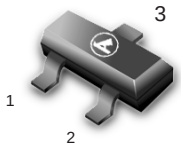
Power MOSFET
200 mAmps, 50 Volts
N–Channel SOT–23

Typical applications are dc–dc converters, power management in portable and battery–powered products such as computers,printers, PCMCIA cards, cellular and cordless telephones.

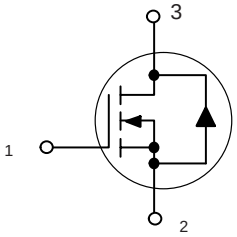
LBSS138LT1G
S-LBSS138LT1G



SOT– 23 (TO–236AB)

200 mAMPS
50 VOLTS
$R_{DS(on)}$ = 3.5 Ω

N - Channel



●FEATURES

1)Low Threshold Voltage (VGS(th): 0.5V...1.5V) makes it ideal for low voltage applications
2)Miniature SOT–23 Surface Mount Package saves board space
3)Pb−Free Package May be Available. The G−Suffix Denotes a Pb−Free Lead Finish
4)We declare that the material of product compliant with RoHS requirements and Halogen Free.
5) S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

●ORDERING INFORMATION

Device	Marking	Shipping
LBSS138LT1G	J1	3000/Tape&Reel
LBSS138LT3G	J1	10000/Tape&Reel

●MAXIMUM RATINGS(Ta = 25℃ unless otherwise noted))

Rating	Symbol	Value	Unit
Drain–to–Source Voltage	V_{DSS}	50	Vdc
Gate–to–Source Voltage – Continuous	V_{GS}	± 20	Vdc
Drain Current – Continuous @ T_A = 25 ℃ – Pulsed Drain Current (tp ≤ 10 μs)	I_D I_{DM}	200 800	mA
Total Power Dissipation @ T_A = 25°C	P_D	225	mW
Operating and Storage Temperature Range	T_J, T_{stg}	– 55 to150	°C
Thermal Resistance – Junction–to–Ambient	$R_{\theta JA}$	556	°C/W
Maximum Lead Temperature for Soldering Purposes, for 10 seconds	T_L	260	°C

LBSS138LT1G,S-LBSS138LT1G

●ELECTRICAL CHARACTERISTICS (Ta= 25℃)

Characteristic		Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS						
Drain–to–Source Breakdown Voltage (V_{GS} = 0 Vdc, I_D = 250 μAdc)		$V_{(BR)DSS}$	50	–	–	Vdc
Zero Gate Voltage Drain Current (V_{DS} = 25 Vdc, V_{GS} = 0 Vdc) (V_{DS} = 50 Vdc, V_{GS} = 0 Vdc)		I_{DSS}	– –	– –	0.1 0.5	μAdc
Gate–Source Leakage Current (V_{GS} = ± 20 Vdc, V_{DS} = 0 Vdc)		I_{GSS}	–	–	±0.1	μAdc
ON CHARACTERISTICS (Note 1.)						
Gate–Source Threshold Voltage (V_{DS} = V_{GS}, I_D = 1.0 mAdc)		$V_{GS(th)}$	0.5	–	1.5	Vdc
Static Drain–to–Source On–Resistance (V_{GS} = 2.75 Vdc, I_D < 200 mAdc, T_A = –40°C to +85°C) (V_{GS} = 5.0 Vdc, I_D = 200 mAdc)		$r_{DS(on)}$	– –	5.6 –	10 3.5	Ohms
Forward Transconductance (V_{DS} = 25 Vdc, I_D = 200 mAdc, f = 1.0 kHz)		g_{fs}	100	–	–	mmhos
DYNAMIC CHARACTERISTICS						
Input Capacitance	(V_{DS} = 25 Vdc, V_{GS} = 0, f = 1 MHz)	C_{iss}	–	40	50	pF
Output Capacitance	(V_{DS} = 25 Vdc, V_{GS} = 0, f = 1 MHz)	C_{oss}	–	12	25	
Transfer Capacitance	(V_{DG} = 25 Vdc, V_{GS} = 0, f = 1 MHz)	C_{rss}	–	3.5	5.0	
SWITCHING CHARACTERISTICS (Note 2.)						
Turn–On Delay Time	(V_{DD} = 30 Vdc , I_D =200 mAdc	$t_{d(on)}$	–	–	20	ns
Turn–Off Delay Time		$t_{d(off)}$	–	–	20	ns

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.
2. Switching characteristics are independent of operating junction temperature.

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ELECTRICAL CHARACTERISTIC CURVES

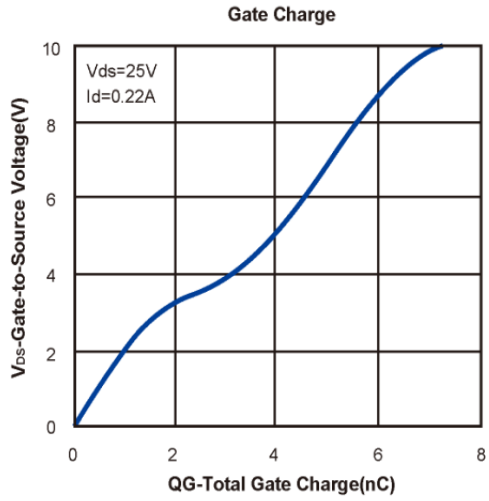


FIG.1

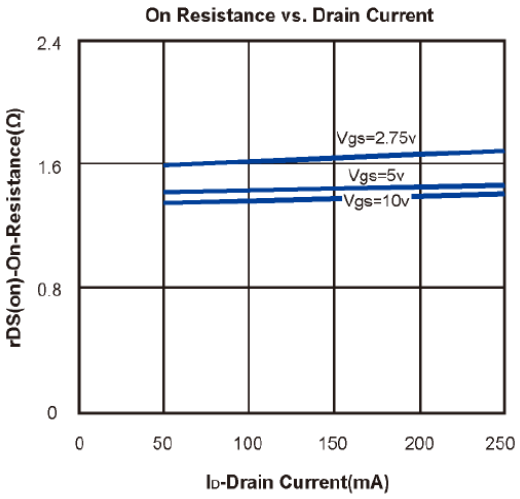


FIG.2

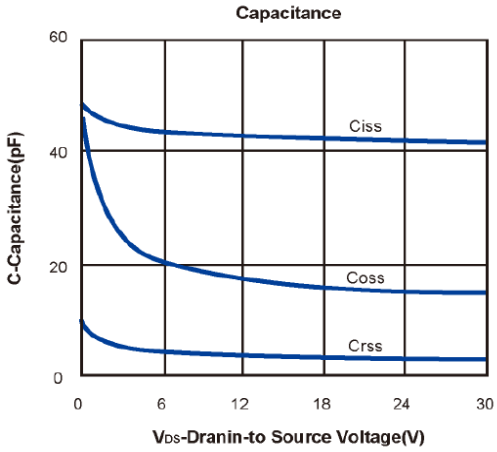


FIG.3

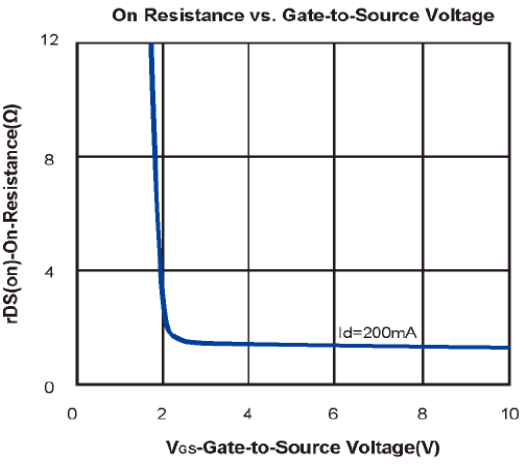


FIG.4

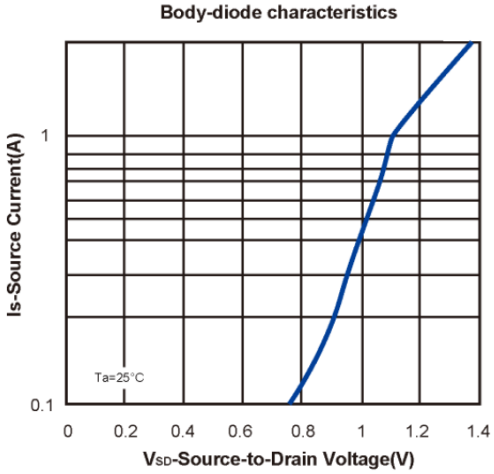


FIG.5

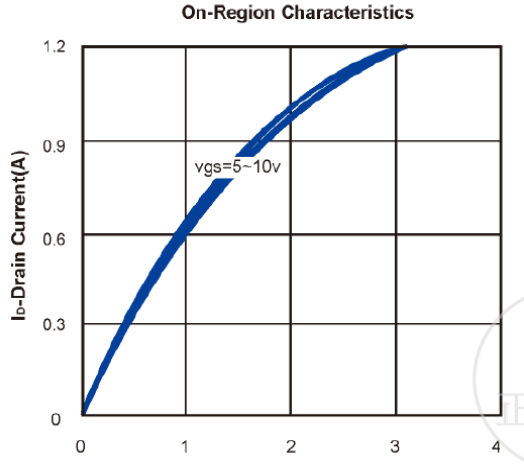
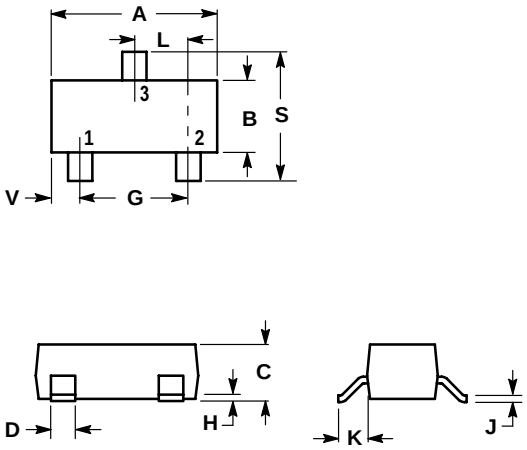


FIG.6

LBSS138LT1G,S-LBSS138LT1G

SOT-23



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60