BORN SEMICONDUCTOR

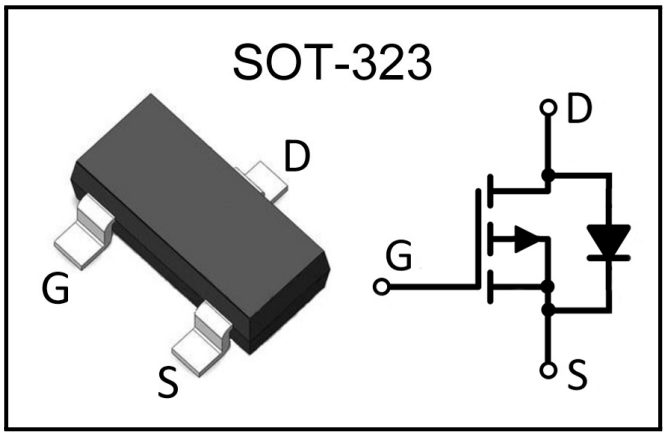
BMS2301

P-Channel MOSFET

Features

- V_{DS}=-20V
- I_D=-1.7A
- $R_{DS(ON)}$ @V_{GS}=-4.5V, TYP=95mΩ
- $R_{DS(ON)}$ @V_{GS}=-2.5V, TYP=130mΩ
- $R_{DS(ON)}$ @V_{GS}=-1.8V, TYP=180mΩ

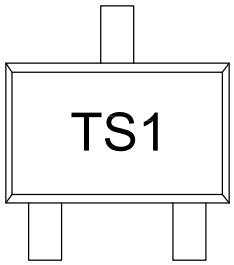
Package



Description

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

Marking



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
BMS2301	SOT-323	TS1	3K	Tape and reel

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

Symbol	Parameter	Value	Unit
BV_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	±10	V
I_D	Continuous Drain Current	-1.7	A
I_{DM}	Pulsed Drain Current(tp=10μs)	-3.0	A
P_D	Maximum Power Dissipation	0.29	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	431	°C/W
T_J	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55 to + 150	°C

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BMS2301

P-Channel MOSFET

Electrical Characteristics @T_A=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	–	–	V
I_{GSS}	Gate Body Leakage	V_{GS} = ±10V,V_{DS} =0V	–	–	±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -20V, V_{GS} = 0V	–	–	-1.0	uA
OFF CHARACTERISSTICS(1)						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = -250uA	-0.45	-0.7	-0.1	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS} = -4.5V, I_D = -1.7A	–	95	120	mΩ
		V_{GS} = -2.5V, I_D = -1.2A	–	130	170	
		V_{GS} = -1.8V, I_D = -0.3A	–	180	250	
CHARGES AND CAPACITANCES(3)						
C_{iss}	Input Capacitance	V_{DS} = -8V,	–	640	–	pF
C_{oss}	Output Capacitance	V_{GS} = 0V,	–	120	–	
C_{rss}	Reverse Transfer Capacitance	f = 1.0MHZ	–	82	–	
SWITCHING CHARACTERISSTICS(2,3)						
$t_{d(on)}$	Turn-On Delay Time	V_{GS} = -4.5V,	–	6.2	–	ns
t_r	Rise Time	V_{DD} = -4.0V,	–	15	–	
$t_{d(off)}$	Turn-Off Delay Time	I_D =-1.0A	–	26	–	
t_f	Turn-Off Fall Time	R_G =6.2Ω	–	18	–	
Q_g	Total Gate Charge	V_{DS} =-10V, V_{GS} = -4.5V,I_D =-3.0A	–	5.5	10	nC
		V_{DS} =-10V	–	3.3	6	
Q_{gs}	Gate-Source Charge	I_D =-3.0A,	–	0.7	–	
Q_{gd}	Gate-Drain Charge	V_{GS} = -2.5V	–	1.3	–	
Drain-source Body diode characteristics						
V_{SD}	Diode Forward Voltage	I_S = -1A,V_{GS} = 0V,	–	–	-1.2	V

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

(2):Switching characteristics are independent of operating junction temperatures.

(3):These parameters have no way to verify.

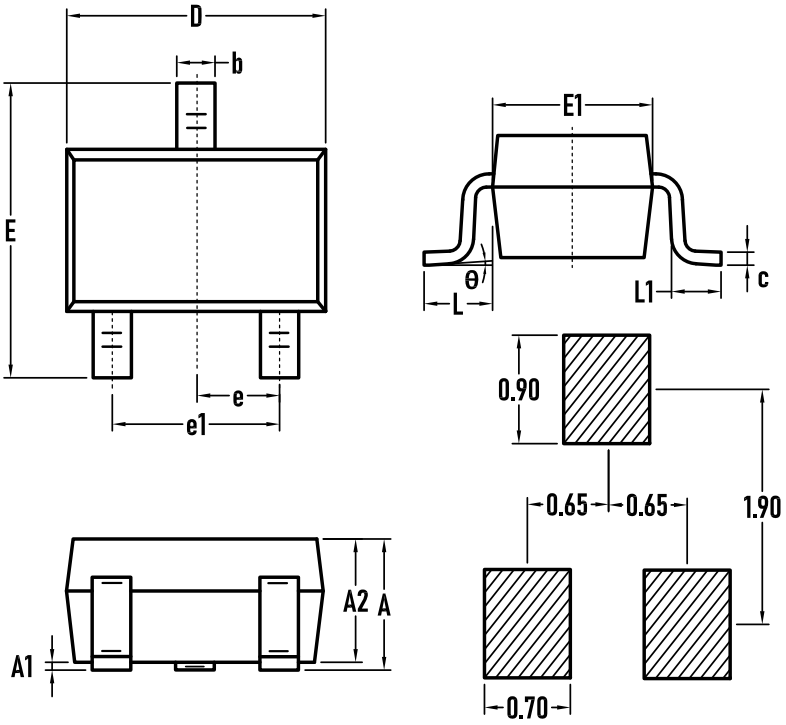
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BMS2301

P-Channel MOSFET

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°

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