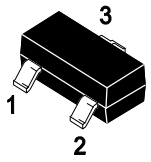
LBSS123LT1G
S-LBSS123LT1G

N-CHANNEL POWER MOSFET

1. FEATURES

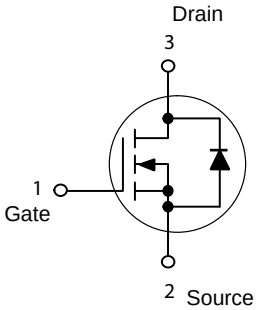
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.



SOT23(TO-236)

2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LBSS123LT1G	SA	3000/Tape&Reel
LBSS123LT3G	SA	10000/Tape&Reel



3. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	100	V
Gate–to–Source Voltage – Continuous – Non–repetitive (tp ≤ 50 μs)	 VGS VGSM	 ±20 ±40	 V
Drain Current – Continuous (Note 1) – Pulsed (Note 2)	 ID IDM	 0.17 0.68	A

4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR−5 Board (Note 3) @ TA = 25ºC Derate above 25ºC	PD	225 1.8	mW mW/ºC
Thermal Resistance, Junction–to–Ambient	RΘJA	556	ºC/W
Junction and Storage temperature	TJ,Tstg	−55~+150	° C

1. The Power Dissipation of the package may result in a lower continuous drain current.
2. Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.
3. FR–5 = 1.0×0.75×0.062 in.

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)	VBRDSS	100	-	-	V
Zero Gate Voltage Drain Current (VGS = 0, VDS = 100 V, Tj=25℃) (VGS = 0, VDS = 100 V, Tj=125℃)	IDSS	- -	- -	1 60	μA
Gate–Body Leakage Current (VGS = 20 V, VDS = 0)	IGSS	-	-	50	nA

ON CHARACTERISTICS (Note 4)

Gate Threshold Voltage (VDS = VGS, ID = 1.0mA)	VGS(th)	0.8	-	2.0	V
Static Drain–Source On–State Resistance (VGS = 10 V, ID = 100 mA)	RDS(on)	-	5	6	Ω
Forward Transconductance (VGS = 0V, ID = 100 mA)	gfs	0.8	-	-	S

DYNAMIC CHARACTERISTICS

Input Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Ciss	15	42.7	88	pF
Output Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Coss	5	14	29.5	pF
Reverse Transfer Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Crss	1	3	6.3	pF
Total Gate Charge (VDS = 10 V, VGS = 10V, ID=0.22A)	Qg	2.3	6.32	13.3	nC
Gate-Source Charge (VDS = 10 V, VGS = 10V, ID=0.22A)	Qgs	0.55	1.55	3.3	nC
Gate-Drain Charge (VDS = 10 V, VGS = 10V, ID=0.22A)	Qgd	0.25	0.68	1.43	nC

SWITCHING CHARACTERISTICS (Note 4)

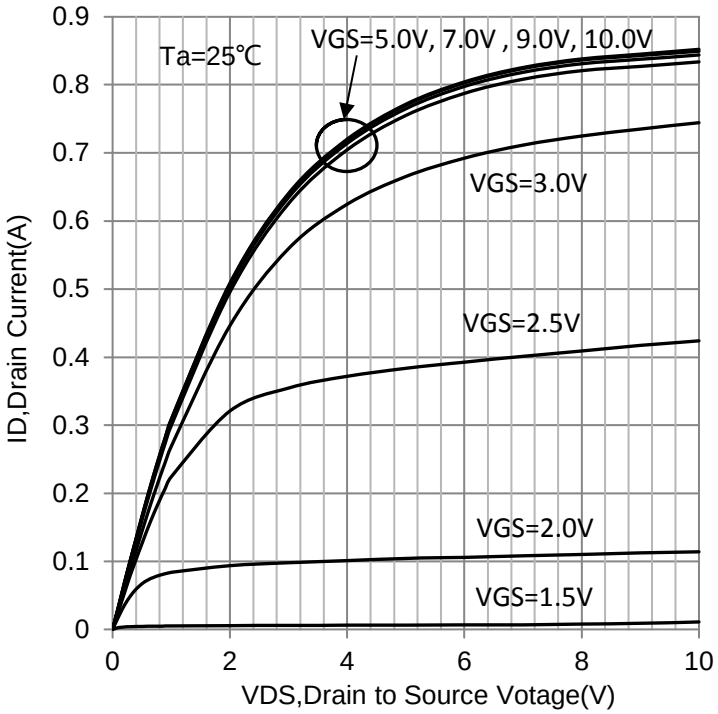
Turn-On Delay Time	(VCC = 30 V, IC = 0.28 A,VGS = 10 V, RGS = 50 Ω)	td(on)	-	20	-	ns
Turn-Off Delay Time		td(off)	-	40	-	

REVERSE DIODE

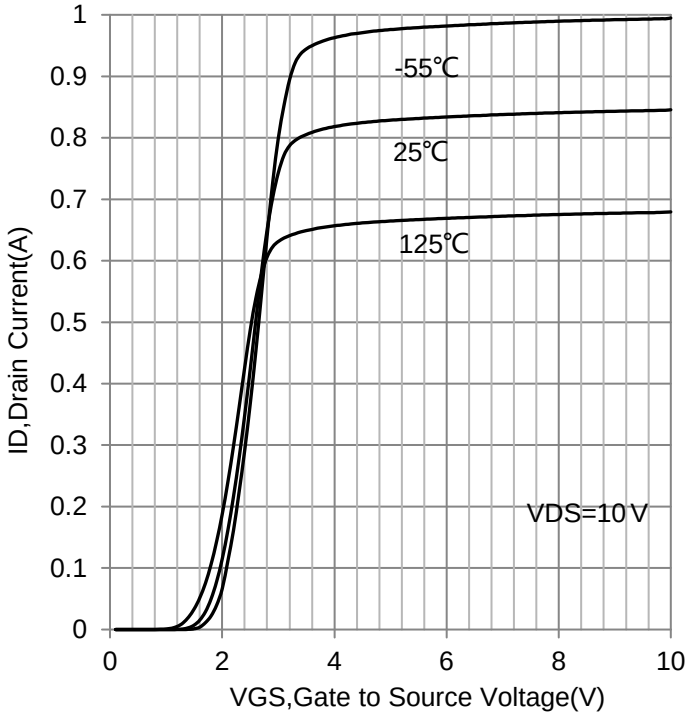
Diode Forward On–Voltage (ID = 0.34 A, VGS = 0 V)	VSD	-	-	1.3	V

4. Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

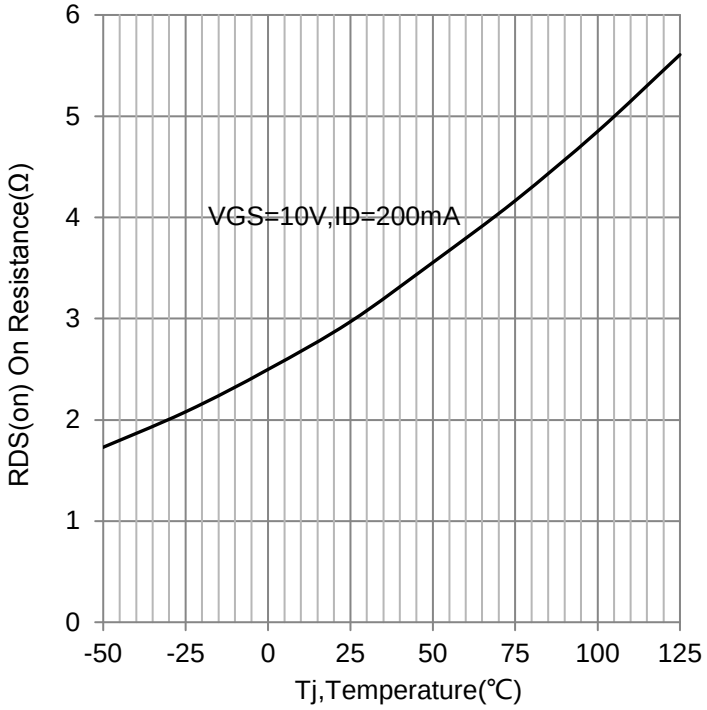
6.ELECTRICAL CHARACTERISTICS CURVES



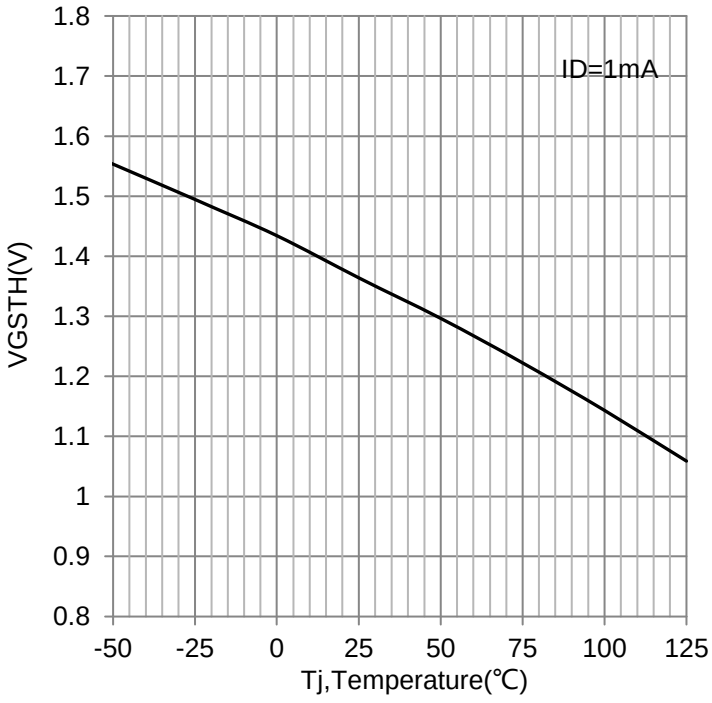
ID vs. VDS



ID vs. VGS

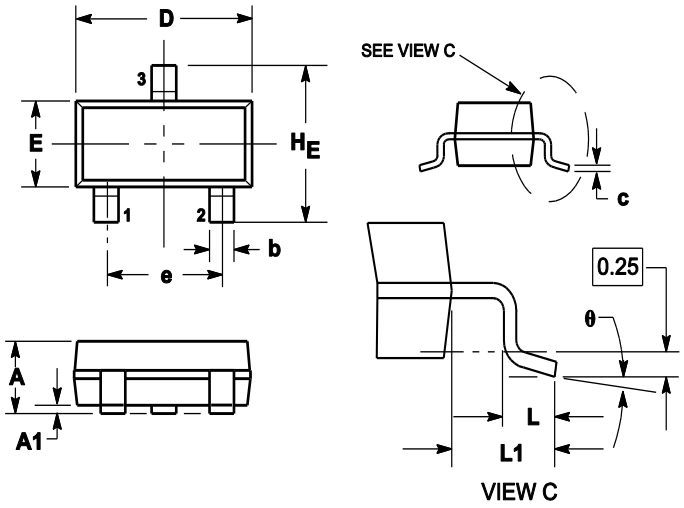


RDS(on) vs. Tj



VGS(th) vs. Tj

7.OUTLINE AND DIMENSIONS

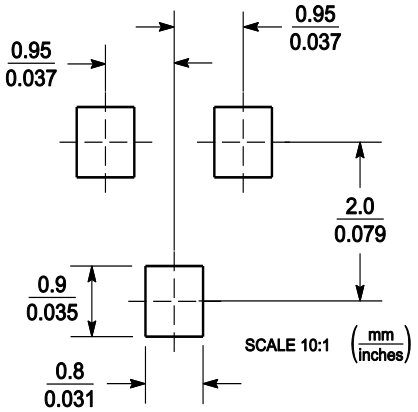


Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

8.SOLDERING FOOTPRINT



DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.

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