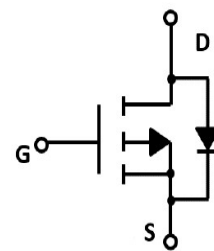


S1: Device code

Marking and pin assignment



SOT-523 top view



Schematic diagram



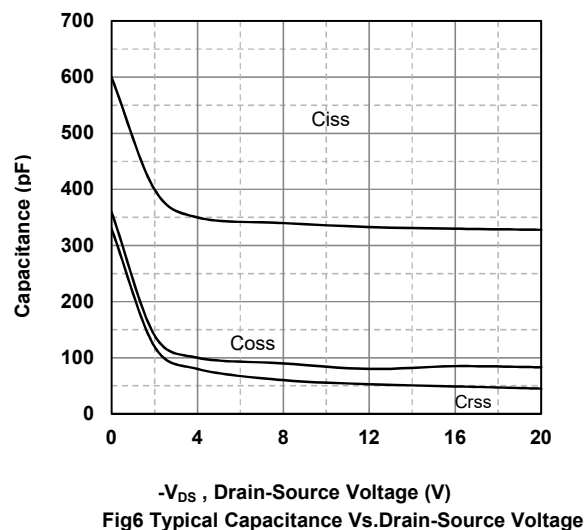
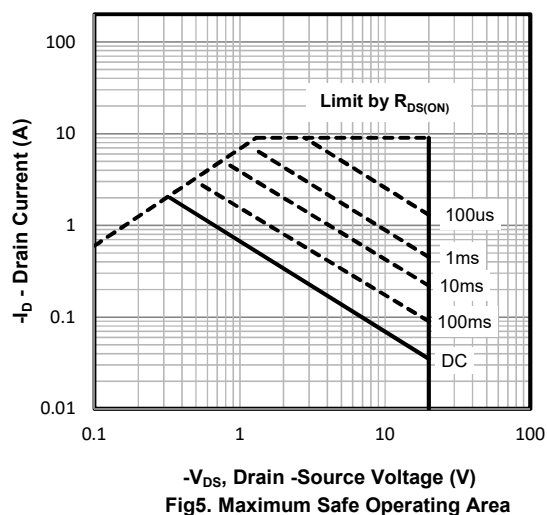
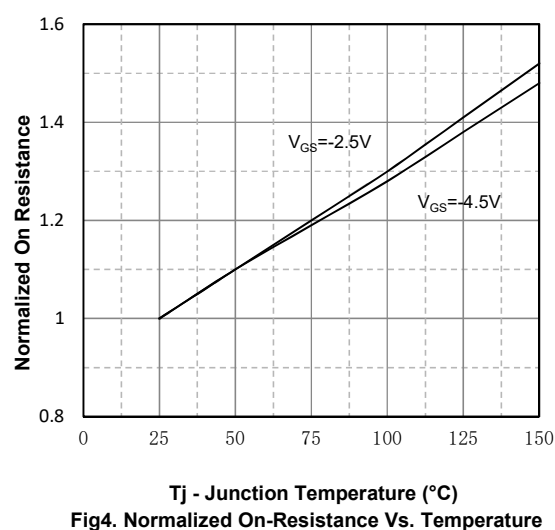
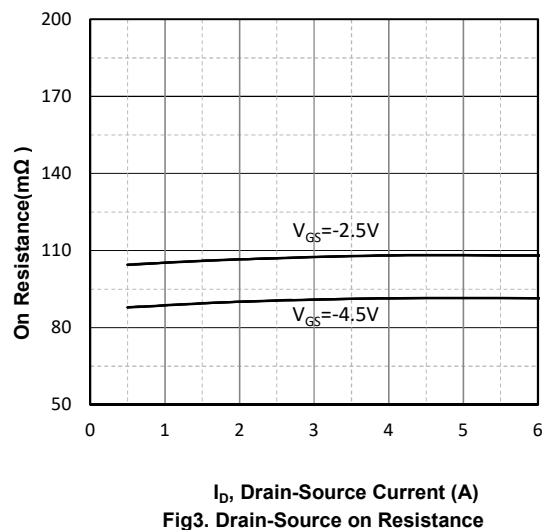
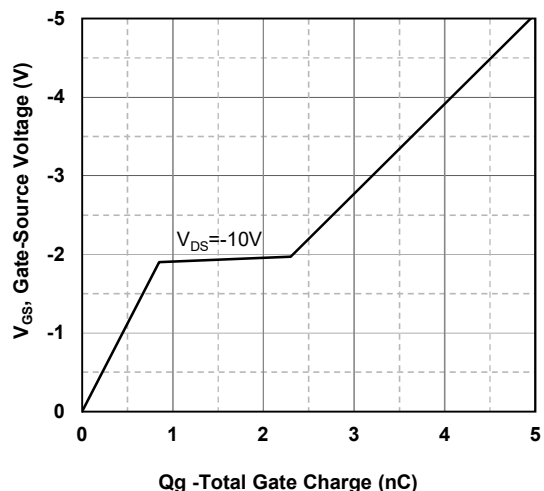
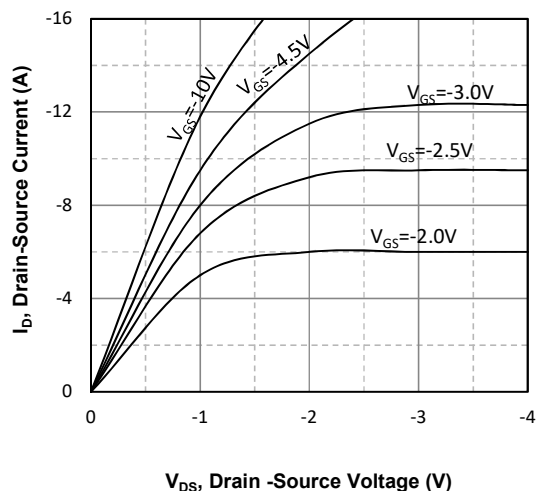
Halogen-Free

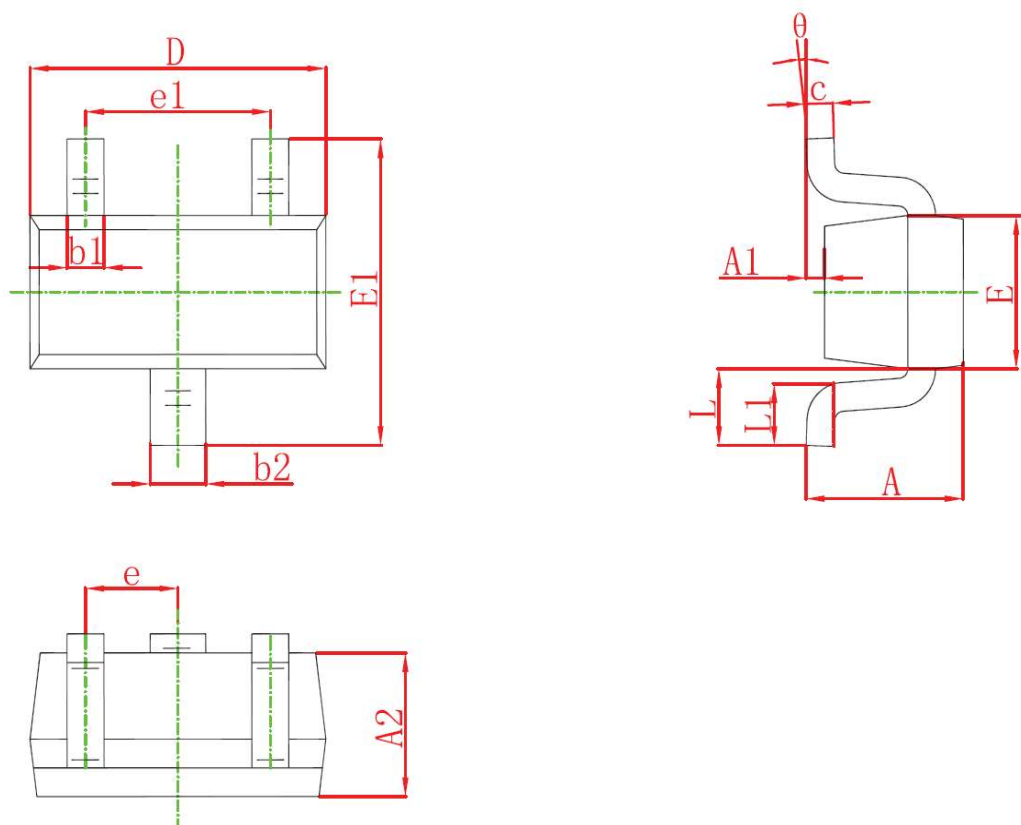
Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		-20	V
V _{GS}	Gate-Source Voltage		±10	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _S	Diode Continuous Forward Current	Tc=25°C	-2.3	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	-5.2	A
I _D	Continuous Drain Current	Tc=25°C	-2.3	A
P _D	Maximum Power Dissipation	Tc=25°C	0.7	W
R _{θJA}	Thermal Resistance Junction-to-Ambient		178	°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	-20	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-20V, V _{GS} =0V	--	--	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±10V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-0.62	-1.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-4.5V, I _D =-2.8A	--	90	130	mΩ
		V _{GS} =-2.5V, I _D =-1.5A	--	105	150	mΩ
		V _{GS} =-1.8V, I _D =-1.5A	--	150	250	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-10V, V _{GS} =0V, f=1MHz	--	327	--	pF
C _{OSS}	Output Capacitance		--	60	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	55	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =-10V, I _D =-2A, V _{GS} =-4.5V	--	3.8	--	nC
Q _{gs}	Gate Source Charge		--	0.7	--	nC
Q _{gd}	Gate Drain Charge		--	0.9	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =-10V, I _D =-1A, V _{GS} =-4.5V, R _G =2.8Ω	--	6	--	nS
t _r	Turn-on Rise Time		--	31	--	nS
t _{d(off)}	Turn-Off Delay Time		--	45	--	nS
t _f	Turn-Off Fall Time		--	40	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25°C, Is=-2.5A,	--	--	-1.2	V

Typical Operating Characteristics



SOT-523 Package information


Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500TYP		0.020TYP	
e1	0.900	1.100	0.035	0.043
L	0.400REF		0.016REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°