

Features

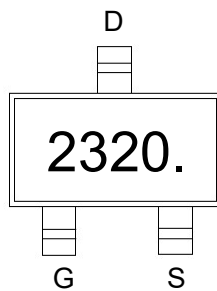
- Trench Power LV MOSFET technology
- High Power and current handling capability

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
20V	18mΩ@4.5V	6A
	22mΩ@2.5V	

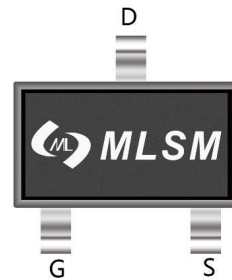
Application

- PWM application
- Load switch

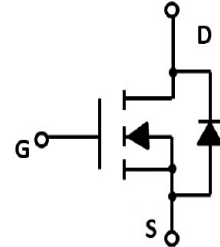


2320.: Device code

Marking and pin assignment



SOT-23-3L top view



Schematic diagram



Halogen-Free

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

Symbol	Parameter	Rating	Unit
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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	Tc=25°C	6	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^{\circ}C$	25	A
I_D	Continuous Drain Current	$T_C=25^{\circ}C$	6	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}C$	1.25	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient		100	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLSK2320B	SOT-23-3L	2320.	3,000	45,000	180,000	7" reel

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	VGS=0V, ID=250μA	20	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=20V, VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±10V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	0.45	0.7	1.0	V
RDS(on)	Drain-Source On-State Resistance	VGS=4.5V, ID=5A	--	12	18	mΩ
		VGS=2.5V, ID=4A	--	15	22	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=10V, VGS=0V, f=1MHz	--	885	--	pF
COSS	Output Capacitance		--	135	--	pF
CRSS	Reverse Transfer Capacitance		--	120	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=10V, ID=6A, VGS=4.5V	--	11	--	nC
Qgs	Gate Source Charge		--	1.75	--	nC
Qgd	Gate Drain Charge		--	3	--	nC
td(on)	Turn-on Delay Time	VDD=10V, RL=1.5Ω, VGS=4.5V, RG=3Ω	--	7	--	nS
tr	Turn-on Rise Time		--	45	--	nS
td(off)	Turn-Off Delay Time		--	30	--	nS
tf	Turn-Off Fall Time		--	50	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	TJ=25°C, IS=6A	--	--	1.2	V

Typical Operating Characteristics

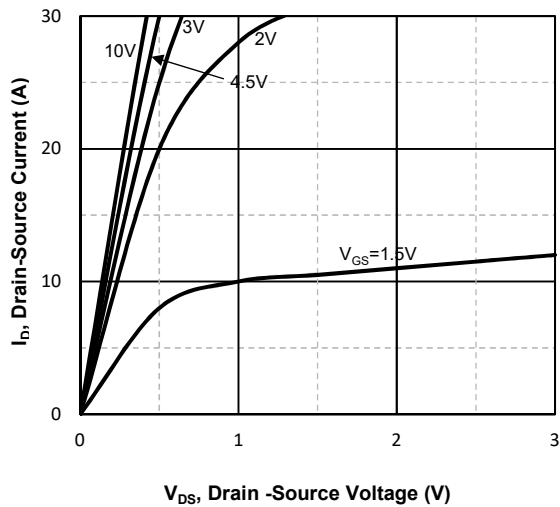


Fig1. Typical Output Characteristics

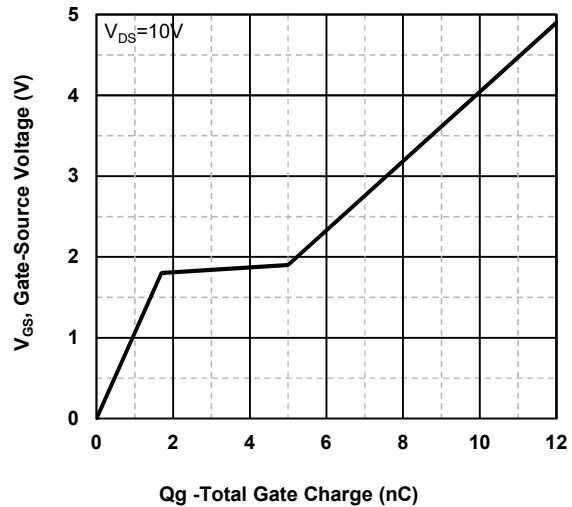


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

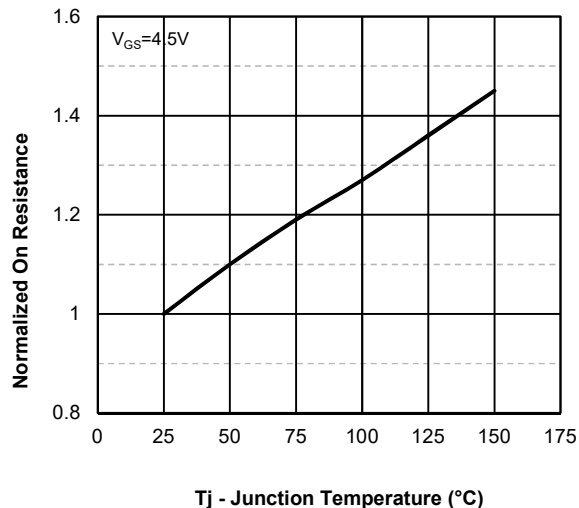


Fig3. Normalized On-Resistance Vs. Temperature

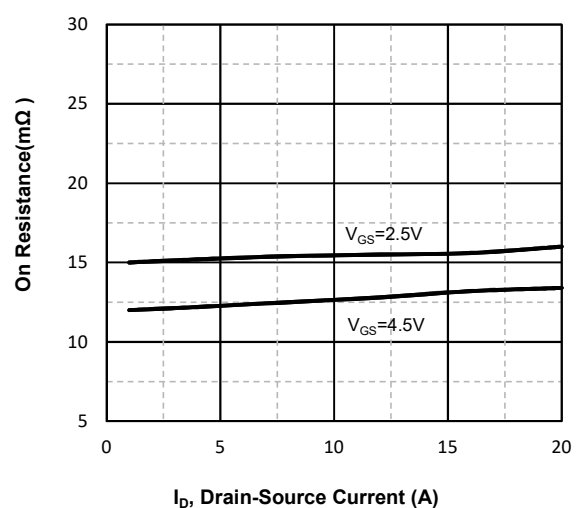


Fig4. On-Resistance Vs. Drain-Source Current

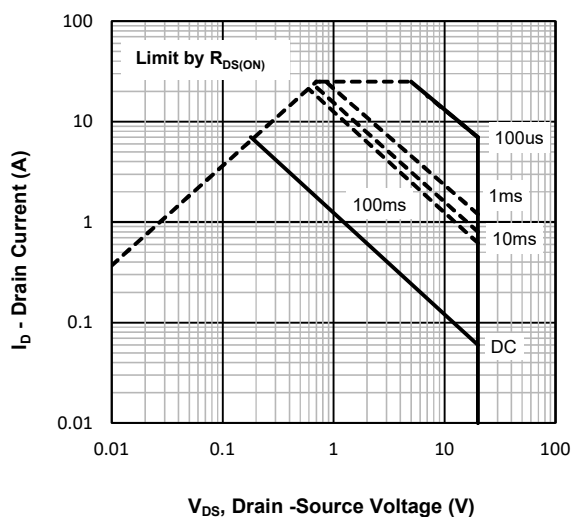


Fig5. Maximum Safe Operating Area

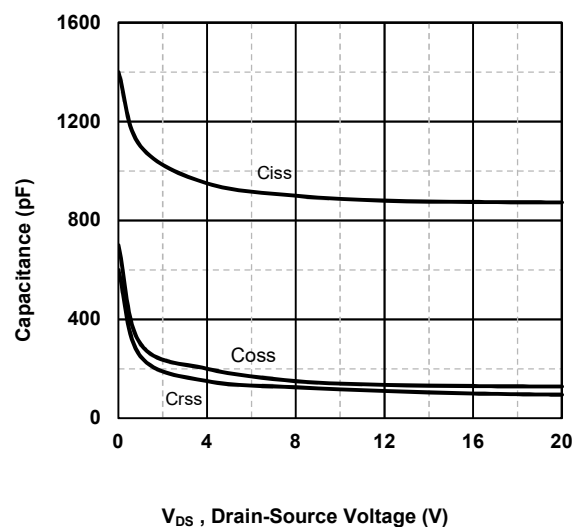
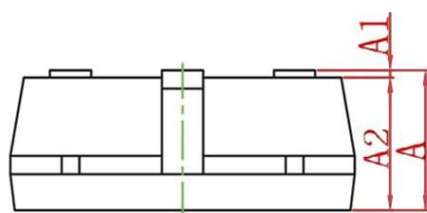
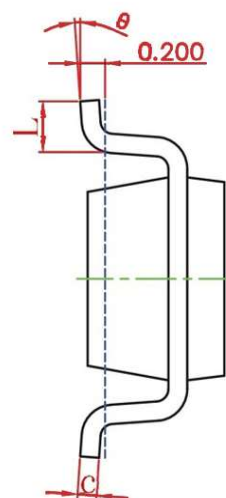
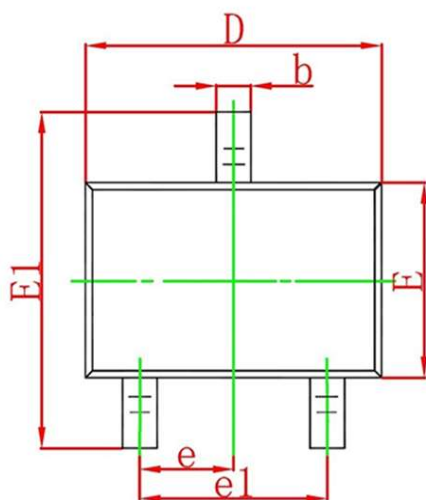


Fig6. Typical Capacitance Vs. Drain-Source Voltage

SOT-23-3L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.042	0.050
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.042	0.046
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.112	0.120
E	1.500	1.700	0.060	0.068
E1	2.650	2.950	0.106	0.118
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°