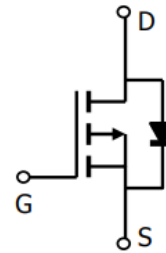


»Features

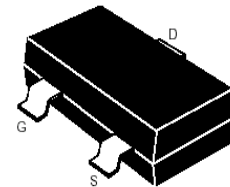
$V_{DS} = -20V$   
 $I_D = -1.4A$   
 $R_{DS(ON)} @V_{GS} = -4.5V, \text{ Max} = 100m\Omega$   
 $R_{DS(ON)} @V_{GS} = -2.5V, \text{ Max} = 140m\Omega$   
 $R_{DS(ON)} @V_{GS} = -1.8V, \text{ Max} = 210m\Omega$

»Pin Configurations



»General Description

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



»Absolute Maximum Ratings @ $T_A=25^\circ C$  unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	- 20	V
Gate-Source Voltage	VGS	±8.0	
Continuous Drain Current	$I_D$	-1.4	A
Pulsed Drain Current ( $t_p=10\mu s$ )	IDM	-3.0	
Power Dissipation	$P_D$	0.29	W
Thermal Resistance from Junction to Ambient	$R\theta_{JA}$	431	$^\circ C/W$
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature	Tstg	-50 ~ +150	

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

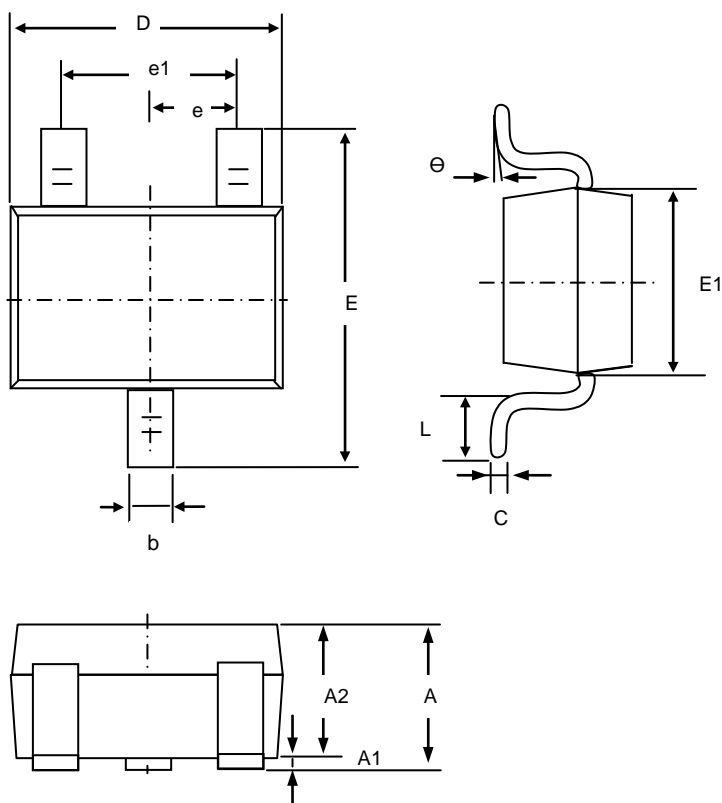
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>OFF CHARACTERISSTICS</b>						
Drain-Source Breakdown Voltage	$V_{DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate-Source Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 8V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V$			-1.0	$\mu A$
<b>OFF CHARACTERISSTICS (note 1)</b>						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.45	-0.7	-1	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -1.0A$		82	100	m $\Omega$
		$V_{GS} = -2.5V, I_D = -0.5A$		102	140	
		$V_{GS} = -1.8V, I_D = -0.3A$		143	210	
<b>CHARGES AND CAPACITANCES (note 3)</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -8.0V, V_{GS} = 0V,$ $f = 1MHz$		640		pF
Output Capacitance	$C_{oss}$			120		
Reverse Transfer Capacitance	$C_{rss}$			82		
<b>SWITCHING CHARACTERISSTICS (note 2,3)</b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = -4.5V, V_{DD} = -4.0V,$ $I_D = -1.0A, R_G = 6.2\Omega$		6.2		ns
Rise Time	$t_r$			15		
Turn-Off Delay Time	$t_{d(off)}$			26		
Fall Time	$t_f$			18		
Total Gate Charge	$Q_g$	$V_{DS} = -10V, V_{GS} = -4.5V,$ $I_D = -3.0A$		5.5	10	nC
		$V_{DS} = -10V, V_{GS} = -2.5V,$ $I_D = -3.0A$		3.3	6	
Gate-Source Charge	$Q_{gs}$			0.7		
Gate-Drain Charge	$Q_{gd}$			1.3		
<b>Drain-source Body diode characteristics</b>						
Forward Diode Voltage	$V_{SD}$	$V_{GS} = 0V, I_S = -0.3A$		-0.62	-1.2	V

**Notes :**

- Pulse Test : pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
- Switching characteristics are independent of operating junction temperatures.
- These parameters have no way to verify.

»Package Information

SOT-323



Symbol	Dim in mm		
	Min	Nor	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	0.650TPY.		
e1	1.2	1.3	1.4
L	0.26	0.36	0.46
θ	0°	4°	8°

»Ordering information

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

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