

»Features

$V_{DS} = -20V$
 $I_D = -2A$
 $R_{DS(ON)} @V_{GS} = -4.5V, Max = 135m\Omega$
 $R_{DS(ON)} @V_{GS} = -2.5V, Max = 190m\Omega$

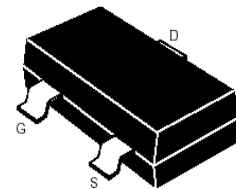
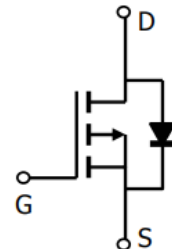
»General Description

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

»Applicatin

- PWM applications
- Load Switch
- Power Management

»Pin Configurations



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	-2.0	A
Pulsed Drain Current (note1)	I_{DM}	-10	A
Power Dissipation	$P_D (T_A=25^\circ C)$	0.3	W
Thermal Resistance Junction to Ambient(note2)	$R_{\theta JA}$	417	$^\circ C/mW$
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ C$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{BR(DSS)}$	$V_{GS}=0V, I_D=-250\mu A$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$I_D=-250\mu A, V_{GS}=V_{DS}$	-0.4		-1.1	V
Gate-body leakage current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$			-1	μA
Drain-source on-resistance(note1)	$R_{DS(ON)}$	$V_{GS}=-4.5V, I_D=-2.0A$			135	m Ω
		$V_{GS}=-2.5V, I_D=-1.5A$			190	
Forward tranconductance(note1)	g_{FS}	$D_{GS}=-5V, I_D=-4A$	5			S
Drain-Source Diode Forward Voltage(note1)	V_{SD}	$V_{GS} = 0V, I_{SD} = -0.7A$			-1.2	V
Dynamic Characteristics(note2)						
Input Capacitance	C_{ISS}	$V_{DS}=-10V, V_{GS}=0V, f=1MHz$		405		pF
Output Capacitance	C_{OSS}			75		
Reverse Transfer Capacitance	C_{RSS}			55		
Switching Characteristics(note2)						
Turn-on delay time	$t_{d(on)}$	$V_{DD}=-10V, I_{DS}=-1A, V_{GEN}=-4.5V, R_L=10\Omega,$			20	ns
Turn-on rise time	t_r				60	ns
Turn-off delay time	$t_{d(off)}$				50	ns
Turn-off fall time	t_f				20	ns

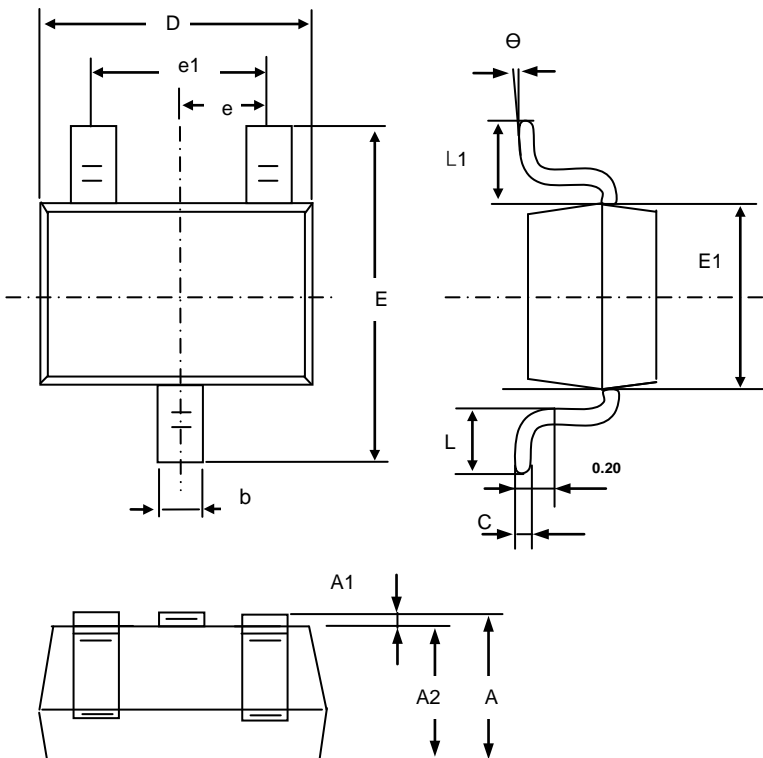
Notes :

 Pulse test : Pulse width $\leq 300 \mu s$, duty cycle $\leq 2\%$.

These parameter 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
L1	0.525REF.		
θ	0°	4°	8°

»Ordering information

Order code	Package	Marking	Base qty	Delivery mode
BMSN3139	SOT-323	39K	3K	Tape and reel