

Features

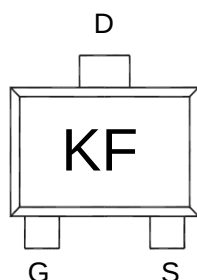
- Trench Power LV MOSFET technology
- High Power and current handing capability

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
20V	135mΩ@4.5V	0.75A
	163mΩ@2.5V	

Application

- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

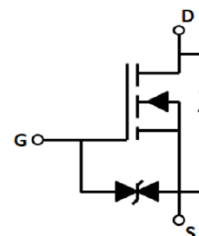


KF: Device code

Marking and pin assignment



SOT-723 top view



Schematic diagram



Halogen-Free

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		±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	0.75	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	3	A
I _D	Continuous Drain Current	Tc=25°C	0.75	A
P _D	Maximum Power Dissipation	Tc=25°C	0.15	W
R _{θJA}	Thermal Resistance Junction-to-Ambient		833	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLS3134KM	SOT-723	KF	8,000	120,000	480,000	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	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	--	--	±20	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.35	0.70	1.10	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =0.65A	--	135	380	mΩ
		V _{GS} =2.5V, I _D =0.55A	--	163	450	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	--	33	--	pF
C _{OSS}	Output Capacitance		--	21	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	10	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, I _D =0.5A, V _{GS} =4.5V	--	0.8	--	nC
Q _{gs}	Gate Source Charge		--	0.3	--	nC
Q _{gd}	Gate Drain Charge		--	0.17	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =0.5A, V _{GS} =4.5V, R _G =10Ω	--	4.2	--	nS
t _r	Turn-on Rise Time		--	19.1	--	nS
t _{d(off)}	Turn-Off Delay Time		--	10.3	--	nS
t _f	Turn-Off Fall Time		--	24	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=0.75A	--	--	1.2	V

Typical Operating Characteristics

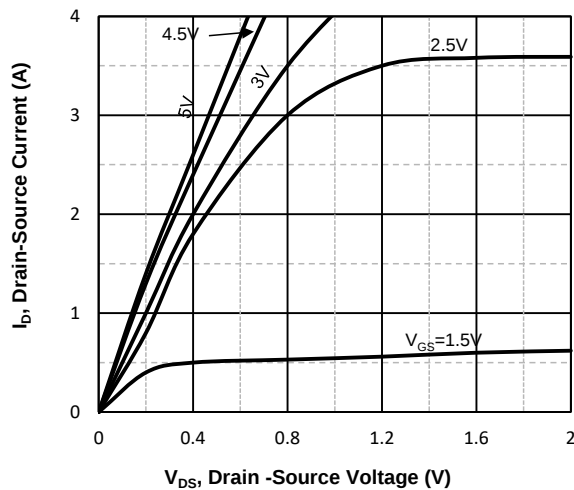


Fig1. Typical Output Characteristics

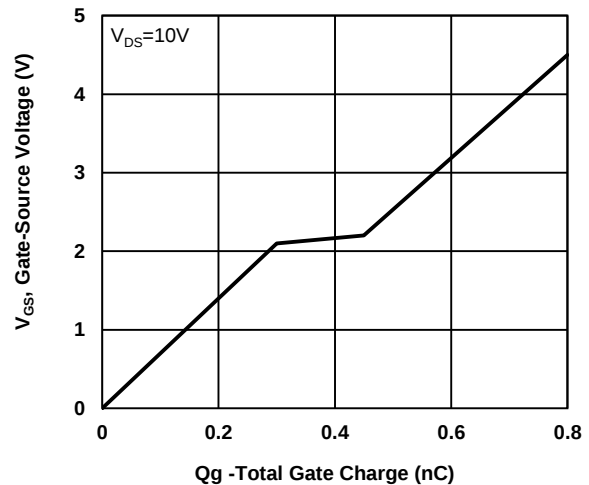


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

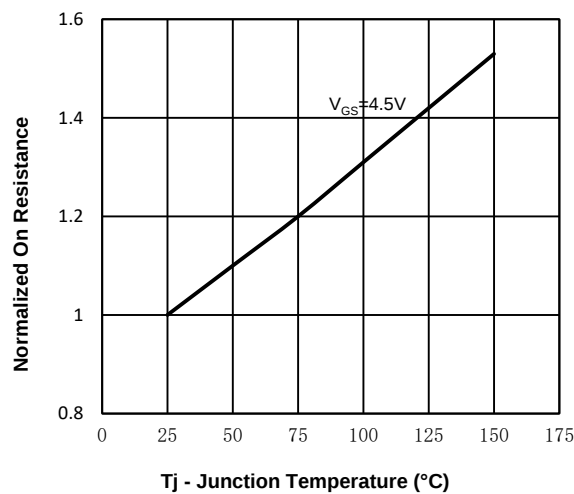


Fig3. Normalized On-Resistance Vs. Temperature

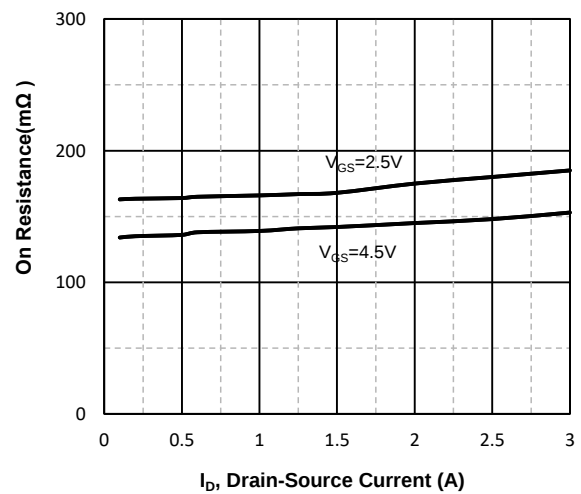


Fig4. On-Resistance Vs. Drain-Source Current

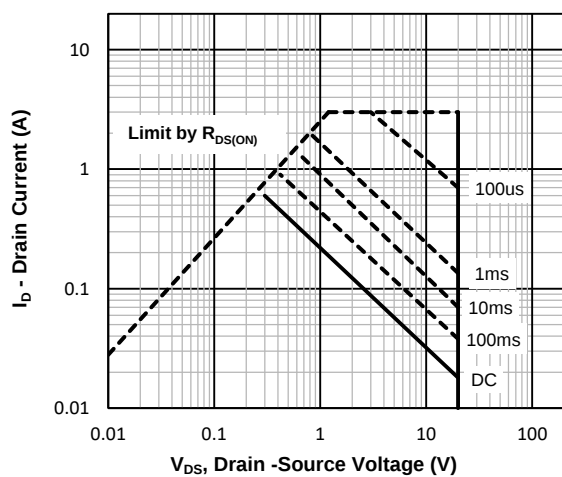


Fig5. Maximum Safe Operating Area

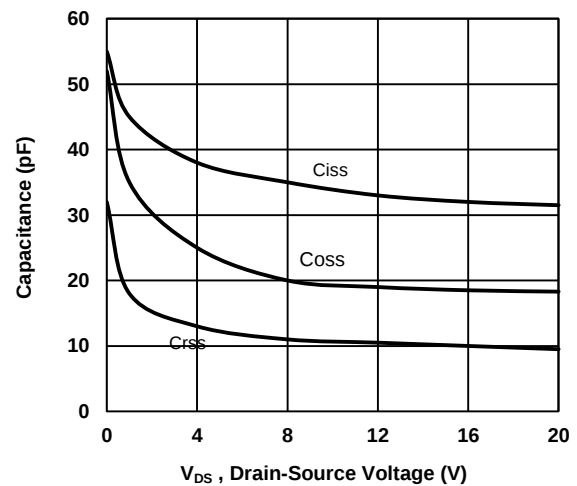
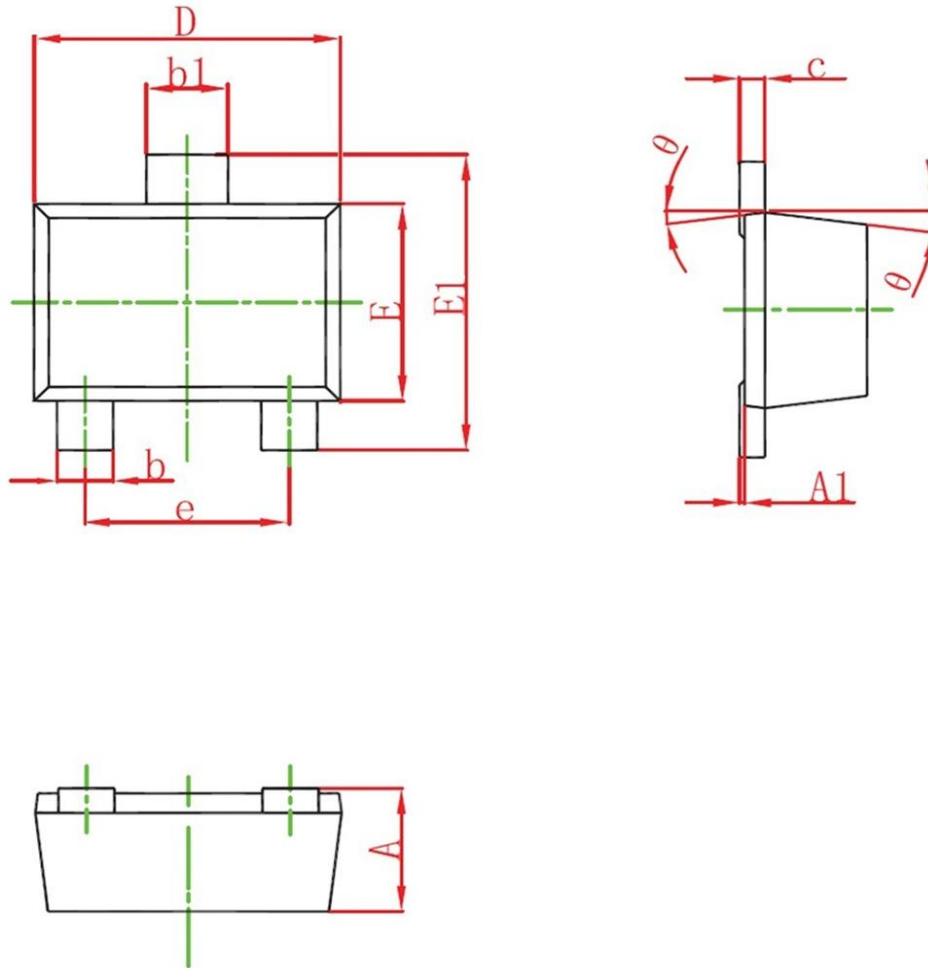


Fig6. Typical Capacitance Vs. Drain-Source Voltage

SOT-723 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.320	0.400	0.012	0.016
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.006	0.010
b1	0.270	0.370	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.046	0.050
E	0.750	0.850	0.030	0.034
E1	1.150	1.250	0.046	0.050
e	0.800TYP		0.020TYP	
θ	7°REF		7°REF	