![LRC logo]

L2N7002LT1G
S-L2N7002LT1G

Small Signal MOSFET
115 mAmps, 60 Volts N–Channel SOT-23

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.
- ESD Protected:1000V

SOT23(TO-236)

3 Drain
1 Gate
2 Source
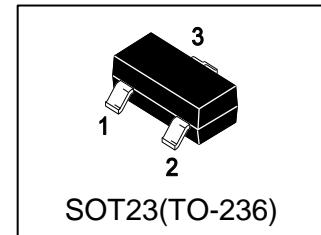
2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
L2N7002LT1G	702	3000/Tape&Reel
L2N7002LT3G	702	10000/Tape&Reel
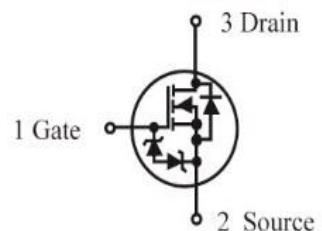
3. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	60	Vdc
Drain–Gate Voltage (RGS = 1.0 MΩ)	VDGR	60	Vdc
Drain Current	ID		mAdc
– Continuous TC = 25°C		±115	
TC = 100°C		±75	
– Pulsed (Note 1)	IDM	±800	
Gate–Source Voltage			
– Continuous	VGS	±20	Vdc
– Non–repetitive (tp≦50µs)	VGSM	±40	Vdc

4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR−5 Board (Note 2) @ TA = 25ºC	PD	225	mW
Derate above 25ºC		1.8	mW/ºC
Thermal Resistance, Junction–to–Ambient(Note 2)	RΘJA	556	ºC/W
Junction and Storage temperature	TJ,Tstg	−55~+150	ºC

1. Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2.0%.

2. FR–5 = 1.0×0.75×0.062 in.

5. ELECTRICAL CHARACTERISTICS (Ta= 25ºC)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = 10μAdc)	VBRDSS	60	-	-	Vdc
Zero Gate Voltage Drain Current TJ = 25°C (VGS = 0, VDS = 60 Vdc) TJ = 125°C	IDSS	- -	- -	1.0 500	μAdc
Gate–Body Leakage Current, Forward (VGS = 20 Vdc)	IGSSF	-	-	1.0	μAdc
Gate–Body Leakage Current, Reverse (VGS = - 20 Vdc)	IGSSR	-	-	-1.0	μAdc

ON CHARACTERISTICS (Note 3)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Gate Threshold Voltage (VDS = VGS, ID = 250μAdc)	VGS(th)	1.0	1.6	2.0	Vdc
On–State Drain Current (VDS ⩾ 2.0 VDS(on), VGS = 10 Vdc)	ID(on)	500	-	-	mA
Static Drain–Source On–State Voltage (VGS = 10 Vdc, ID = 500 mAdc) (VGS = 5.0 Vdc, ID = 50 mAdc)	VDS(on)	- -	- -	3.75 0.375	Vdc
Static Drain–Source On–State Resistance (VGS = 10 Vdc, ID = 500 mAdc) TC = 25°C TC = 125°C (VGS = 5.0 Vdc, ID = 50 mAdc) TC = 25°C TC = 125°C	RDS(on)	- - - -	1.4 - 1.8 -	7.5 13.5 7.5 13.5	Ohms
Forward Transconductance (VDS ⩾ 2.0 VDS(on), ID = 200 mAdc)	gfs	80	-	-	mmhos

DYNAMIC CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Input Capacitance (VDS = 25 Vdc, VGS = 0, f = 1.0 MHz)	Cibo	-	17	50	pF
Output Capacitance (VDS = 25 Vdc, VGS = 0, f = 1.0 MHz)	Cobo	-	10	25	pF
Reverse Transfer Capacitance (VDS = 25 Vdc, VGS = 0, f = 1.0 MHz)	Cibo	-	2.5	5.0	pF

SWITCHING CHARACTERISTICS

| Characteristic		Symbol	Min.	Typ.	Max.	Unit
Turn-On Delay Time	(VDD = 25 Vdc , ID =500 mAdc, RG = 25Ω,RL = 50 Ω,Vgen = 10 V)	td(on)	-	7	20	ns
Turn-Off Delay Time		td(off)	-	11	40	

BODY–DRAIN DIODE RATINGS

| Characteristic	Symbol	Min.	Typ.	Max.	Unit
Diode Forward On–Voltage (IS = 115 mAdc, VGS = 0 V)	VSD	-	-	-1.5	Vdc
Source Current Continuous (Body Diode)	IS	-	-	-115	mAdc
Source Current Pulsed	ISM	-	-	-800	mAdc

3.Pulse Test: Pulse Width ⩽300 μs, Duty Cycle ⩽2.0%.

6. ELECTRICAL CHARACTERISTICS CURVES
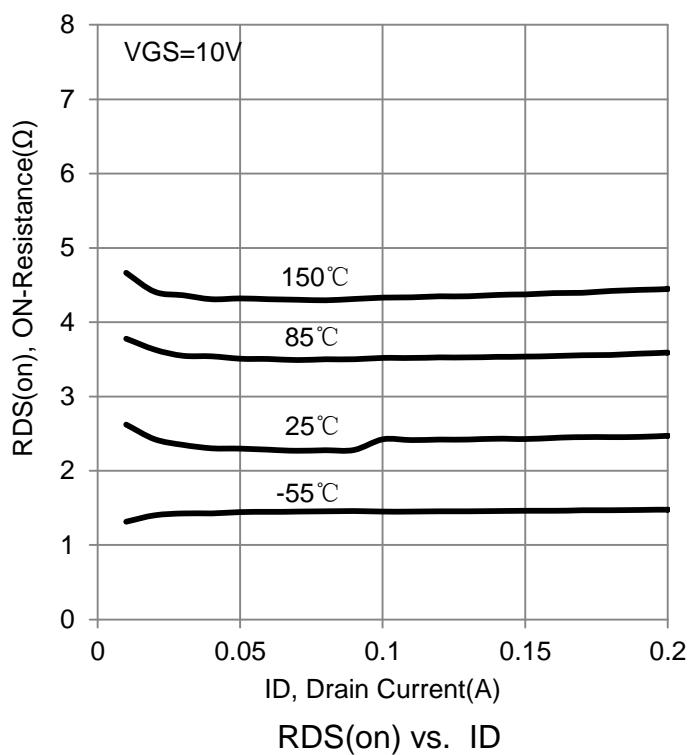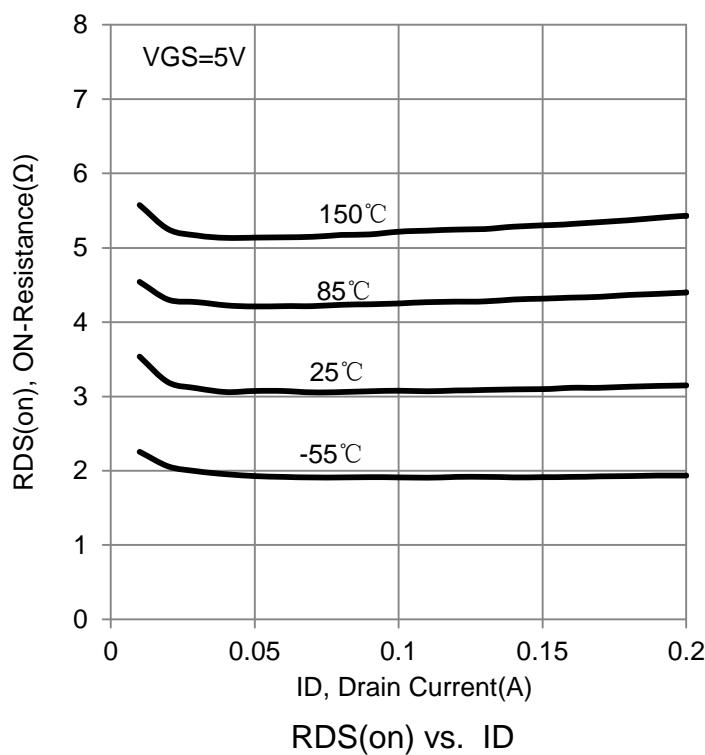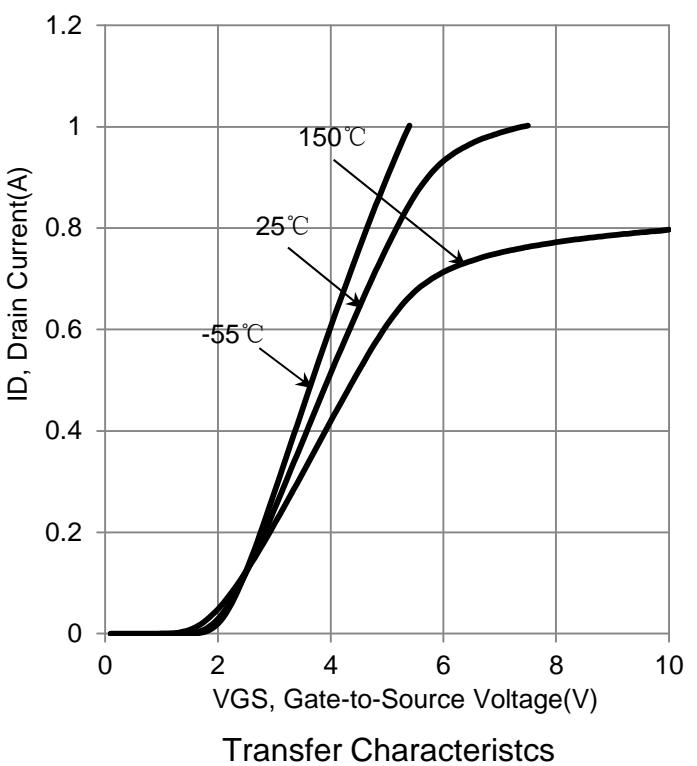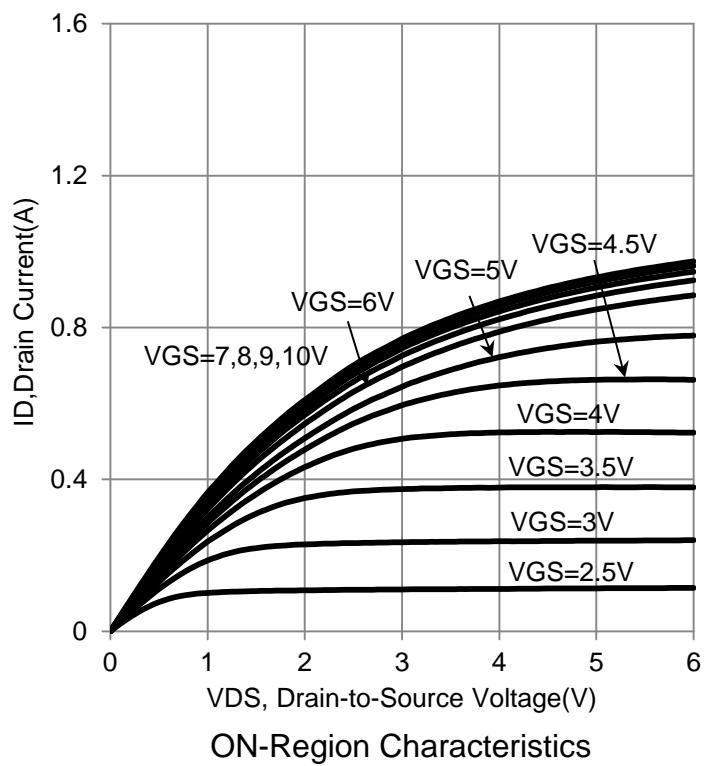
ON-Region Characteristics

Transfer Characteristcs

RDS(on) vs. ID

RDS(on) vs. ID

6. ELECTRICAL CHARACTERISTICS CURVES（Con.)

RDS(on) vs. VGS

RDS(on) vs. Temperature

Capacitor vs.VDS

IS vs.VSD

6. ELECTRICAL CHARACTERISTICS CURVES（Con.)

VGS(th) vs. Temperature

IDS vs. VDS
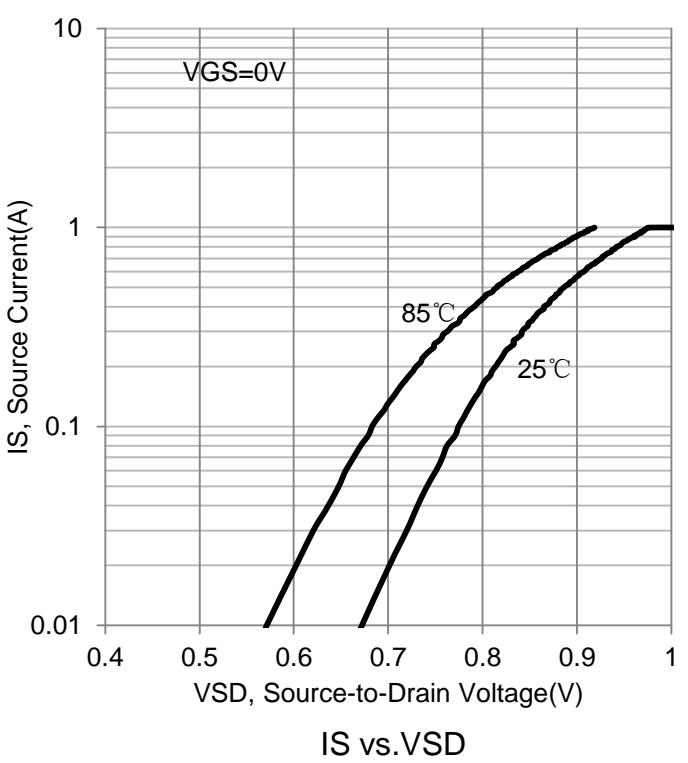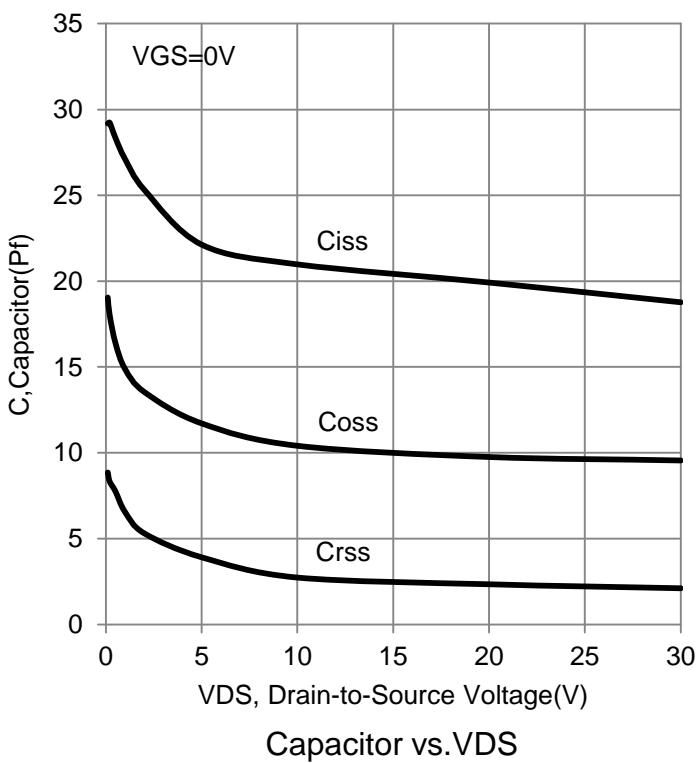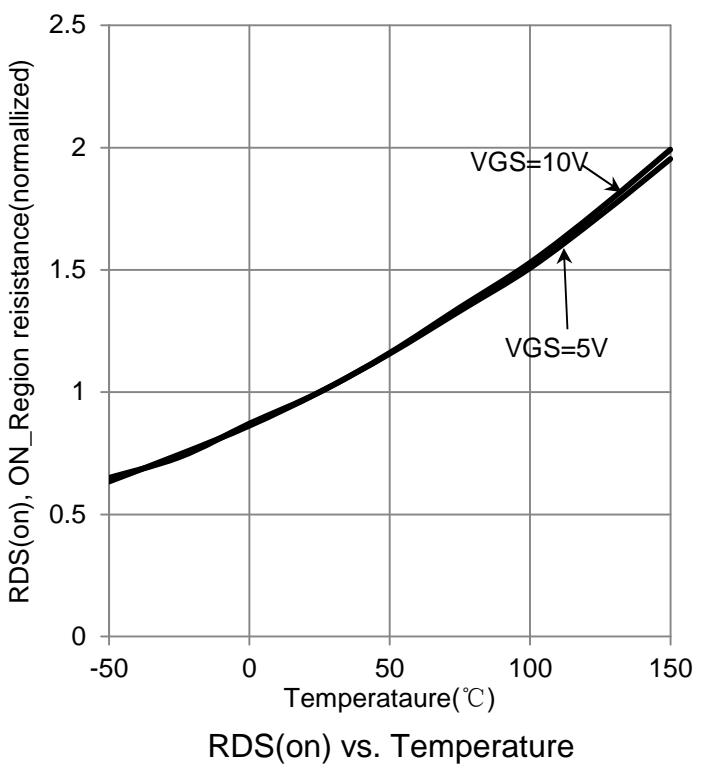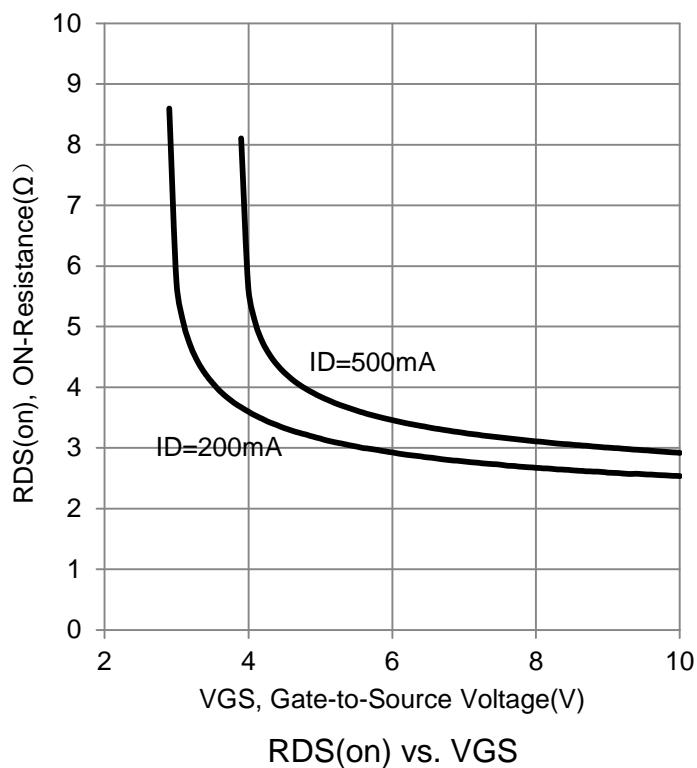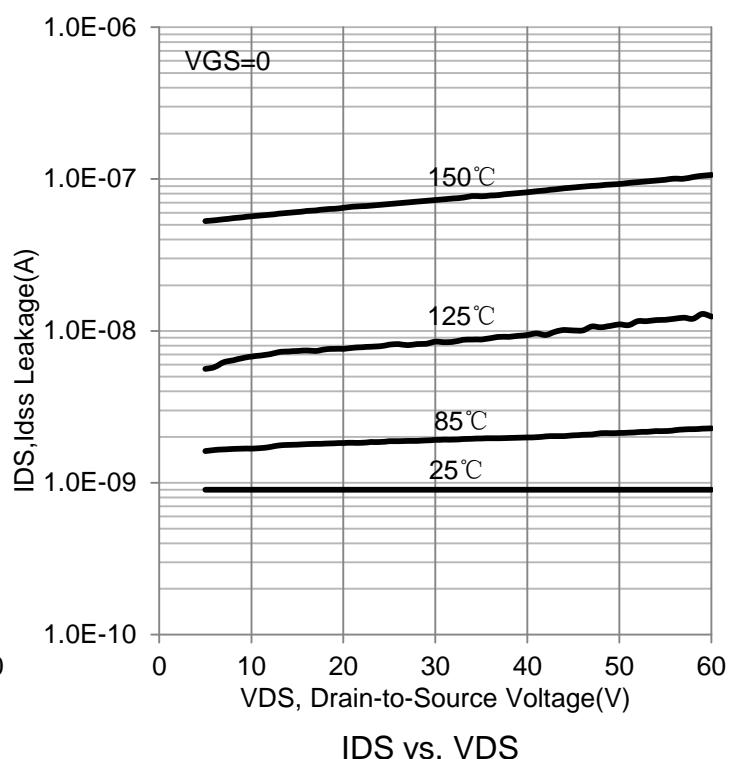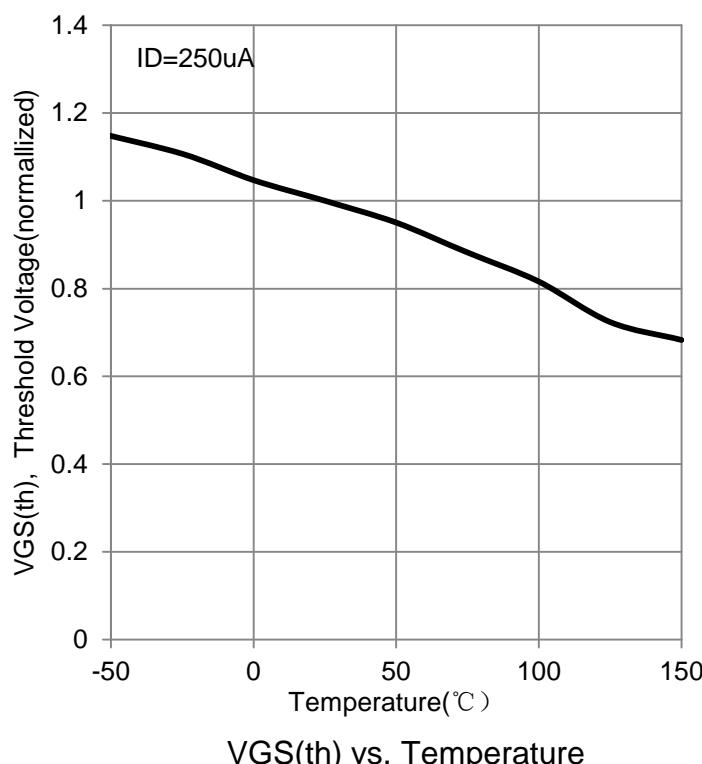
7.OUTLINE AND DIMENSIONS
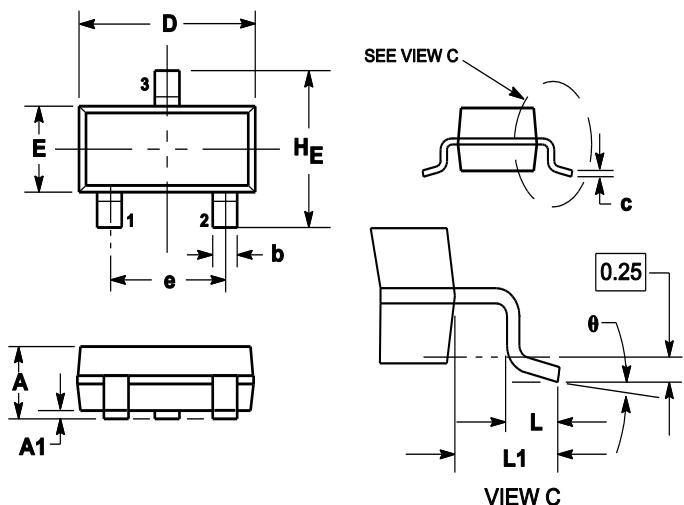
Notes:

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.

DIM	MILLIMETERS			INCHES		
	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

$\frac{0.95}{0.037}$

$\frac{0.95}{0.037}$

$\frac{2.0}{0.079}$

$\frac{0.9}{0.035}$

SCALE 10:1 $\left(\frac{mm}{inches}\right)$

$\frac{0.8}{0.031}$