

»Features

$V_{DS} = -20V$

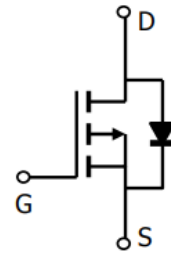
$I_D = -1.4A$

$R_{DS(ON)} @V_{GS} = -4.5V, \text{ Max } = 100m\Omega$

$R_{DS(ON)} @V_{GS} = -2.5V, \text{ Max } = 140m\Omega$

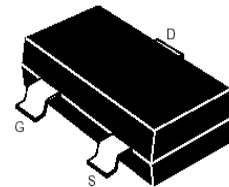
$R_{DS(ON)} @V_{GS} = -1.8V, \text{ Max } = 210m\Omega$

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	- 20	V
Gate-Source Voltage	V_{GS}	± 8.0	
Continuous Drain Current	I_D	-1.4	A
Pulsed Drain Current ($t_p=10\mu s$)	I_{DM}	-3.0	
Power Dissipation	P_D	0.29	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	431	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-50 ~ +150	

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

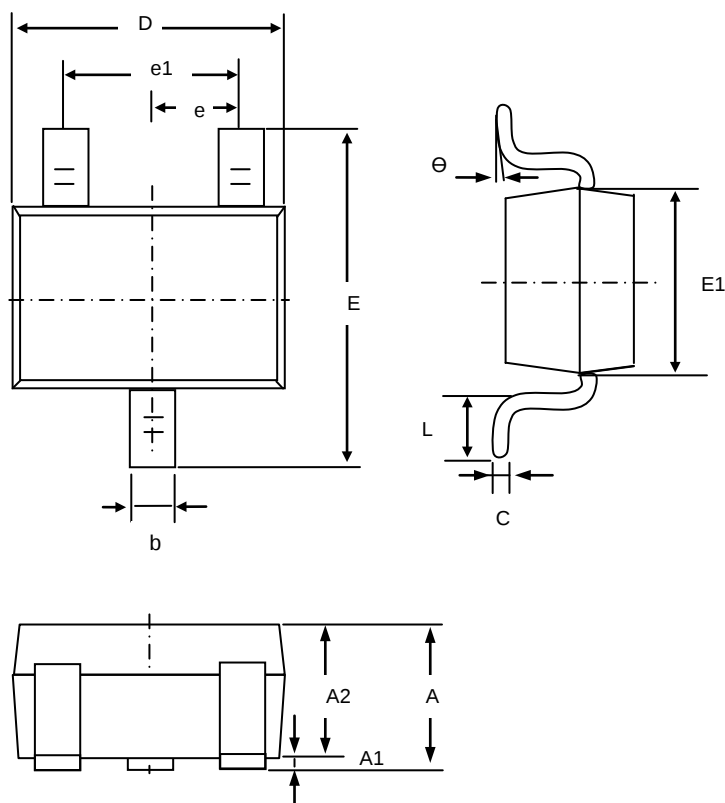
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
OFF CHARACTERISSTICS						
Drain-Source Breakdown Voltage	V _{DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Gate-Source Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1.0	μA
OFF CHARACTERISSTICS (note 1)						
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.45	-0.7	-1	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -1.0A		82	100	mΩ
		V _{GS} = -2.5V, I _D = -0.5A		102	140	
		V _{GS} = -1.8V, I _D = -0.3A		143	210	
CHARGES AND CAPACITANCES (note 3)						
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		
SWITCHING CHARACTERISSTICS (note 2,3)						
Turn-On Delay Time	t _{d(on)}	V _{GS} = -4.5V, V _{DD} = -4.0V, I _D = -1.0A, R _G = 6.2Ω		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		
Drain-source Body diode characteristics						
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