20V/6.5A N-Channel MOSFET

Features

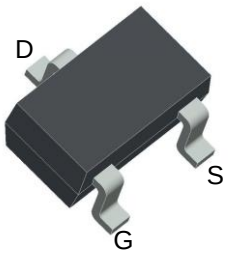
- High Power and current handing capability
- Lead free product is acquired
- Surface mount package

Product Summary

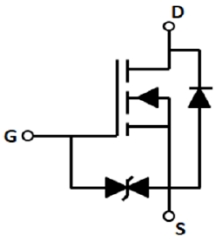
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
20V	22mΩ@4.5V	6.5A
	26mΩ@2.5V	

Application

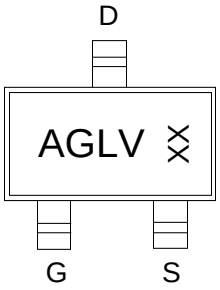
- Load Switch
- PWM Application
- Power



SOT-23-3L top view



Schematic diagram



AGLV : Device code
XX : Code

Marking and pin assignment

Pb-Free

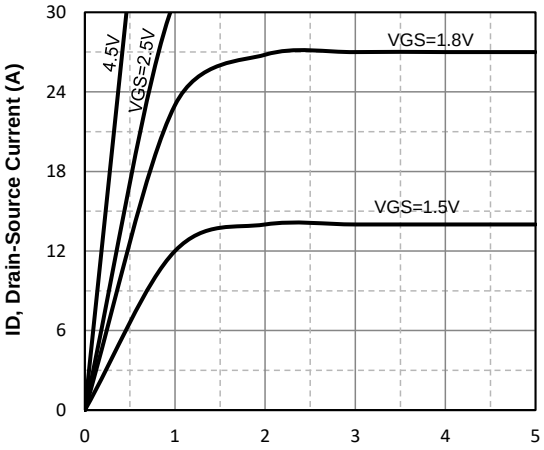
RoHS

Halogen-Free

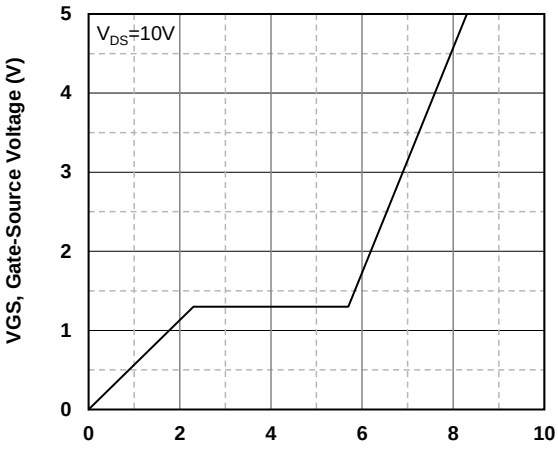
Absolute Maximum Ratings (T_A=25℃unless otherwise noted)				
Symbol	**Parameter**		**Rating**	**Unit**
Common Ratings (T_C=25°C Unless Otherwise Noted)				
V_{DS}	Drain-Source Breakdown Voltage		20	V
V_{GS}	Gate-Source Voltage		±12	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-50 to 155	°C
I_S	Diode Continuous Forward Current	Tc=25°C	6.5	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	Tc=25°C	30	A
I_D	Continuous Drain Current@GS=10V	Tc=25°C	6.5	A
P_D	Maximum Power Dissipation	Tc=25°C	1.4	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient @ Steady State		125	°C/W

Electrical Characteristics (TJ=25℃ 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	VGS=0V，ID=250μA	20	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	VDS=20V，VGS=0V	--	--	1	uA
I_{GSS}	Gate-Body Leakage Current	VGS=±10V，VDS=0V	--	--	±10	uA
$V_{GS(th)}$	Gate Threshold Voltage	VDS=VGS，ID=250μA	0.4	0.7	1.1	V
$R_{DS(on)}$	Drain-Source On-State Resistance	VGS=4.5V，ID=6.5A	--	17	22	mΩ
		VGS=2.5V，ID=5.5A	--	20	26	mΩ
		VGS=1.8V，ID=5.0A	--	35	50	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C_{ISS}	Input Capacitance	VDS=10V，VGS=0V， f=1MHz	--	660	--	pF
C_{OSS}	Output Capacitance		--	160	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	90	--	pF
Switching Characteristics						
Q_g	Total Gate Charge	VDS=10V，ID=6.5A，VGS=4.5V	--	8	--	nC
Q_{gs}	Gate Source Charge		--	2.5	--	nC
Q_{gd}	Gate Drain Charge		--	3	--	nC
$t_{d(on)}$	Turn-on Delay Time	VDD=10V，ID=0.5A，VGS=4.5V，RG=10Ω	--	0.5	--	nS
t_r	Turn-on Rise Time		--	1	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	12	--	nS
t_f	Turn-Off Fall Time		--	4	--	nS
Source- Drain Diode Characteristics						
V_{SD}	Forward on voltage	Tj=25℃，Is=6.5A，	--	--	1.2	V

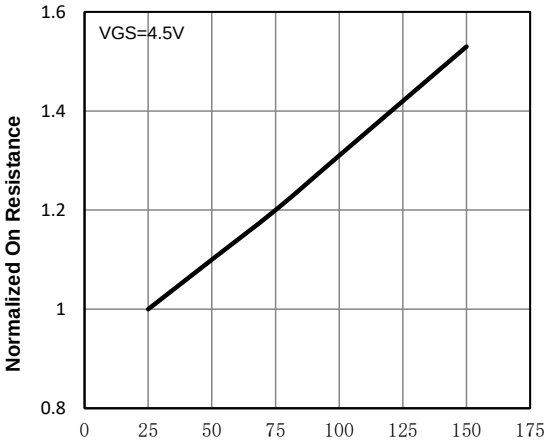
Typical Operating Characteristics



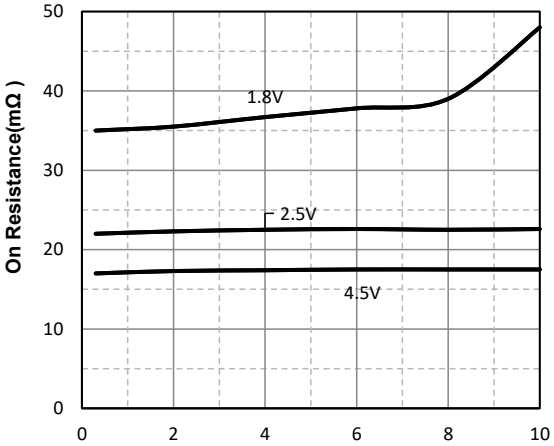
VDS, Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



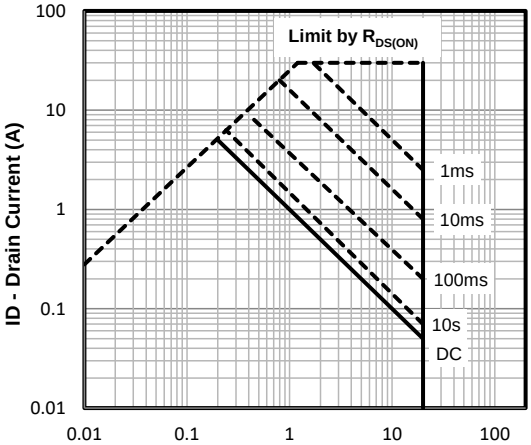
Qg -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs.Gate-Source Voltag



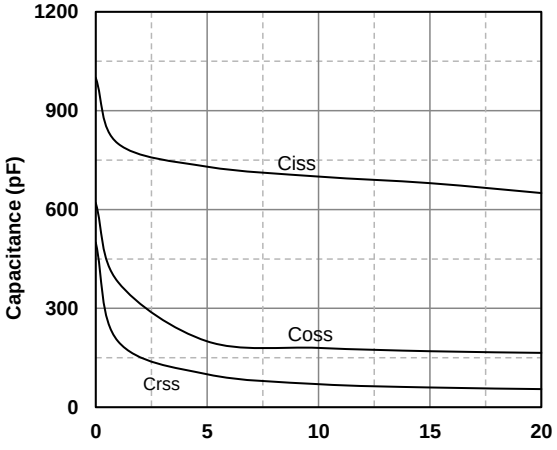
Tj - Junction Temperature (°C)
Fig3. Normalized On-Resistance Vs. Temperature



ID, Drain-Source Current (A)
Fig4. On-Resistance Vs. Drain-Source Current

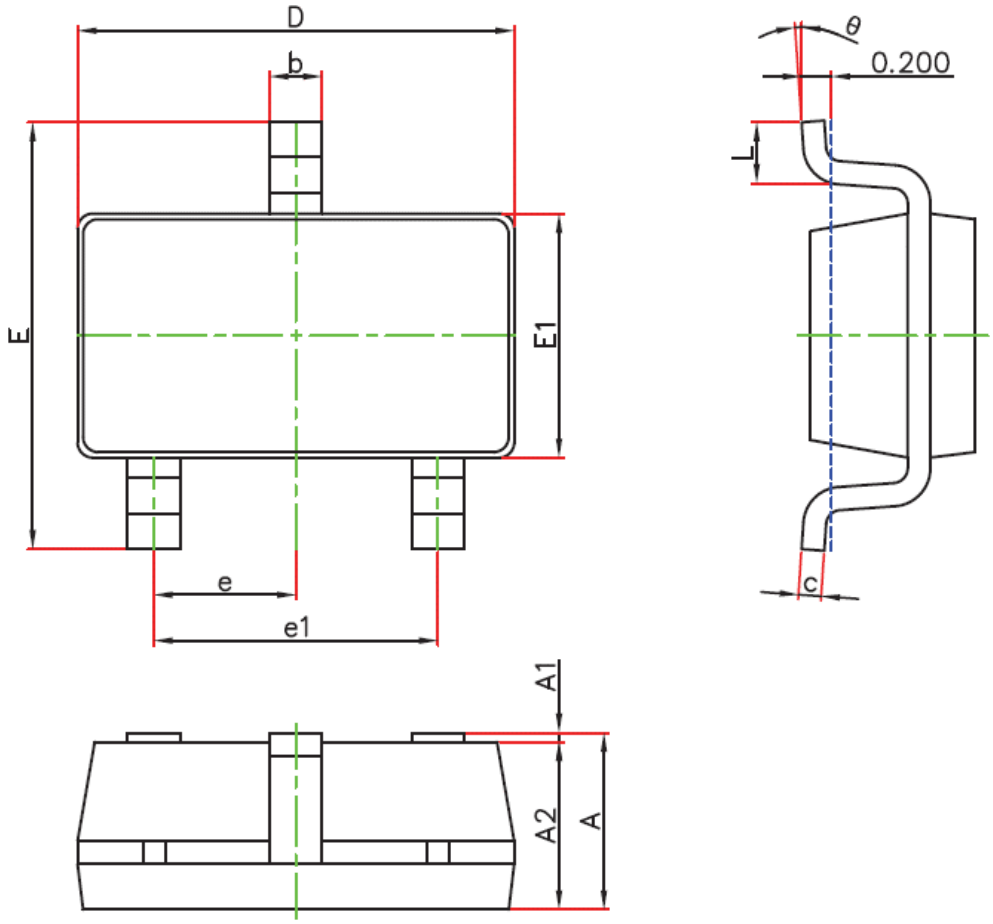


VDS, Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area



VDS , Drain-Source Voltage (V)
Fig6 Typical Capacitance Vs.Drain-Source

SOT-23-3L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°