

Features

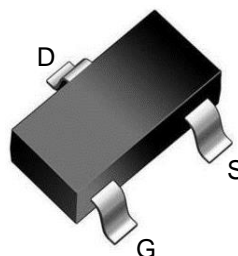
- Trench Power LV MOSFET technology
- High Power and current handing capability

Product Summary

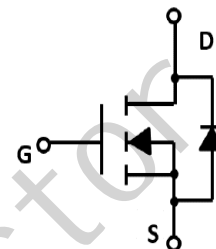
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
20V	65mΩ@4.5V	2.5A
	85mΩ@2.5V	

Application

- PWM application
- Load switch



SOT-23 top view

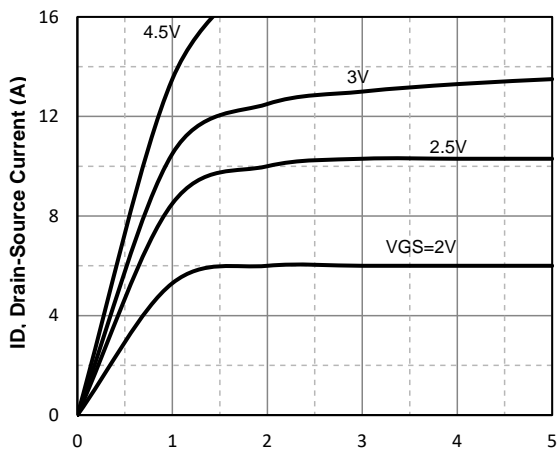


Schematic diagram

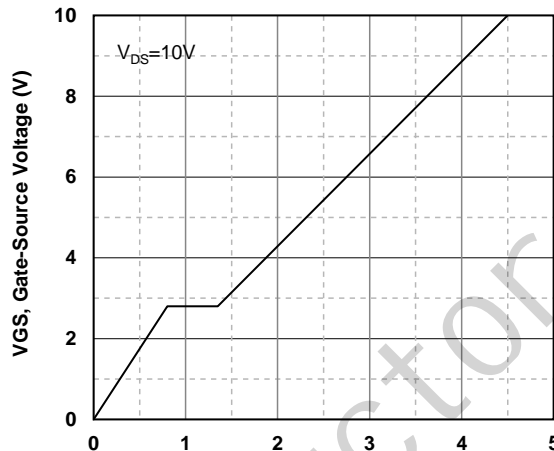
Absolute Maximum Ratings (TA=25°C unless otherwise noted)				
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V_{DS}	Drain-Source Breakdown Voltage		20	V
V_{GS}	Gate-Source Voltage		±10	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-50 to 155	°C
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$	2.5	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$	14	A
I_D	Continuous Drain Current@GS=10V	$T_C=25^\circ\text{C}$	2.5	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$	0.7	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient @ Steady State		178	°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)						
B _{V(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	0.45	0.7	0.9	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =2.5A	--	45	65	mΩ
		V _{GS} =2.5V, I _D =2.0A	--	69	85	mΩ
Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	--	120	--	pF
C _{OSS}	Output Capacitance		--	30	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	25	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, I _D =2.5A, V _{GS} =10V	--	4.5	--	nC
Q _{gs}	Gate Source Charge		--	0.8	--	nC
Q _{gd}	Gate Drain Charge		--	0.5	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =2.5A, V _{GS} =10V, R _G =3Ω	--	3	--	nS
t _r	Turn-on Rise Time		--	29	--	nS
t _{d(off)}	Turn-Off Delay Time		--	6	--	nS
t _f	Turn-Off Fall Time		--	22	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _J =25°C, I _S =2.5A,	--	--	1.2	V

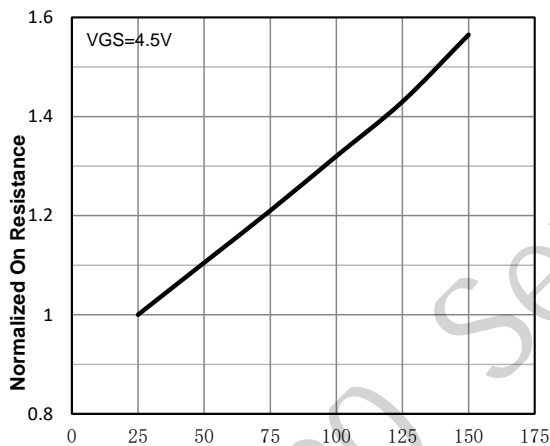
Typical Operating Characteristics



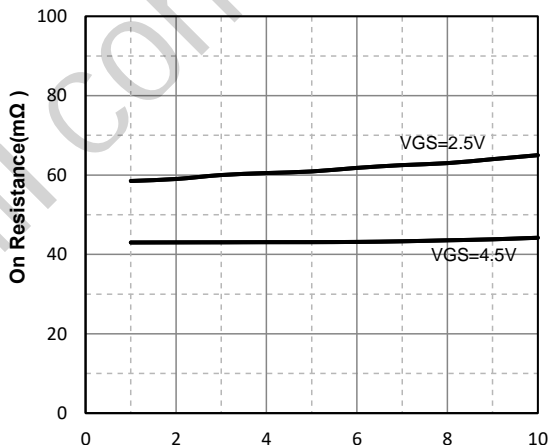
V_{DS}, Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



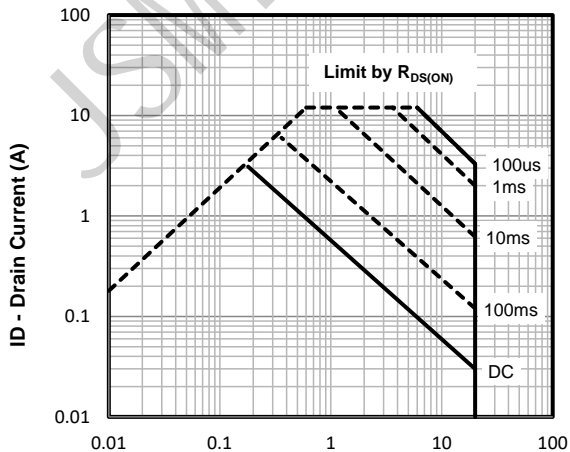
Q_g -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs. Gate-Source Voltage



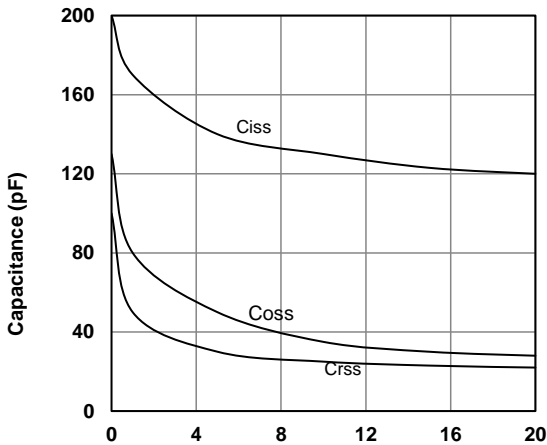
T_j - Junction Temperature (°C)
Fig3. Normalized On-Resistance Vs. Temperature



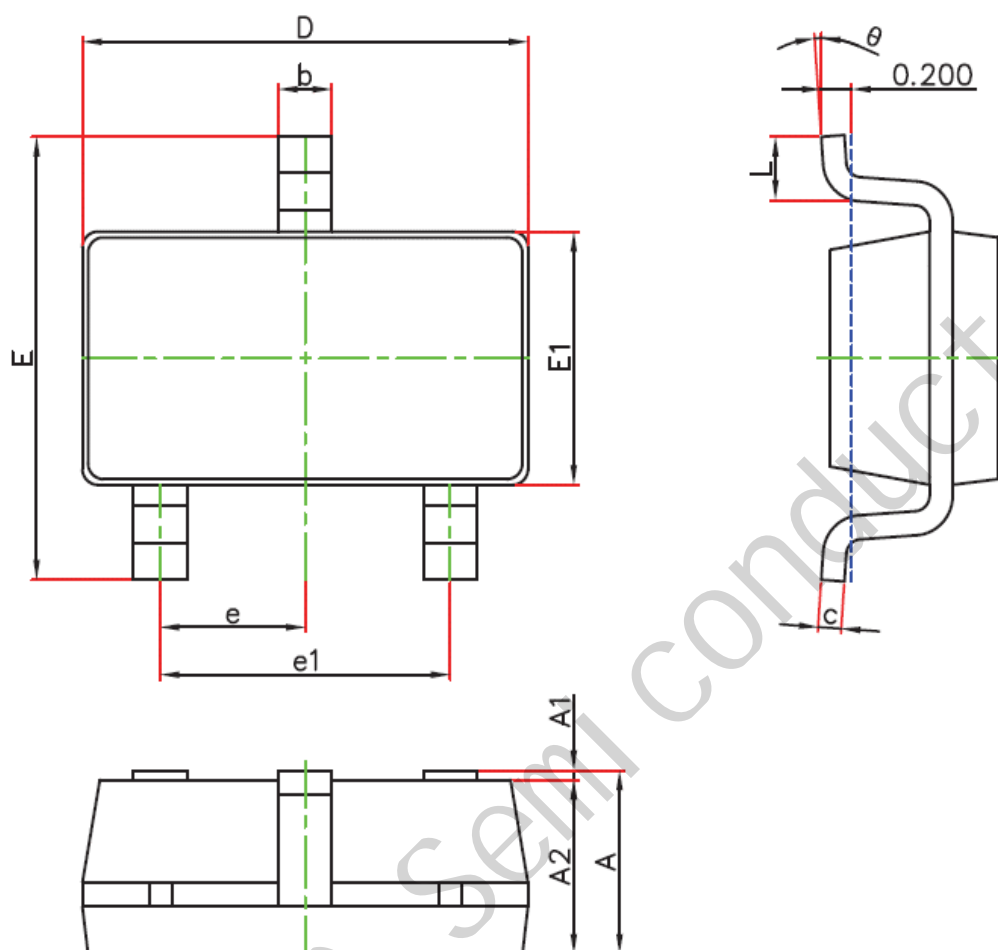
I_D, Drain-Source Current (A)
Fig4. On-Resistance Vs. Drain-Source Current



V_{DS}, Drain -Source Voltage (V)
Fig5. 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	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°

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