

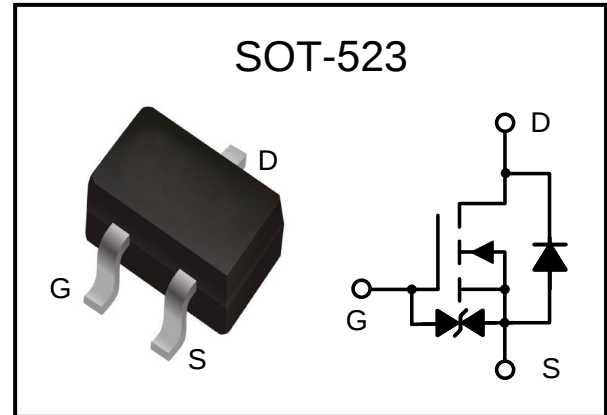
BM3134KT

20V N-Channel MOSFET

Features

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

Package



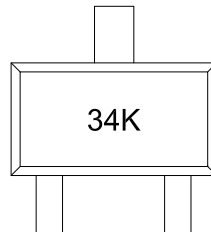
Application

- 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-523 for Surface Mount Package.

Marking



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
BM3134KT	SOT-523	34K	3K	Tape and reel

Absolute Maximum Ratings (@ $T_A=25^\circ C$ 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⁾	$T_A = 25^\circ C$	0.5	A
P_D	Maximum Power Dissipation ⁽¹⁾	$T_A = 25^\circ C$	0.15	W
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance ⁽¹⁾		883	$^\circ C/W$
T_J	Junction Temperature Range		150	$^\circ C$
T_{stg}	Storage Temperature Range		-55 to + 150	$^\circ C$



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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	–	±2	±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, V _{GS} = 0V, f = 1.0MHZ	–	79	120	pF
C _{oss}	Output Capacitance		–	13	20	
C _{rss}	Reverse Transfer Capacitance		–	9	15	
Switching Characteristics ⁽³⁾ ⁽⁴⁾						
t _{d(on)}	Turn-On Delay Time	V _{DS} = 10V, I _D = 500mA, V _{GS} = 4.5V, R _G = 10Ω	–	6.7	–	ns
t _r	Turn-On Rise Time		–	4.8	–	
t _{d(off)}	Turn-Off Delay Time		–	17.3	–	
t _f	Turn-Off Fall Time		–	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 producing.



Typical Performance Characteristics($T_J = 25^\circ\text{C}$, unless otherwise noted)

Figure 1 :Typical Output Characteristics

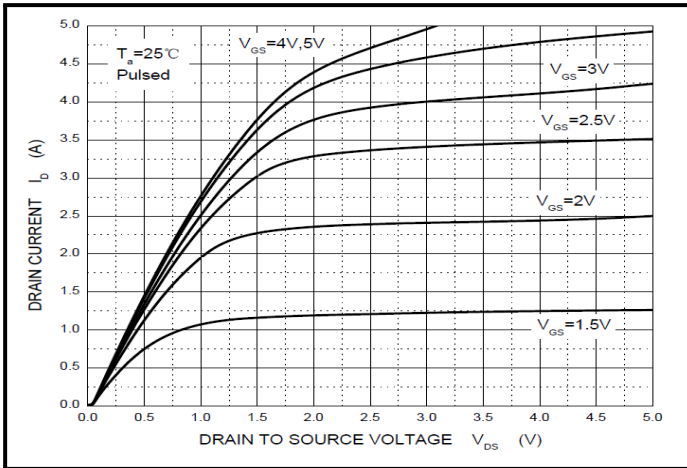


Figure 2 :Transfer Characteristics

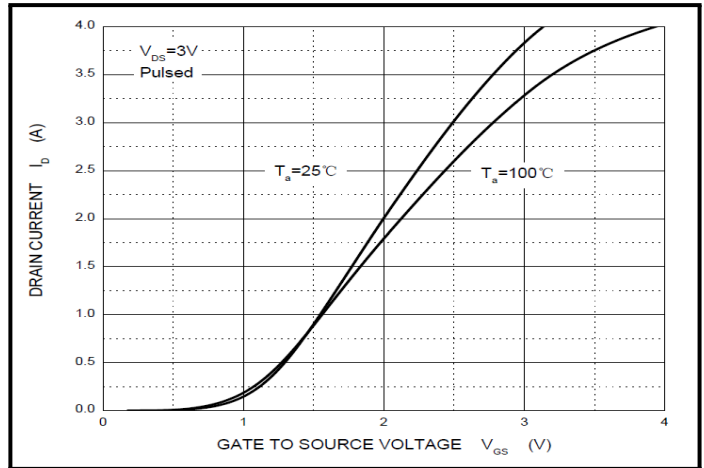


Figure 3 : $R_{DS(ON)}$ vs. I_D

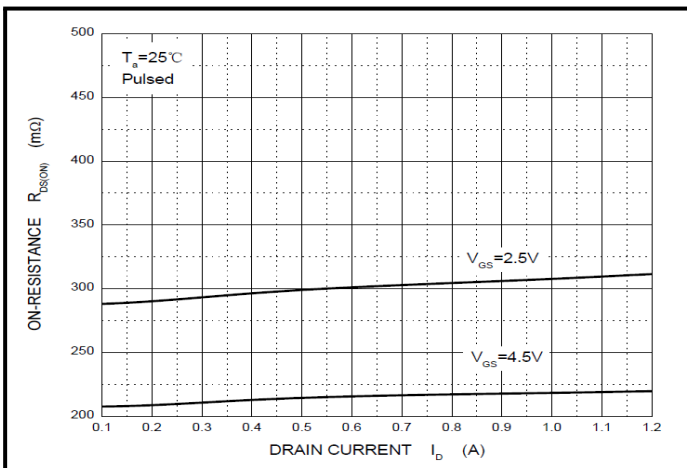


Figure 4 : $R_{DS(ON)}$ vs. V_{GS}

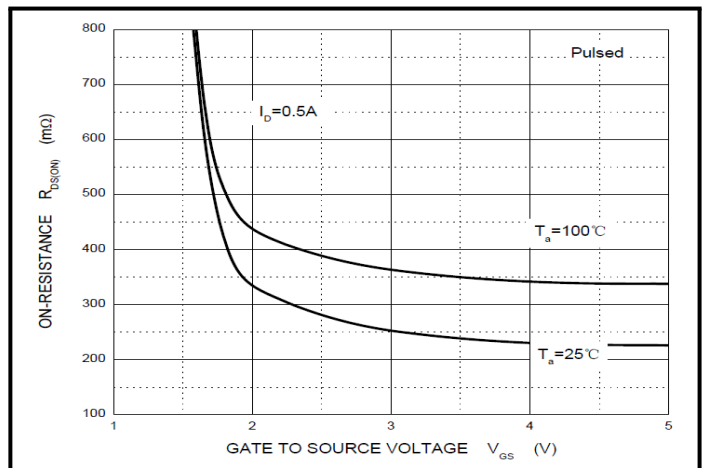


Figure 5 : I_S vs. V_{SD}

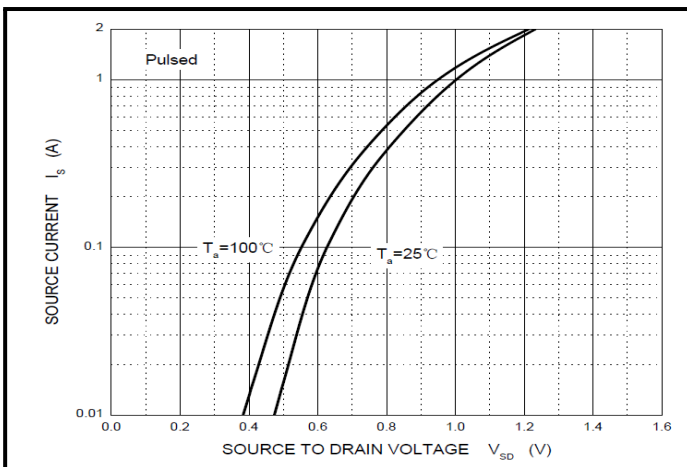
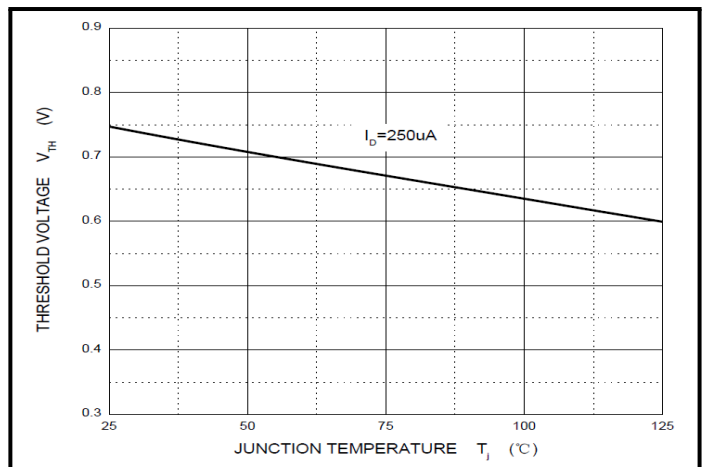


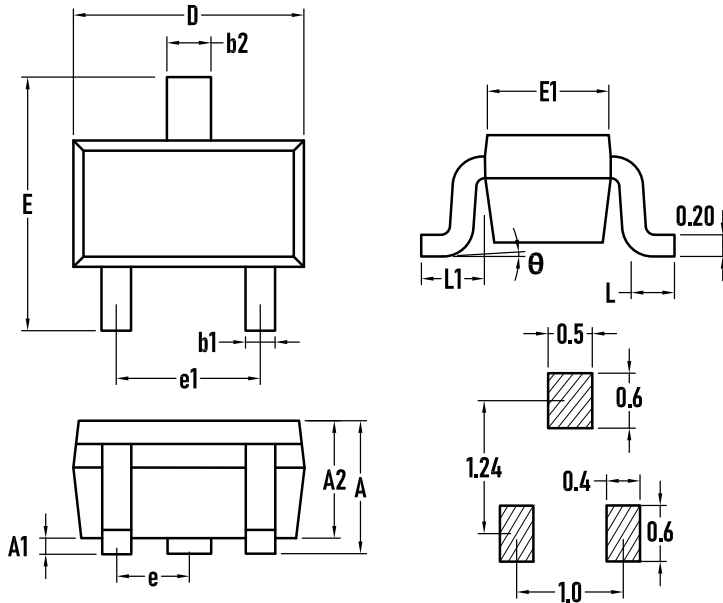
Figure 6 : Threshold Voltage



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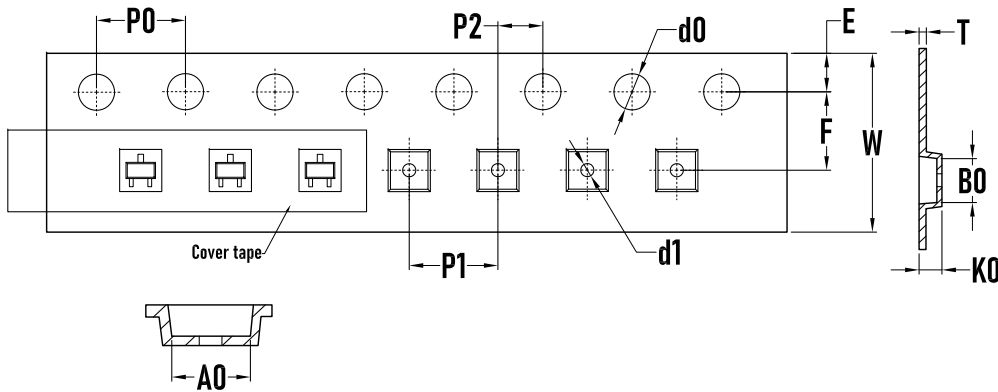
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Outline Drawing – SOT-523



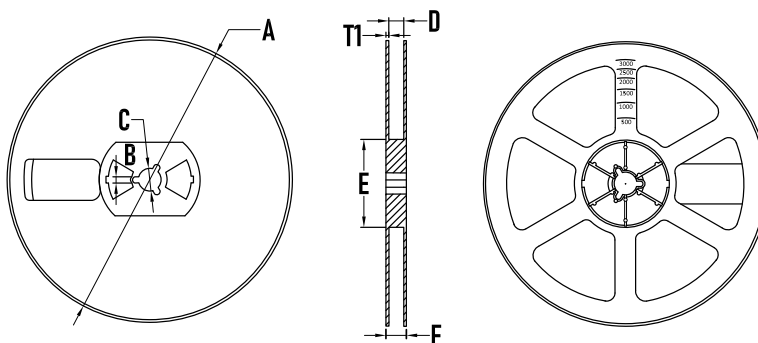
SYMBOL	MILLIMETER		
	MIN	TYP	MAX
A	0.70	0.80	0.90
A1	0.00	0.05	0.10
A2	0.70	0.75	0.80
b1	0.15	0.22	0.29
b2	0.25	0.32	0.39
D	1.50	1.60	1.70
E	1.45	1.60	1.75
E1	0.70	0.80	0.90
e	0.50(TPY.)		
e1	0.90	1.00	1.10
L	0.26	0.36	0.46
L1	0.40(REF)		
θ	0°	4°	8°

Packaging Tape - SOT-523



SYMBOL	MILLIMETER
A0	1.78±0.05
B0	1.78±0.05
d0	1.50±0.10
d1	0.50±0.10
E	1.75±0.10
F	3.50±0.05
K0	0.69±0.05
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
W	8.00±0.20
T	0.20±0.02

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	2.7±0.2
C	13.5±0.2
D	9.6±0.3
E	54.5±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

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Specifications are subject to change without notice.

Please refer to <http://www.born-tw.com> for current information.

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