BORN SEMICONDUCTOR

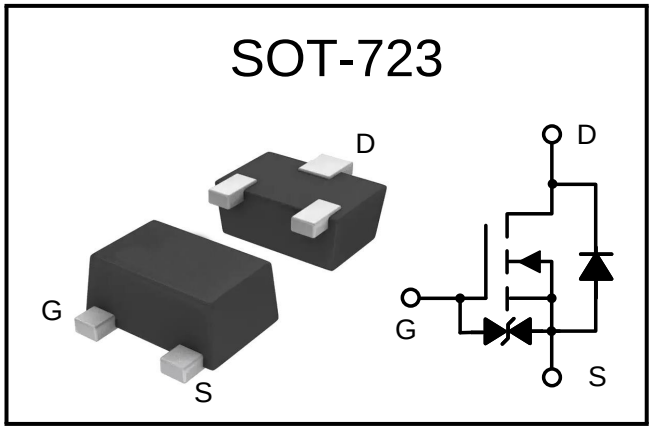
BM3134KE

20V N-Channel MOSFET

Features

- V_{DS}=20V
- I_D=0.5A
- $R_{DS(ON)}$ @V_{GS}=4.5V, TYP=220mΩ
- $R_{DS(ON)}$ @V_{GS}=2.5V, TYP=290mΩ

Package



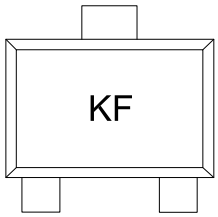
Application

- Load Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

General Description

- Lead Free Product is Acquired
- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- SOT-723 for Surface Mount Package.

Marking



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
BM3134KE	SOT-723	KF	8K	Tape and reel

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

Symbol	Parameter		Value	Unit
V_{DS}	Drain-Source Voltage		20	V
V_{GS}	Gate-Source Voltage		±12	V
I_D	Continuous Drain Current(1)	T_A = 25°C	0.5	A
P_D	Maximum Power Dissipation(1)	T_A = 25°C	0.15	W
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance (1)		883	°C/W
T_J	Junction Temperature Range		150	°C
T_{stg}	Storage Temperature Range		-55 to + 150	°C

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20V N-Channel MOSFET

Electrical Characteristics @T_J=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
BV_{DS}	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D =250uA	20	23	–	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 20V, V_{GS} = 0V	–	–	1	uA
I_{GSS}	Gate Body Leakage	V_{GS} = ±10V, V_{DS} = 0V	–	–	±10	uA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250uA	0.35	0.75	1.1	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS} = 4.5V, I_D = 0.5A	–	220	300	mΩ
		V_{GS} = 2.5V, I_D = 0.4A	–	290	400	
Dynamic Characteristics(4)						
C_{iss}	Input Capacitance	V_{DS} = 16V,	–	79	120	pF
C_{oss}	Output Capacitance	V_{GS} = 0V,	–	13	20	
C_{rss}	Reverse Transfer Capacitance	f = 1.0MHZ	–	9	15	
Switching Characteristics(3)(4)						
$t_{d(on)}$	Turn-On Delay Time	V_{DS} = 10V,	–	6.7	–	ns
t_r	Turn-On Rise Time	I_D = 500mA,	–	4.8	–	
$t_{d(off)}$	Turn-Off Delay Time	V_{GS} = 4.5V,	–	17.3	–	
t_f	Turn-Off Fall Time	R_G = 10Ω	–	7.4	–	
Source Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage	I_S = 0.15A,V_{GS} = 0V	–	–	1.2	V

Note(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.

(4) :Guaranteed by design, not subject to producting.

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Typical Performance Characteristics(T_J = 25 °C, unless otherwise noted)

Figure 1 :Typical Output Characteristics

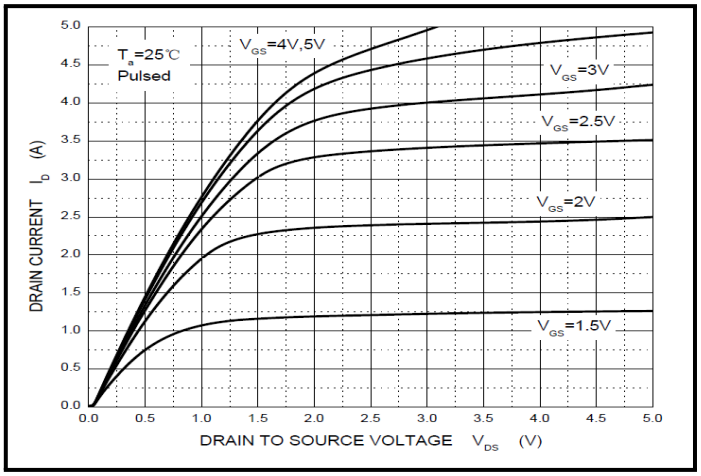


Figure 2 :Transfer Characteristics

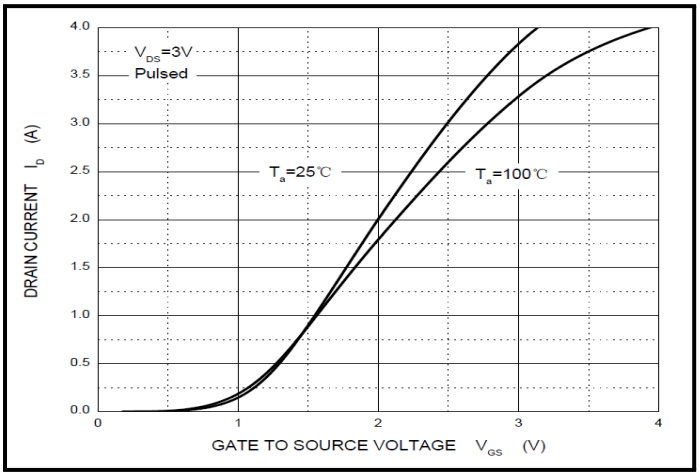


Figure 3 : $R_{DS(ON)}$ vs. I_D

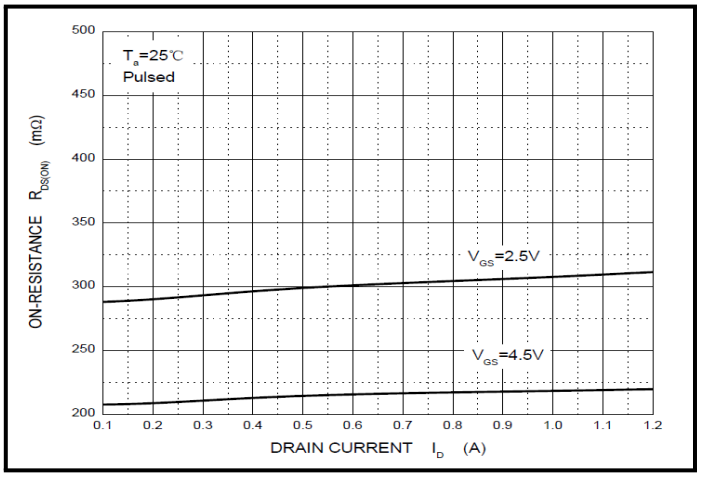


Figure 4 :$R_{DS(ON)}$ vs. V_{GS}

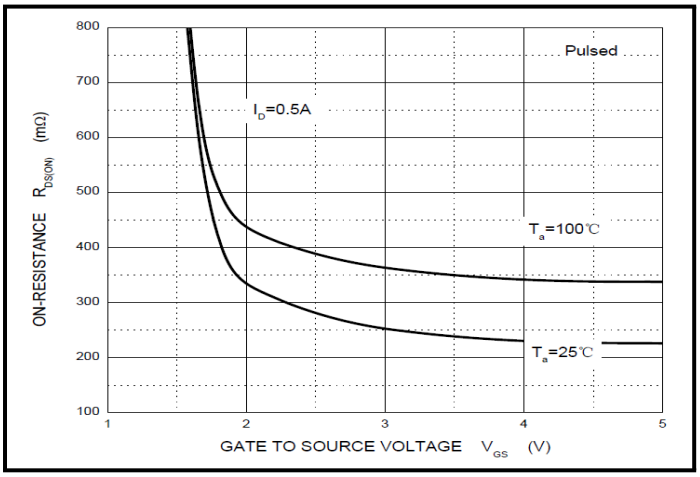


Figure 5 : I_S vs. V_{SD}

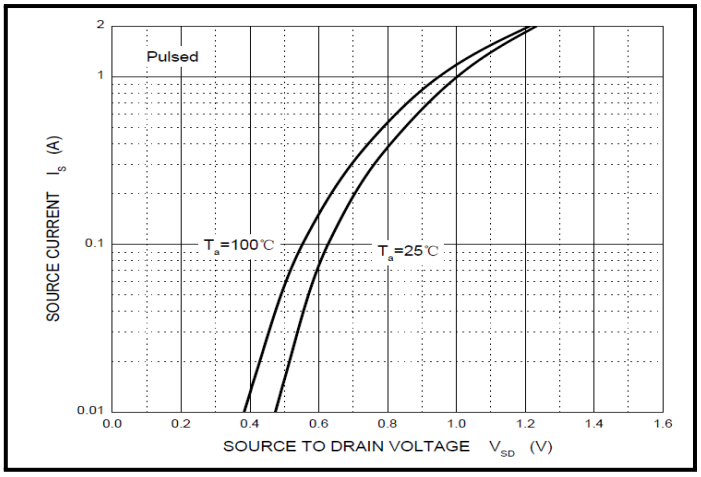
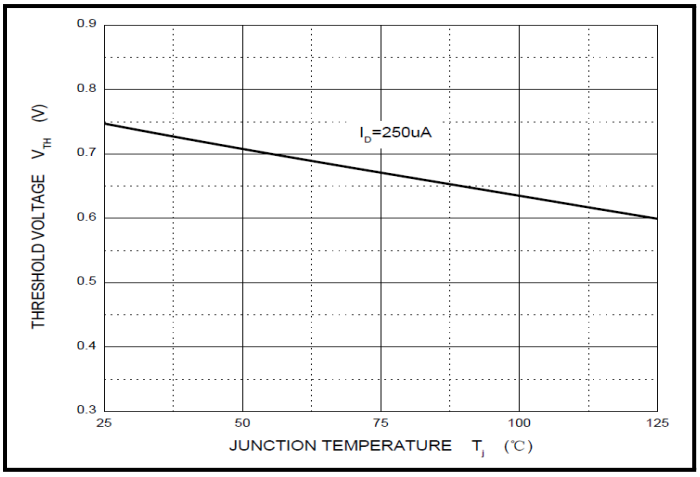


Figure 6 : Threshold Voltage



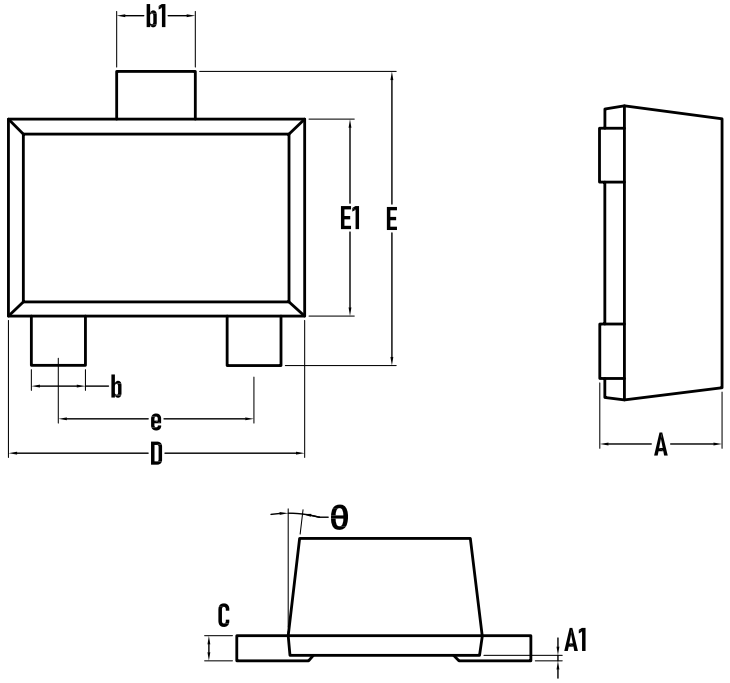
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Outline Drawing – SOT-723



SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.350	–	0.490
A1	0.000	–	0.100
b	0.170	0.220	0.270
b1	0.225	–	0.370
C	0.080	–	0.150
D	1.150	–	1.250
E	1.150	–	1.250
E1	0.750	–	0.850
e	0.800TYP.		
θ	0°	–	7°

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