

BM100N02

N-Channel MOSFET

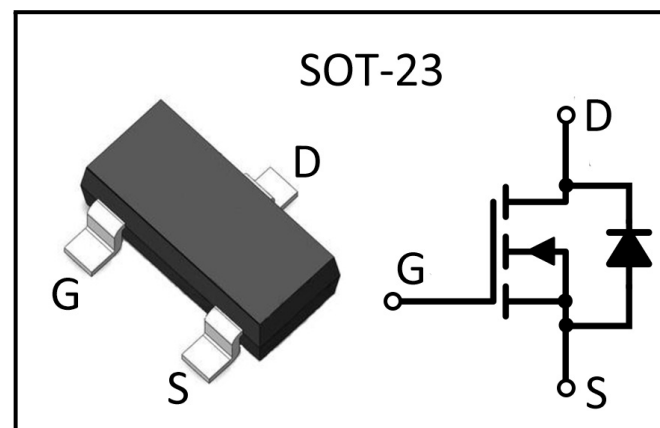
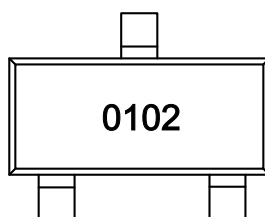
Features

- $V_{DS}=100V$
- $I_D=2A$
- $R_{DS(ON)}@V_{GS}=10V, TYP=230m\Omega$
- $R_{DS(ON)}@V_{GS}=4.5V, TYP=240m\Omega$

Description

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- SOT-23 for Surface Mount Package.

Marking



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
BM100N02	SOT-23	0102	3K	Tape and reel

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

Symbol	Parameter		Value	Unit
BV_{DSS}	Drain-Source Voltage		100	V
V_{GS}	Gate-Source Voltage		± 20	V
I_D	Continuous Drain Current		2	A
I_{DM}	Pulsed Drain Current		8	A
P_D	Maximum Power Dissipation	$T_A = 25^{\circ}C$	1.25	W
T_J	Junction Range		150	$^{\circ}C$
T_{stg}	Storage Temperature Range		-55 to + 150	$^{\circ}C$



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Electrical Characteristics @T_A=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static						
BV _{DS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250uA	100	–	–	V
R _{DS(on)}	Drain-Source On-State Resistance ⁽¹⁾	V _{GS} = 10V, I _D = 2A	–	230	290	mΩ
		V _{GS} = 4.5V, I _D = 2A	–	240	330	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250uA	1.0	1.6	2.5	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 100V, V _{GS} = 0V	–	–	1	uA
I _{GSS}	Gate Body Leakage	V _{GS} = ±20V, V _{DS} = 0V	–	–	±100	nA
Dynamic						
t _{d(on)}	Turn-On Delay Time	V _{DS} = 50V, R _{GEN} = 6Ω I _D = 2A	–	10	–	ns
t _{d(off)}	Turn-Off Delay Time		–	30	–	
C _{iss}	Input Capacitance	V _{DS} = 15V, V _{GS} = 10V f=1MHZ	–	326	–	pF
C _{oss}	Output Capacitance		–	38	–	
Source-Drain Diode						
V _{SD}	Diode Forward Voltage	I _S = 2.0A, V _{GS} = 0V,	–	–	1.2	V

Notes:(1)Pulse test pulse width <=300us,duty cycle <= 2%.



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

Figure 1 :Output Characteristics

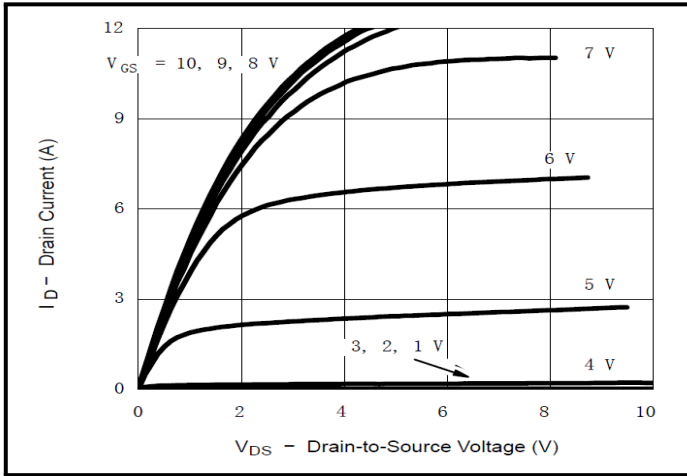


Figure 2 :Transfer Characteristics

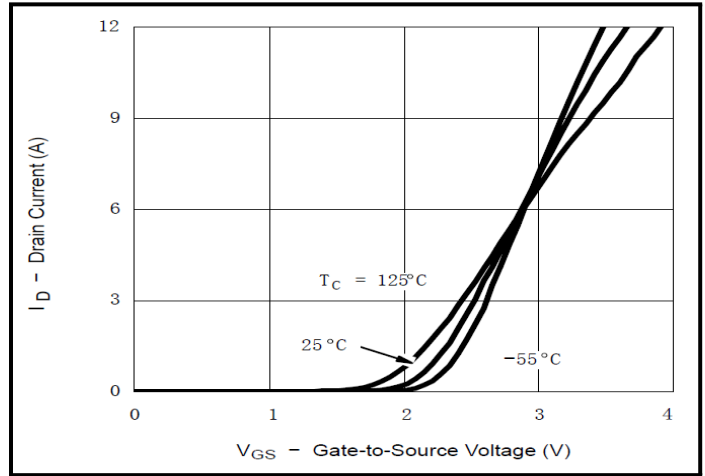


Figure 3 :On-Resistance vs. Drain Current

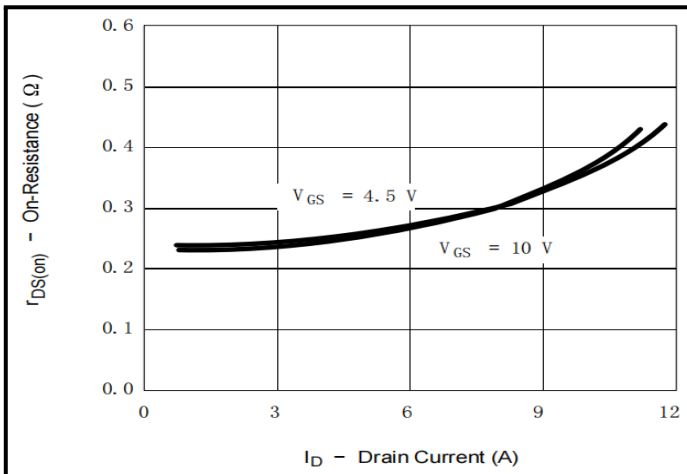


Figure 4 :Capacitance

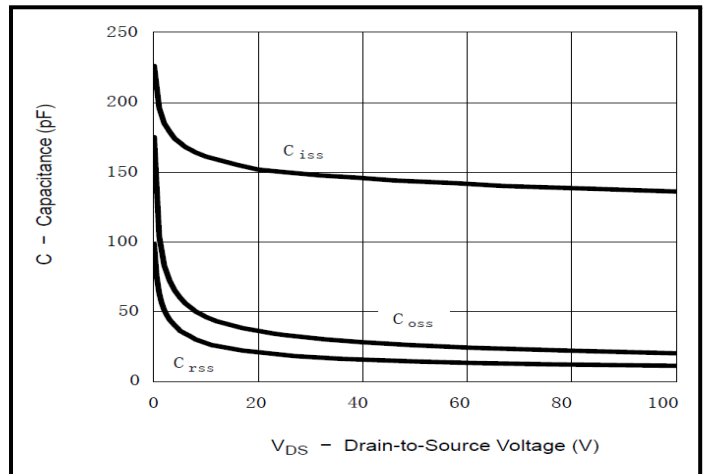


Figure 5 :Gate Charge

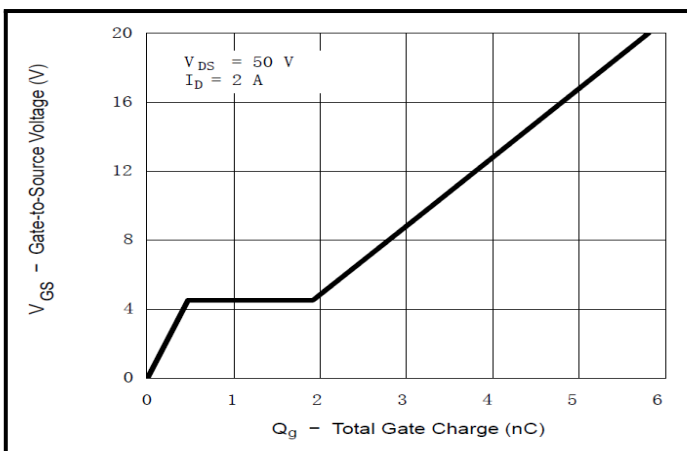
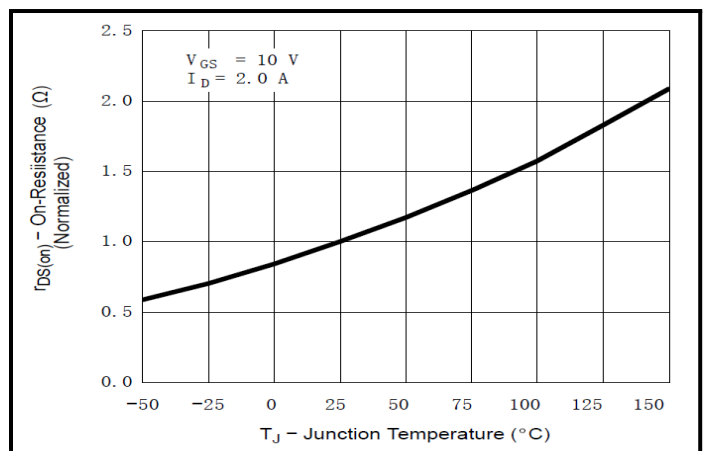


Figure 6 :On-Resistance vs. Junction Temperature



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Figure 7 :Source-Drain Diode Forward Voltage

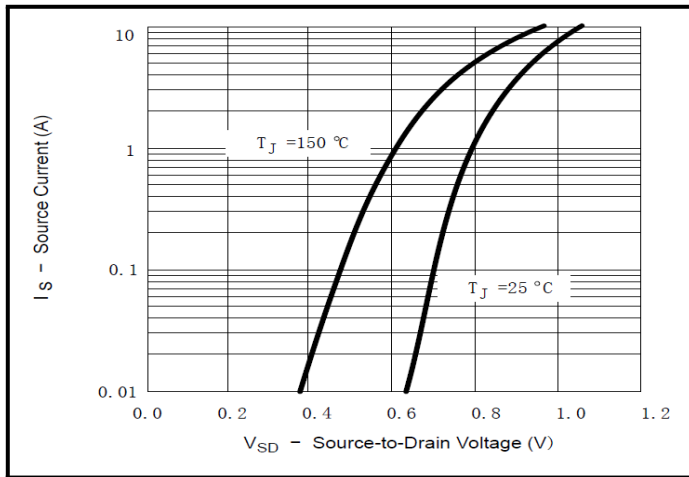


Figure 8 :Threshold Voltage

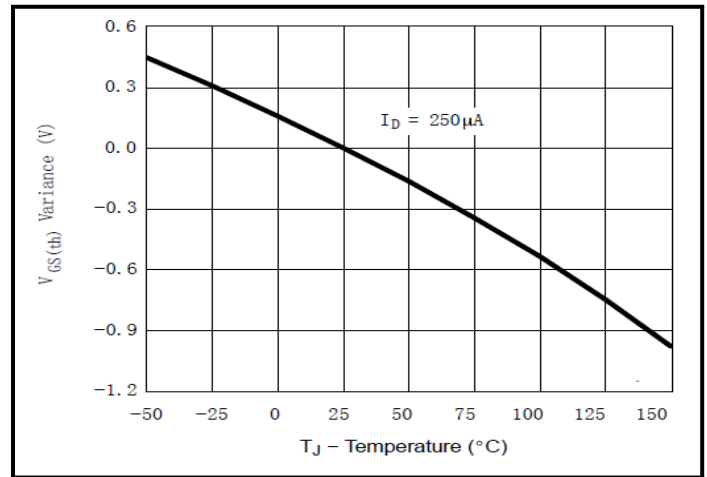
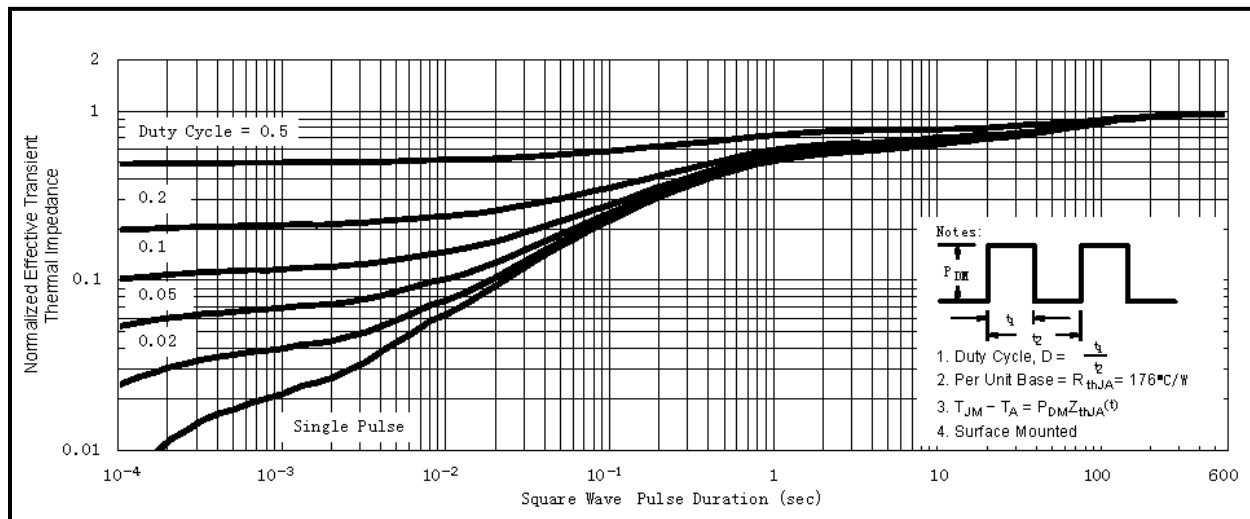


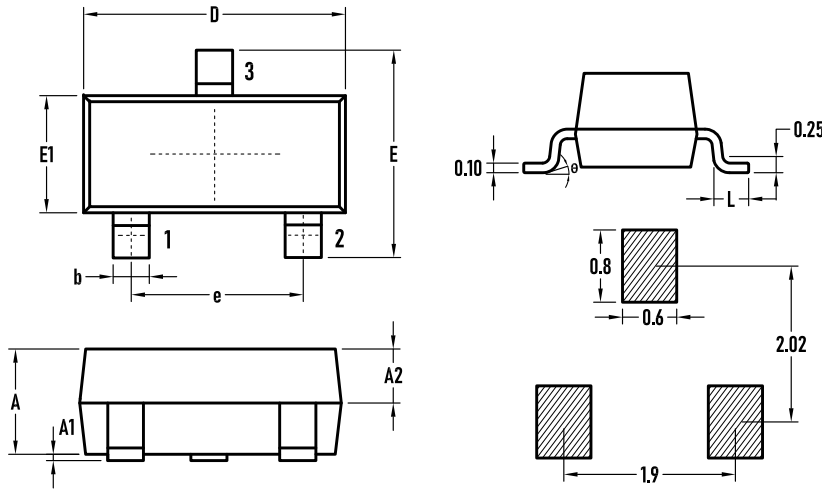
Figure 9 :Normalized Thermal Transient Impedance, Junction-to-Ambient



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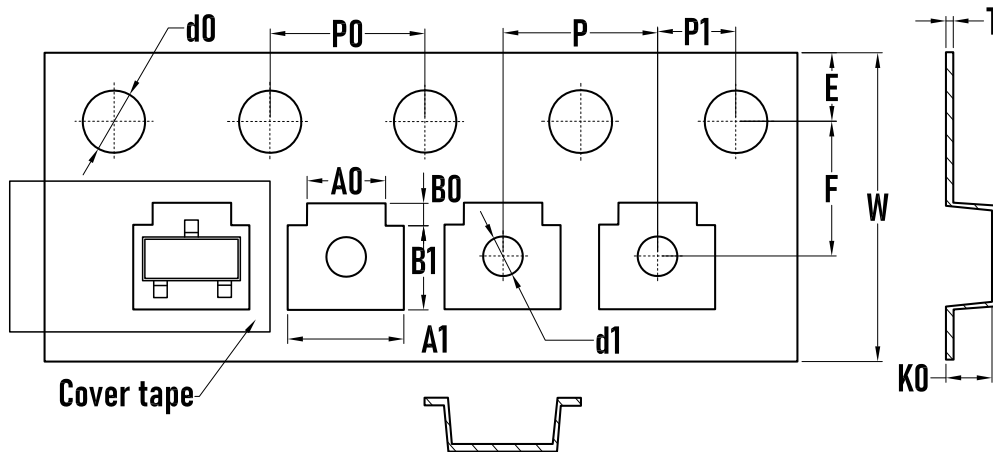
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Outline Drawing –SOT-23



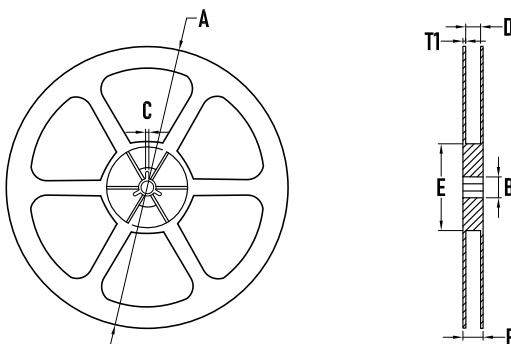
SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.90	1.00	1.10
A1	0.01	—	0.10
A2	0.50	0.60	0.70
D	2.80	2.90	3.00
b	0.25	0.35	0.45
E	2.10	2.30	2.50
E1	1.20	1.30	1.40
e	1.80	1.90	2.00
L	0.25	0.35	0.45
θ	0	—	8°

Packaging Tape - SOT-23



SYMBOL	MILLIMETER
A0	2.10±0.10
A1	3.10±0.10
B0	0.65±0.10
B1	2.75±0.10
d0	1.55±0.10
d1	1.00±0.05
E	1.75±0.10
F	3.50±0.10
K0	1.10±0.10
P	4.00±0.10
P0	4.00±0.10
P1	2.00±0.10
W	8.00±0.30
T	0.20 ±0.05

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	3.1
C	13.50
D	9.6±0.3
E	75±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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