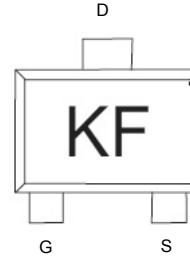


### Main Product Characteristics

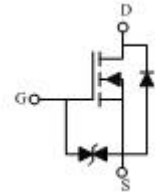
$V_{(BR)DSS}$	20V
$R_{DS(on)MAX}$	380mΩ@4.5V
	450mΩ@2.5V
	800mΩ@1.8V
$I_D$	0.75A



SOT-723



Marking and Pin Assignment



Schematic Diagram

### Features and Benefits

- Advanced MOSFET process technology
- Ideal for battery operated systems, load switching, power converters and other general purpose applications
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



### Description

The S3134K utilizes the latest techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supply and a wide variety of other applications.

### Absolute Maximum Ratings ( $T_A=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Typical Gate-Source Voltage	$V_{GS}$	±12	V
Continuous Drain Current <sup>1</sup>	$I_D$	0.75	A
Pulsed Drain Current ( $t_p=10\ \mu s$ )	$I_{DM}$	1.8	A
Power Dissipation <sup>1</sup>	$P_D$	150	mW
Thermal Resistance from Junction to Ambient <sup>1</sup>	$R_{\theta JA}$	833	$^{\circ}C/W$
Junction Temperature	$T_J$	150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55 to +150	$^{\circ}C$
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	$T_L$	260	$^{\circ}C$

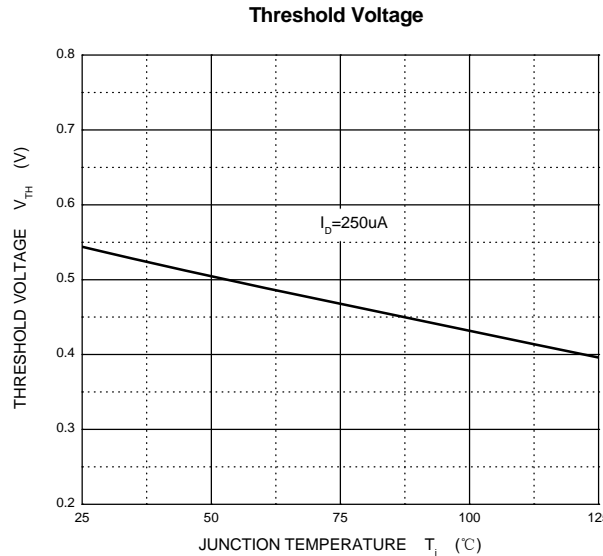
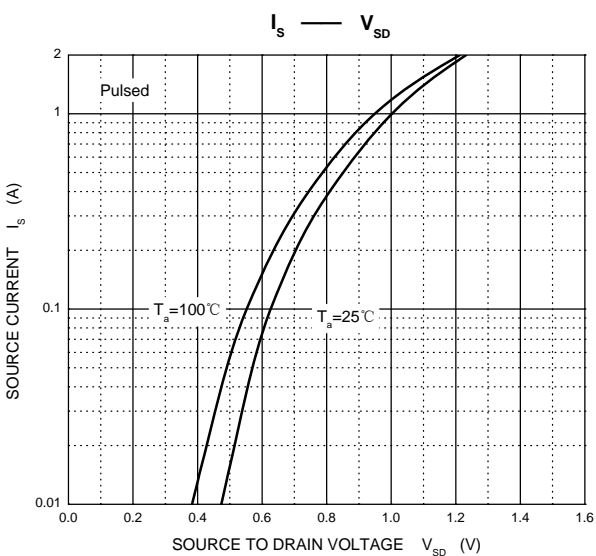
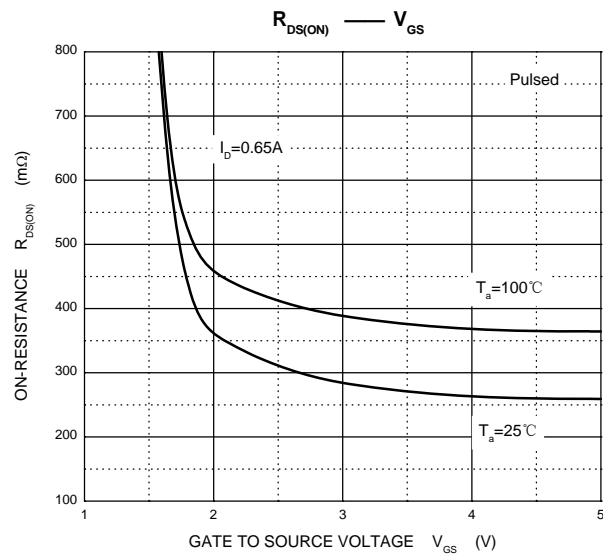
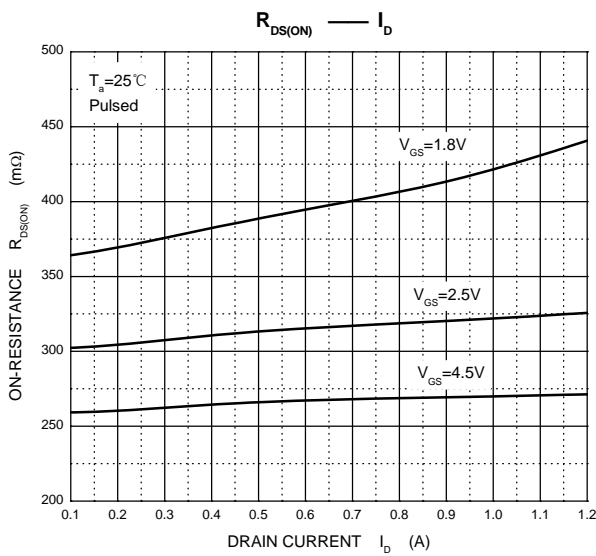
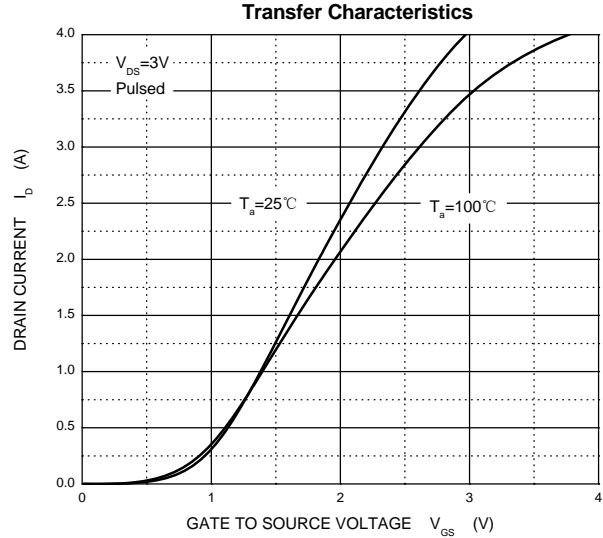
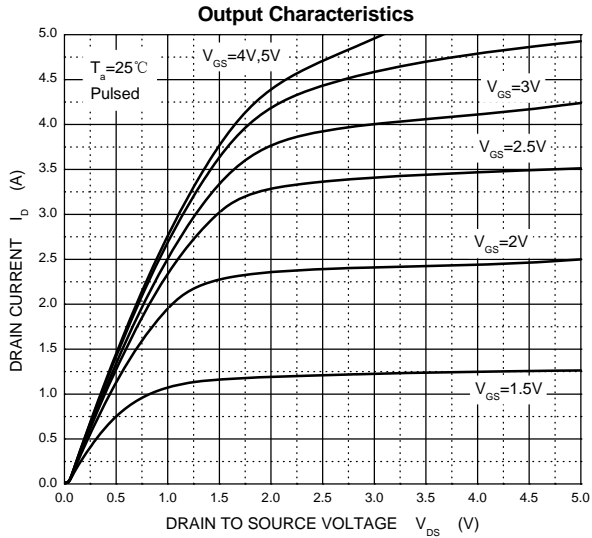
### Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	20	---	---	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 20V, V <sub>GS</sub> = 0V	---	---	1	μA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V	---	±4	±8	μA
Gate Threshold Voltage <sup>2</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	0.35	0.54	1.1	V
Drain-Source On-Resistance <sup>2</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 0.65A	---	270	380	mΩ
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 0.55A	---	320	450	mΩ
		V <sub>GS</sub> = 1.8V, I <sub>D</sub> = 0.45A	---	390	800	mΩ
Forward Transconductance <sup>2</sup>	g <sub>FS</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 0.8A	---	1.6	---	S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> = 0.15A, V <sub>GS</sub> = 0V	---	---	1.2	V
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 16V, V <sub>GS</sub> = 0V, f = 1MHz	---	79	120	pF
Output Capacitance	C <sub>oss</sub>		---	13	20	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		---	9	15	pF
<b>Switching Characteristics</b>						
Turn-On Delay Time <sup>3</sup>	t <sub>d(on)</sub>	V <sub>GS</sub> = 4.5V, V <sub>DS</sub> = 10V, I <sub>D</sub> = 500mA, R <sub>GEN</sub> = 10Ω	---	6.7	---	ns
Turn-On Rise Time <sup>3</sup>	t <sub>r</sub>		---	4.8	---	ns
Turn-Off Delay Time <sup>3</sup>	t <sub>d(off)</sub>		---	17.3	---	ns
Turn-Off Fall Time <sup>3</sup>	t <sub>f</sub>		---	7.4	---	ns

**Notes :**

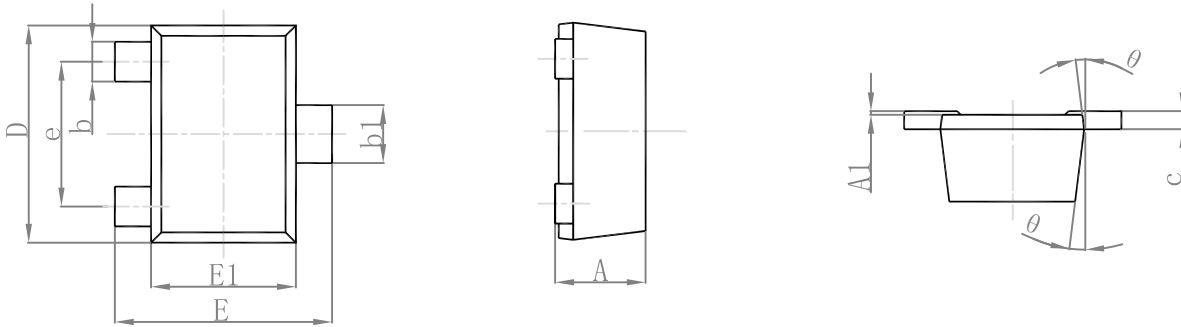
1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.

**Typical Electrical and Thermal Characteristic Curves**



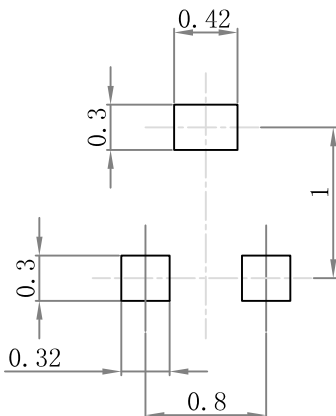
**Package Outline Dimensions**

**SOT-723**



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.	

**Suggested Pad Layout**



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.