

-100V/-2A P-Channel MOSFET

Features

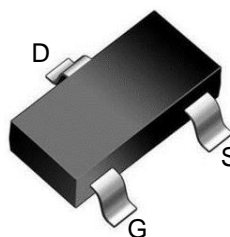
- Super Low Gate Charge
- Excellent Cdv/dt effect decline
- Green Device Available
- Advanced high cell density Trench technology

Application

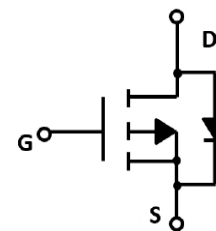
- Video monitor
- Power management

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-100V	650m Ω @10V	-2A
	700m Ω @4.5V	



SOT-23 top view

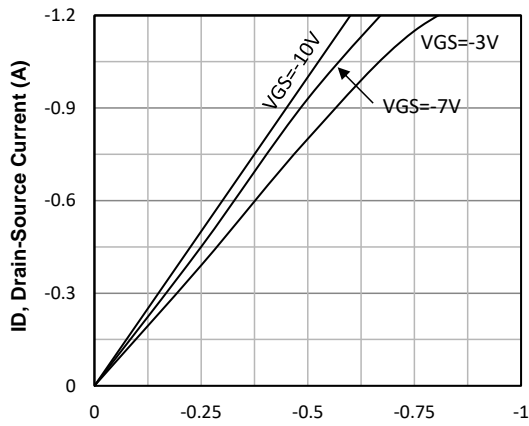


Schematic diagram

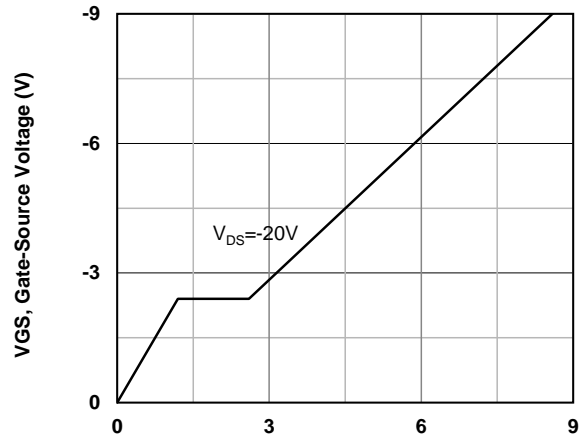
Absolute Maximum Ratings (TA=25°C unless otherwise noted)			
Symbol	Parameter	Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)			
V_{DS}	Drain-Source Breakdown Voltage	-100	V
V_{GS}	Gate-Source Voltage	± 20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$ -2	A
Mounted on Large Heat Sink			
I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$ -5	A
I_D	Continuous Drain Current@GS=10V	$T_C=25^\circ\text{C}$ -2	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ 1	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient	125	°C/W

Electrical Characteristics (T_J=25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	VGS=0V, ID=-250μA	-100	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	VDS=-100V, VGS=0V	--	--	-1	μA
I _{GSS}	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1	-2	-2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	VGS=-10V, ID=-1A	--	560	650	mΩ
		VGS=-4.5V, ID=-0.5A	--	630	700	
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	VDS=-15V, VGS=0V, f=1MHz	--	553	--	pF
C _{OSS}	Output Capacitance		--	29	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	20	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	VDS=-15V, ID=-0.5A, VGS=-4.5V	--	4.5	--	nC
Q _{gs}	Gate Source Charge		--	1.15	--	nC
Q _{gd}	Gate Drain Charge		--	1.5	--	nC
t _{d(on)}	Turn-on Delay Time	VDD=-50V, ID=-0.5A, VGS=-10V, RG=3.3Ω	--	13.6	--	nS
t _r	Turn-on Rise Time		--	6.8	--	nS
t _{d(off)}	Turn-Off Delay Time		--	34	--	nS
t _f	Turn-Off Fall Time		--	3	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _j =25°C, I _s =-2A,	--	--	-1.2	V

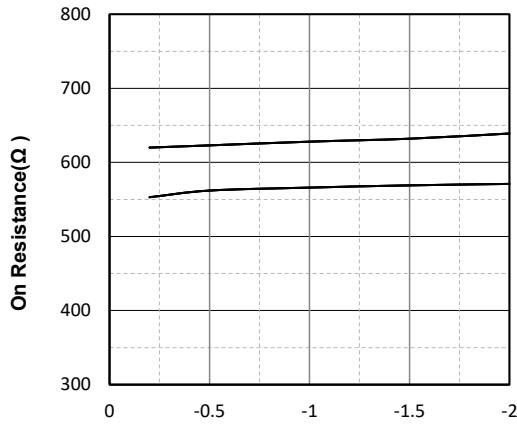
Typical Operating Characteristics



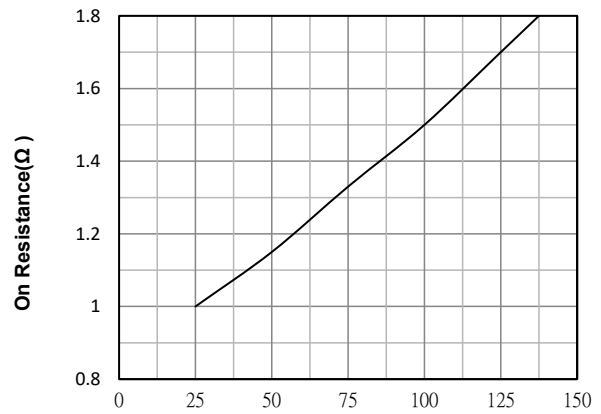
V_{DS}, Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



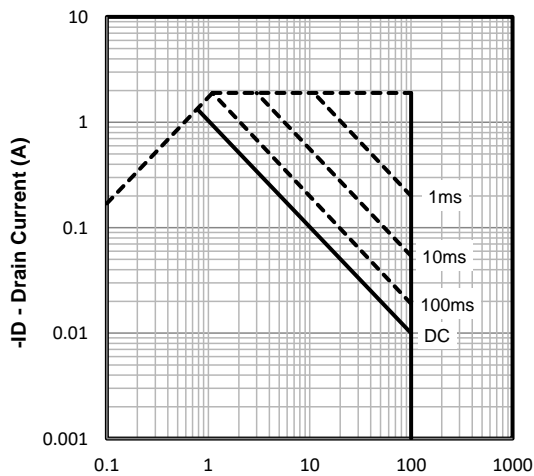
Q_g -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs. Gate-Source Voltage



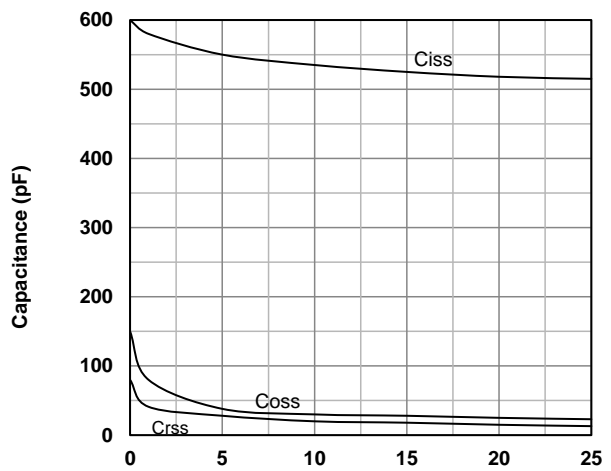
I_D, Drain-Source Current (mA)
Fig3. Drain-Source on Resistance



T_j - Junction Temperature (°C)
Fig4. Normalized On-Resistance Vs. Temperature

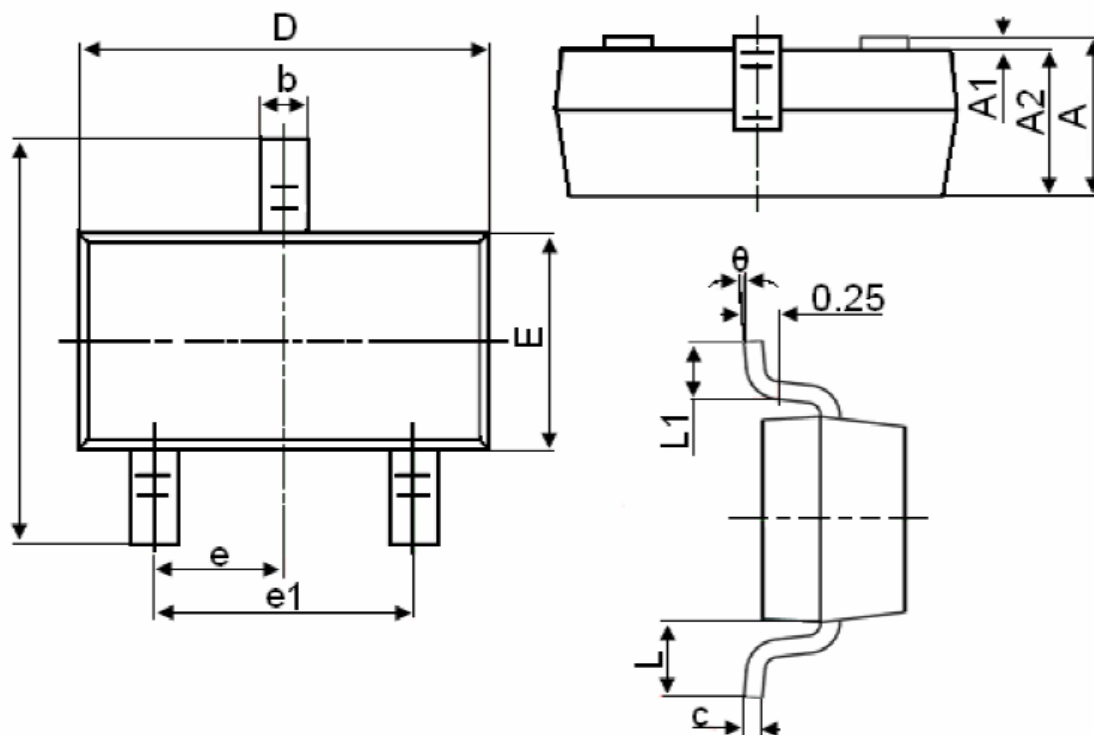


-V_{DS}, Drain -Source Voltage (V)
Fig7. Maximum Safe Operating Area



-V_{DS}, Drain-Source Voltage (V)
Fig6. Typical Capacitance Vs. Drain-Source Voltage

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°