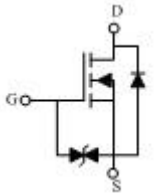
EFMICRO
Semiconductor Limited Company

EFM3134K

N-Channel Advanced Power MOSFET

• Product Summary

Part #	V_{DS}	$R_{DS(on).typ}$ ($@V_{GS}$=4.5V)	$R_{DS(on).typ}$ ($@V_{GS}$=2.5V)	I_D
EFM3134K	20V	260mΩ	310mΩ	0.75A



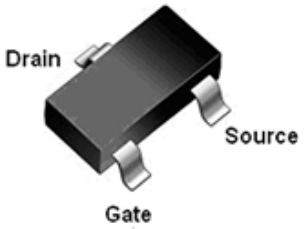
N- Channel MOSFET

• Features

- High-Side Switching
- Low On-Resistance
- Low Threshold
- Fast Switching Speed

•Application

- Drivers:Relays, Solenoids,
- Lamps, Hammers, Displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pagers



SOT-723

RoHS

HF

•Ordering Information:

Part NO.	EFM3134K
Marking	KF
Packing Information	REEL TAPE
Basic ordering unit (pcs)	8000

•Absolute Maximum Ratings (T_C=25℃)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous	I_D	0.75	A
Drain Current-Pulsed (Note 1)	I_{DM}	1.8	A
Maximum Power Dissipation	P_D	0.15	W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

•Thermal Characteristic

Thermal Resistance,Junction-to-Ambient (Note 2)	$R_{\theta JA}$	833	℃/W

● Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)

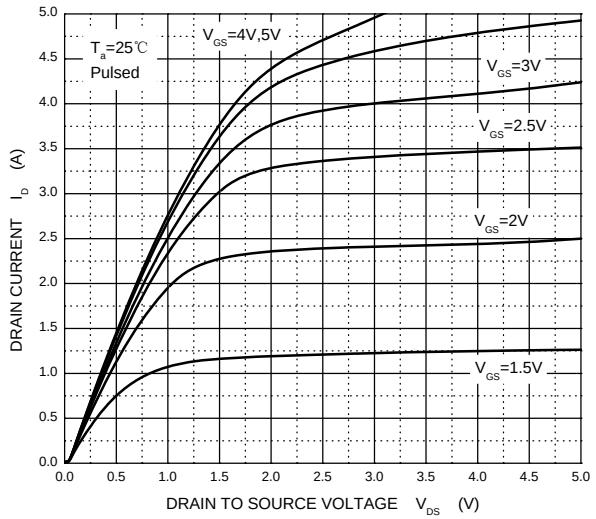
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250uA	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±10V V_{DS}=0V	--	--	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250uA	0.35	0.54	1.0	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=4.5V I_D=0.75A	--	260	380	mΩ
		V_{GS}=2.5V I_D=0.65A	--	310	450	mΩ
Dynamic Characteristics (Note4)						
Input Capacitance	C_{lss}	V_{DS}=16V V_{GS}=0V F=1.0MHz	--	79	--	PF
Output Capacitance	C_{oss}		--	13	--	PF
Reverse Transfer Capacitance	C_{rss}		--	9	--	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=10V I_D=0.5A V_{GS}=4.5V R_G=10Ω,	--	6.7	--	nS
Turn-on Rise Time	t_r		--	4.8	--	nS
Turn-Off Delay Time	$t_{d(off)}$		--	17.3	--	nS
Turn-Off Fall Time	t_f		--	7.4	--	nS
Total Gate Charge	Q_g	V_{DS}=16V I_D=0.65A V_{GS}=4.5V	--	1.3	--	nC
Gate-Source Charge	Q_{gs}		--	0.2	--	nC
Gate-Drain Charge	Q_{gd}		--	0.5	--	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	V_{GS}=0V I_S=0.75A	--	0.79	1.2	V
Diode Forward Current (Note 2)	I_S		--	--	0.75	A

Notes:

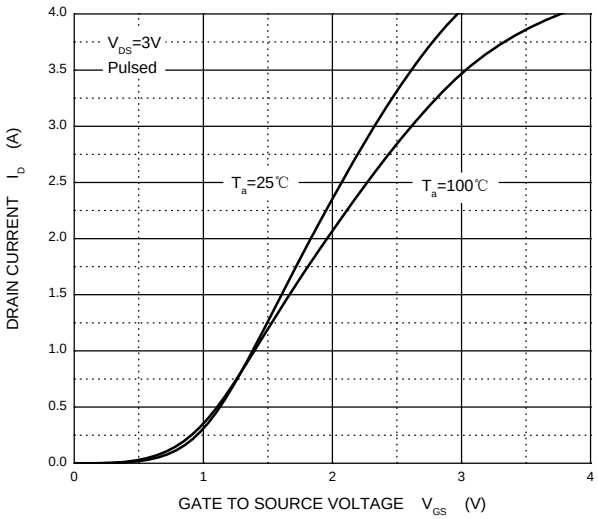
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at T_a=25℃.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.
4. These parameters have no way to verify.

• Typical Characteristics

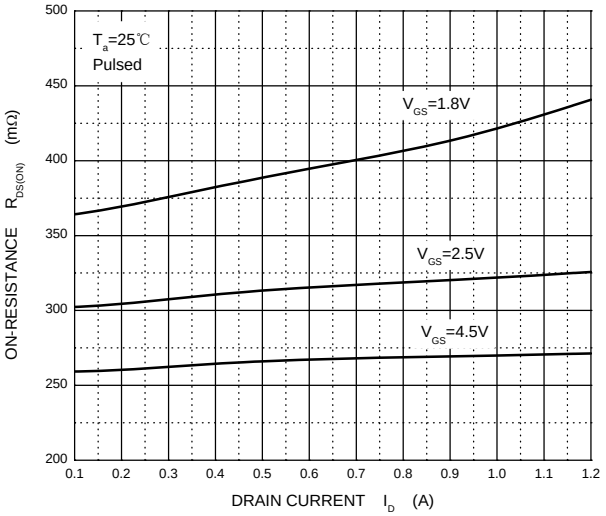
Output Characteristics



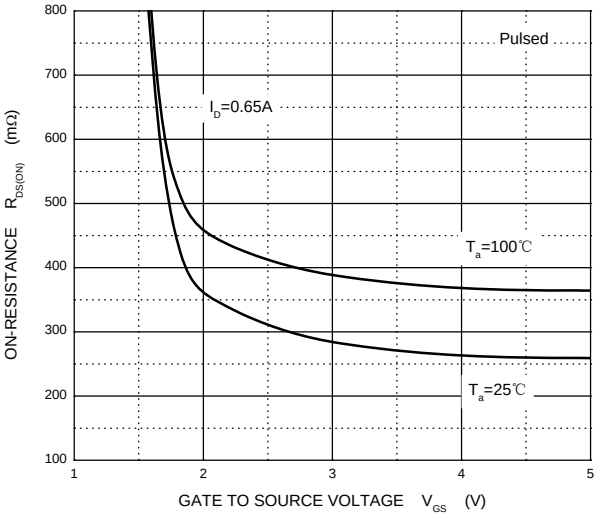
Transfer Characteristics



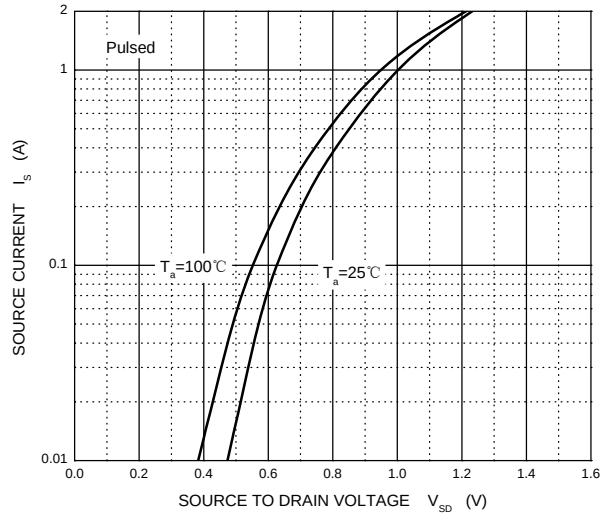
$R_{DS(ON)}$ —— I_D



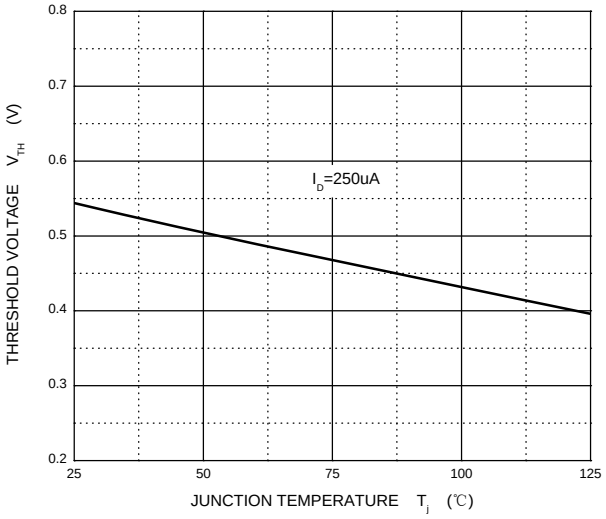
$R_{DS(ON)}$ —— V_{GS}



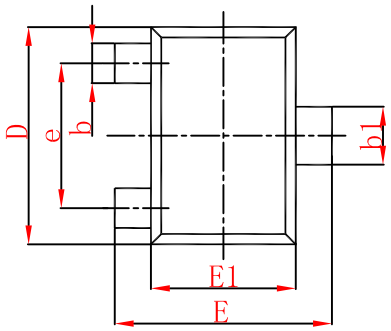
I_S —— V_{SD}

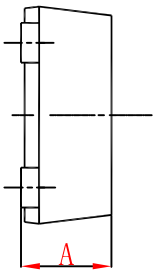


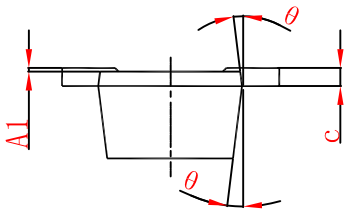
Threshold Voltage



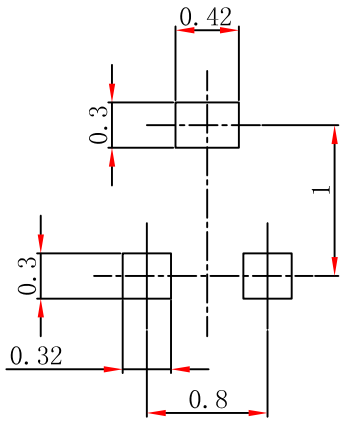
SOT-723 Package Outline Dimensions







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.