

BMS2302

N-Channel MOSFET

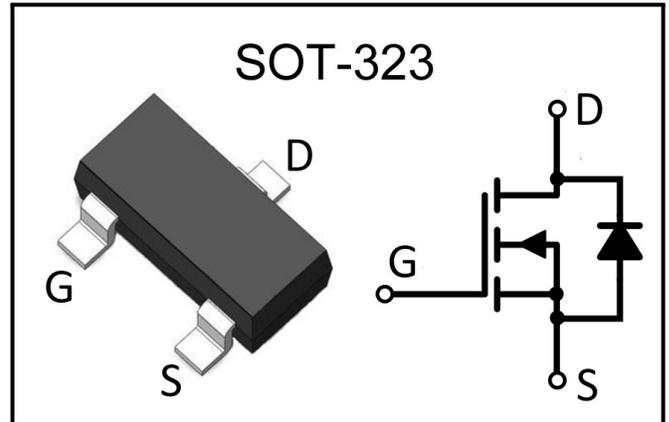
Features

- $V_{DS}=20V$
- $I_D=2.1A$
- $R_{DS(ON)}$ @ $V_{GS}=4.5V$, TYP=68m Ω
- $R_{DS(ON)}$ @ $V_{GS}=2.5V$, TYP=115m Ω

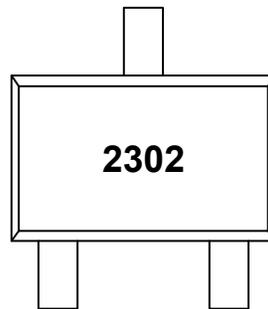
Description

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- SOT-323 for Surface Mount Package.

Package



Marking



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
BMS2302	SOT-323	2302	3K	Tape and reel

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

Symbol	Parameter	Value	Unit
BV_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 8	V
I_D	Continuous Drain Current	2.1	A
I_S	Continuous source current (diode conduction)	0.6	A
P_D	Power Dissipation	0.2	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient ($t_s \leq 5s$)	625	$^{\circ}C/W$
T_J	Operating junction	150	$^{\circ}C$
T_{stg}	storage temperature range	-55 to 150	$^{\circ}C$

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Specifications are subject to change without notice.

Please refer to <http://www.born-tw.com> for current information. **Revision: 2022-Jan-1-A**



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N-Channel MOSFET

Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise noted

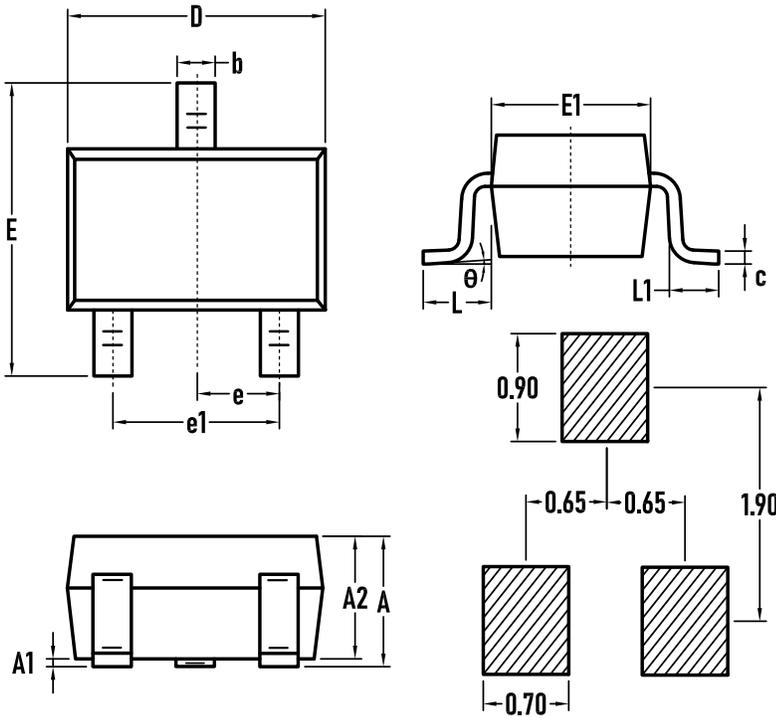
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 10\mu A$	20	–	–	V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 50\mu A$	0.65	0.95	1.2	V
I_{GSS}	Gate Body Leakage	$V_{GS} = \pm 8V, V_{DS} = 0V$	–	–	± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 20V, V_{GS} = 0V$	–	–	1	μA
$R_{DS(on)}$	Drain-Source On-State Resistance ⁽¹⁾	$V_{GS} = 4.5V, I_D = 3.6A$	–	59	68	m Ω
		$V_{GS} = 2.5V, I_D = 3.1A$	–	70	115	
g_{fs}	Forward transconductance ⁽¹⁾	$V_{DS} = 5V, I_D = 3.6A$	–	8	–	S
Dynamic Characteristics						
Q_g	Total Gate Charge	$V_{DS} = 10V$	–	4.0	10	nC
Q_{gs}	Gate-Source Charge	$I_D = 3.6A,$	–	0.65	–	
Q_{gd}	Gate-Drain Charge	$V_{GS} = 4.5V$	–	1.5	–	
C_{iss}	Input Capacitance ⁽²⁾	$V_{DS} = 10V,$	–	300	–	pF
C_{oss}	Output Capacitance ⁽²⁾	$V_{GS} = 0V,$	–	120	–	
C_{rss}	Reverse Transfer Capacitance ⁽²⁾	$f = 1.0MHz$	–	80	–	
Switching Characteristics⁽²⁾						
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 10V, I_D = 3.6A$	–	7	15	ns
t_r	Turn-On Rise Time	$V_{GEN} = 4.5V,$	–	55	80	
$t_{d(off)}$	Turn-Off Delay Time	$R_G = 6\Omega,$	–	16	60	
t_f	Turn-Off Fall Time	$R_L = 5.5\Omega$	–	10	25	
DRAIN-SOURCE DIODE CHARACTERISTICS						
V_{SD}	Diode Forward Voltage	$I_S = 0.94A, V_{GS} = 0V$	–	0.76	1.2	V

Notes:(1)Pulse test pulse width $\leq 300\mu s$,duty cycle $\leq 2\%$.

(2)These parameters have no way to verify.



Outline Drawing - SOT-323



SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	0.90	1.00	1.10
A1	0.00	0.05	0.10
A2	0.90	0.95	1.00
b	0.20	0.30	0.40
c	0.08	0.12	0.15
D	2.00	2.10	2.20
E	2.15	2.30	2.45
E1	1.15	1.25	1.35
e	0.650Typ.		
e1	1.20	1.30	1.40
L1	0.26	0.36	0.46
L	0.525REF		
θ	0°	4°	8°

