

Features

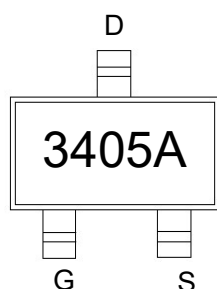
- Trench Power LV MOSFET technology
- High density cell design for Low $R_{DS(ON)}$
- High Speed switching

Application

- Battery protection
- Load switch
- Power management

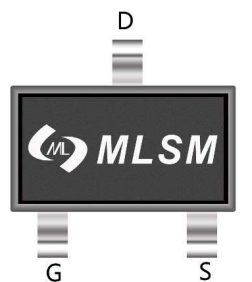
Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-30V	130mΩ@-10V	-2.6A
	180mΩ@-4.5V	

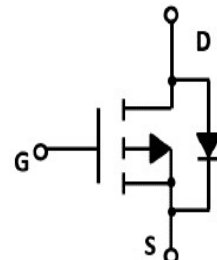


3405A: Device code

Marking and pin assignment



SOT-23-3L top view



Schematic diagram



Pb-Free



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		-30	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	-2.6	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$	-10	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$	-2.6	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$	1.25	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		113	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLSK3405A	SOT-23-3L	3405A	3,000	45,000	180,000	7"reel

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV(BR)DSS	Drain-Source Breakdown Voltage	VGS=0V, ID=-250μA	-30	–	–	V
IDSS	Zero Gate Voltage Drain Current	VDS=-30V, VGS=0V	--	--	-1	μA
IGSS	Gate-Body Leakage Current	VGS=±12V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1.3	–	-2.3	V
RDS(on)	Drain-Source On-State Resistance	VGS=-10V, ID=-3A	--	103	130	mΩ
		VGS=-4.5V, ID=-2A	--	137	180	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
CISS	Input Capacitance	VDS=-10V, VGS=0V, f=1MHz	--	366	–	pF
COSS	Output Capacitance		--	60	–	pF
CRSS	Reverse Transfer Capacitance		--	45	–	pF
Qg	Total Gate Charge	VDS=-15V, ID=-3A, VGS=-10V	--	7.5	–	nC
Qgs	Gate Source Charge		--	1.65	–	nC
Qgd	Gate Drain Charge		--	1.2	–	nC
Switching Characteristics						
td(on)	Turn-on Delay Time	VDS=-15V, ID=-1A, VGS=-10V, RG=2.5Ω	--	3.3	–	nS
tr	Turn-on Rise Time		--	17.5	–	nS
td(off)	Turn-Off Delay Time		--	18	–	nS
tf	Turn-Off Fall Time		--	23	–	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	TJ=25℃, IS=-2.6A	--	--	-1.2	V

Typical Operating Characteristics

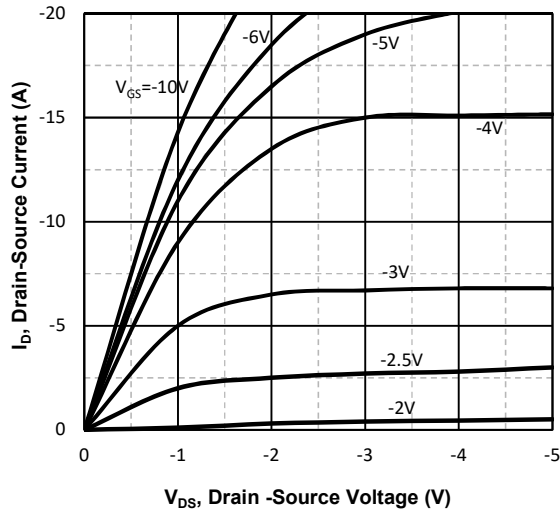


Fig1. Typical Output Characteristics

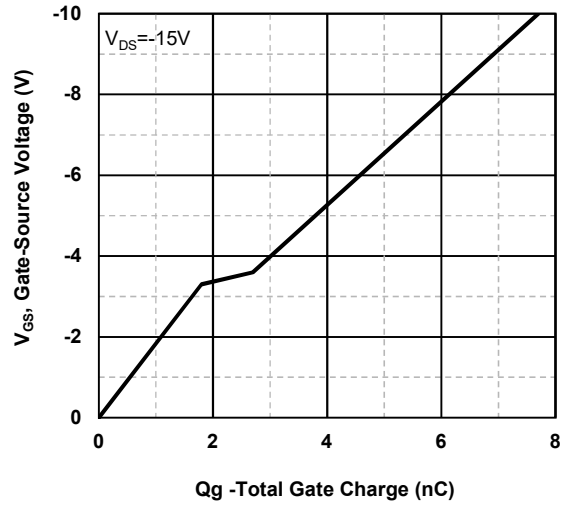


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

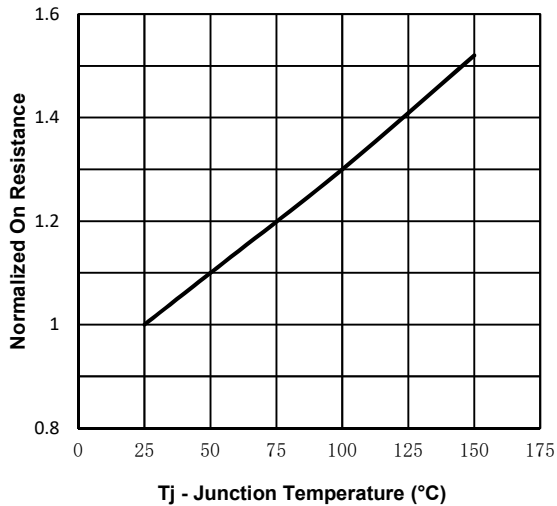


Fig3. Normalized On-Resistance Vs. Temperature

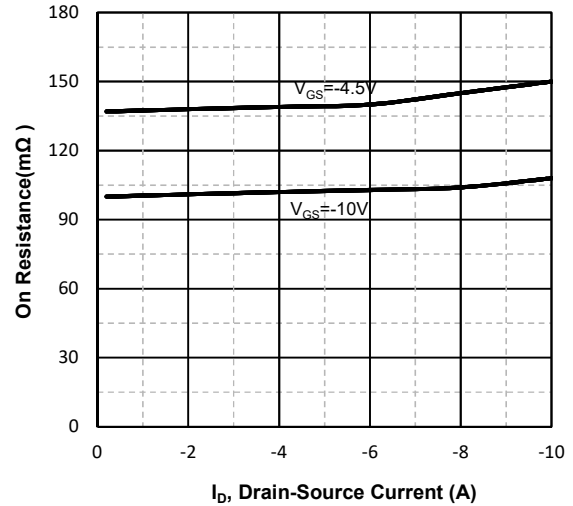


Fig4. On-Resistance Vs. Drain-Source Current

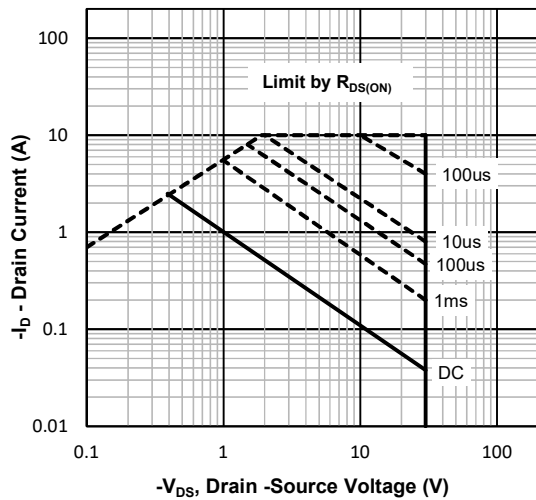


Fig5. Maximum Safe Operating Area

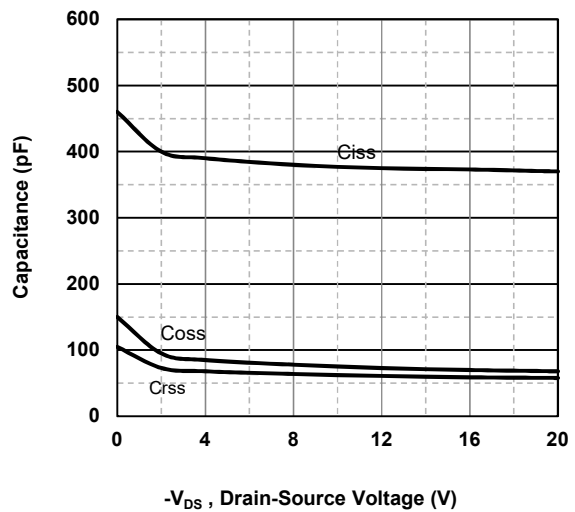
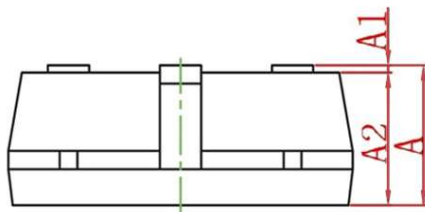
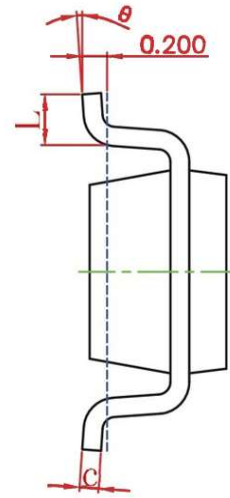
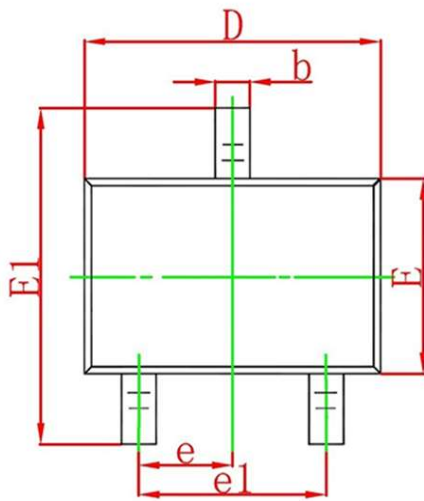


Fig6 Typical Capacitance Vs. Drain-Source

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°