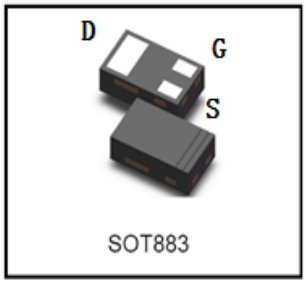
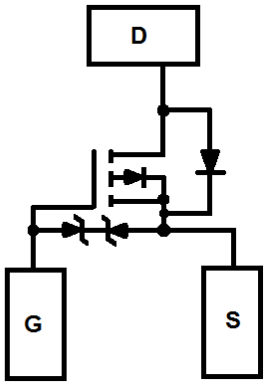
LP0404N3T5G

20V, P-Channel (D-S) MOSFET



1. FEATURES

- VDS = -20V
  RDS(ON)≤0.48Ω,VGS@-4.5V,IDS@-780mA
  RDS(ON)≤0.67Ω,VGS@-2.5V,IDS@-660mA
  RDS(ON)≤0.95Ω,VGS@-1.8V,IDS@-100mA
  RDS(ON)≤2.2Ω,VGS@-1.5V,IDS@-100mA
- Super high density cell design for extremely low RDS(ON).
- Exceptional on-resistance and maximum DC current capability.
- Gate to Source ESD protection
- MSL:1
- Total shelf life：>10 years
- We declare that the material of product compliance with RoHS requirements and Halogen Free.



2. APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LP0404N3T5G	T5	10000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain−to−Source Voltage	VDSS	-20	V
Gate−to−Source Voltage	VGS	±6	V
Drain Current (Note 1) Steady State	ID	-1.4	A
Pulsed Drain Current	IDM	-5	A
Power Dissipation	PD	950	mW
Operating and Storage temperature	Top,Tstg	−55~+150	C

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Thermal Resistance,Junction-to-Ambient(Note 1)	RθJA	131	℃/W

Note 1.Surface mounted on 1.5 x 1.5 FR4 board using 1 sq in pad, 2 oz Cu.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage (VGS = 0V, ID =-250uA)		V(BR)DSS	-20	-	-	V
Gate Threshold Voltage (VDS =VGS , ID =-250μA)		VGS(th)	-0.4	-0.92	-1.2	V
Gate Leakage Current (VDS =0V, VGS =±4.5V)		IGSS	-	-	±10	μA
Zero Gate Voltage Drain Current (VDS =-16V, VGS =0V)		IDSS	-	-	-1	μA
Drain-Source On-Resistance(Note 2) (VGS=-4.5V,ID=-780mA)		RDS(ON)	-	0.34	0.48	Ω
Drain-Source On-Resistance(Note 2) (VGS=-2.5V,ID=-660mA)			-	0.45	0.67	
Drain-Source On-Resistance(Note 2) (VGS=-1.8V,ID=-100mA)			-	0.72	0.95	
Drain-Source On-Resistance(Note 2) (VGS=-1.5V,ID=-100mA)			-	1.3	2.2	
Diode Forward Voltage (IS =-350mA, VGS =0V)		VSD	-	-0.83	-1.2	V
Dynamic						
Total Gate Charge	(VDS =-16V, VGS =-4.5V, ID =-200mA)	Qg	-	1.14	-	nC
Gate-Source Charge		Qgs	-	0.3	-	
Gate-Drain Charge		Qgd	-	0.3	-	
Turn-On Delay Time	(VDD =-10V, RL =50Ω,VGEN =-5V,RG =10Ω,ID =-200mA)	td(on)	-	51.3	-	ns
Rise Time		tr	-	24.2	-	
Turn-Off Delay Time		td(off)	-	246	-	
Fall Time		tf	-	81.2	-	
Input Capacitance	(VDS = -16 V, VGS = 0 V, f = 1 MHz)	Ciss	-	78.2	-	pF
Output Capacitance		Coss	-	9.68	-	
Reverse Transfer Capacitance		Crss	-	5.18	-	

Note 2: Pulse test; pulse width ≤ 300μs, duty cycle≤ 2%.

7. ELECTRICAL CHARACTERISTICS CURVES

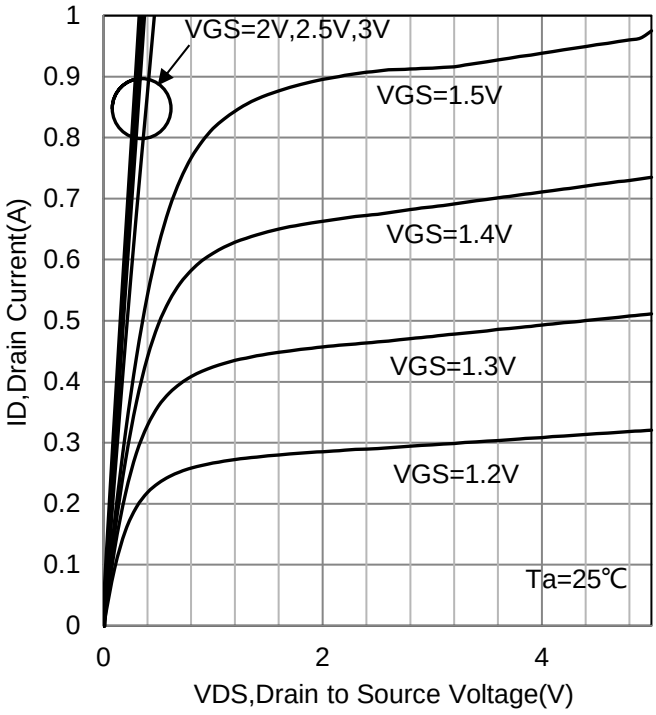


Figure 1.ID vs. VDS

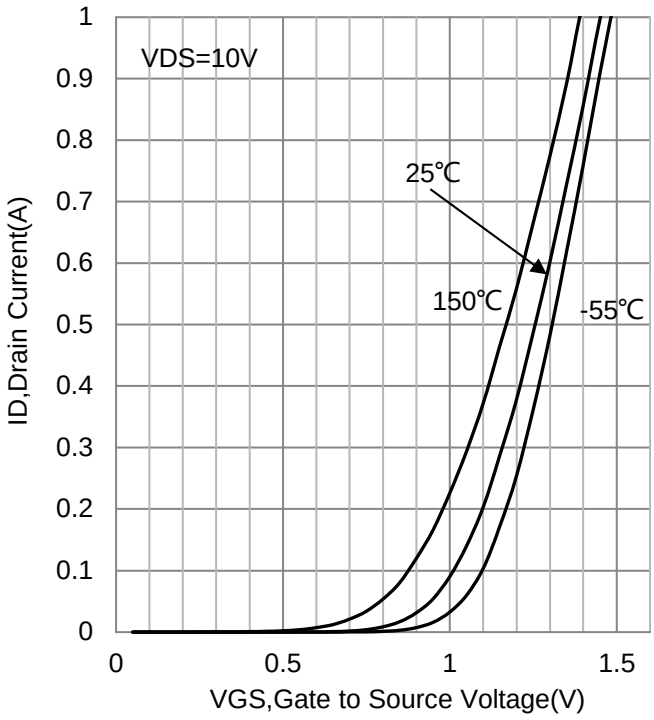


Figure 2.ID vs. VGS

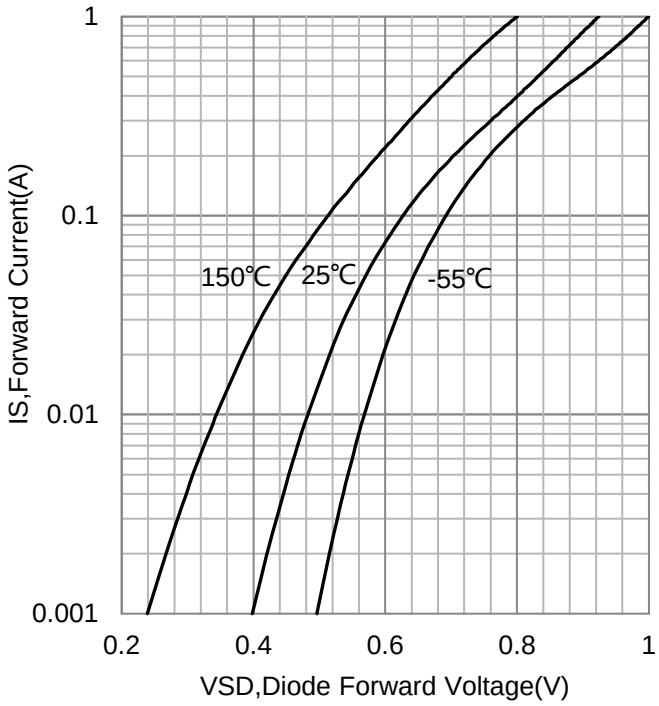


Figure 3.IS vs. VSD

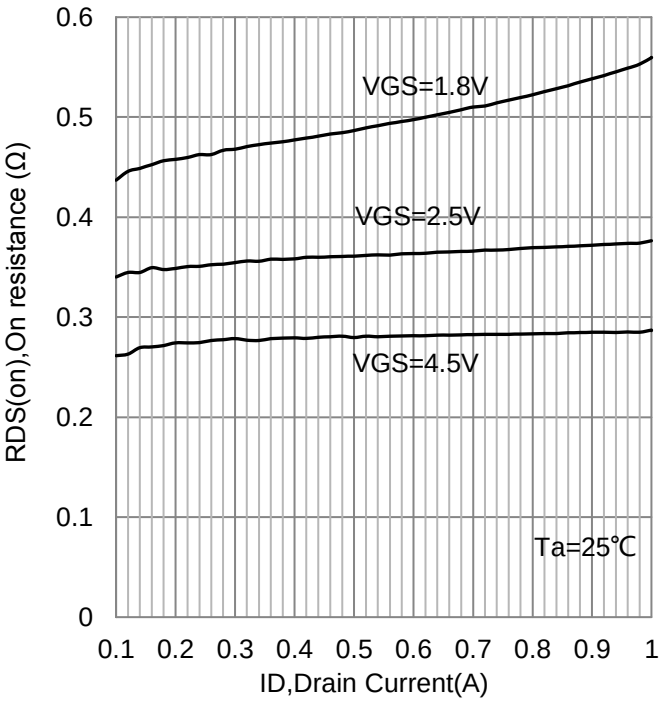


Figure 4.RDS(on) vs. ID

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

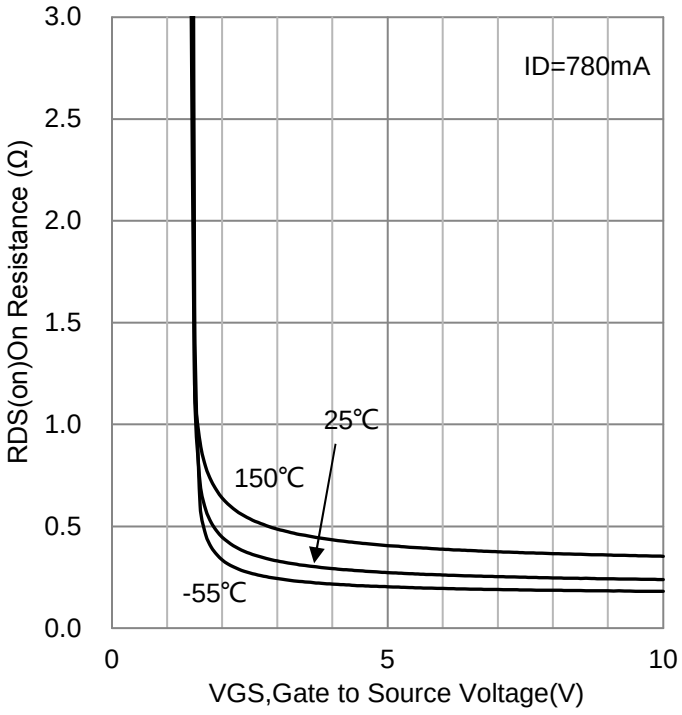


Figure 5.RDS(on) vs. VGS

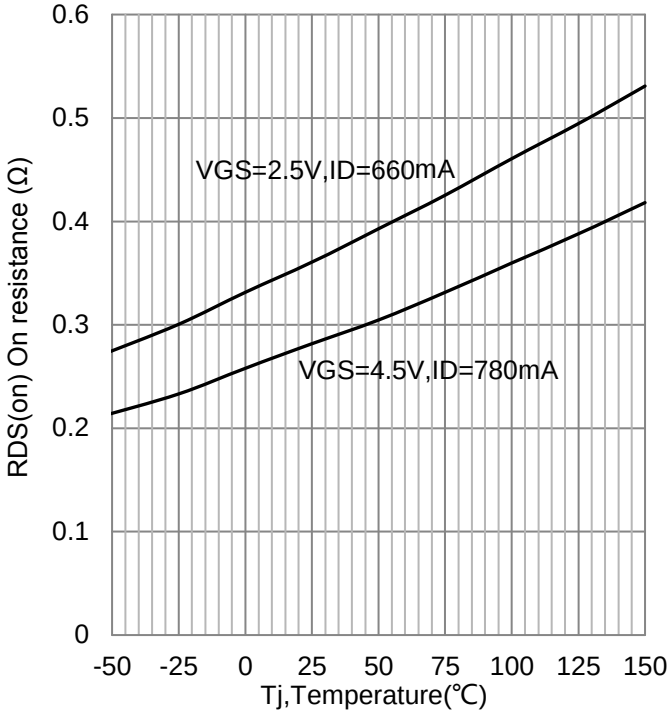


Figure 6.RDS(on) vs Tj

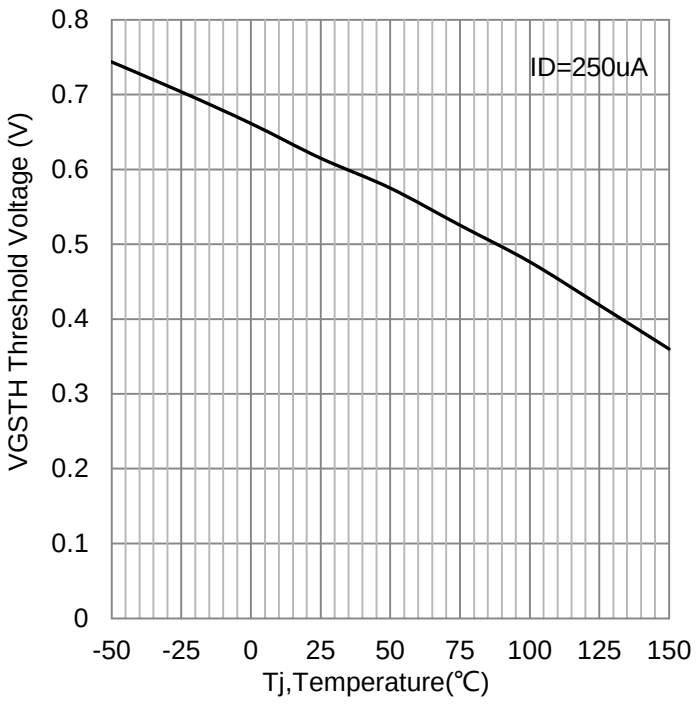


Figure 7.VGSTH vs. Tj

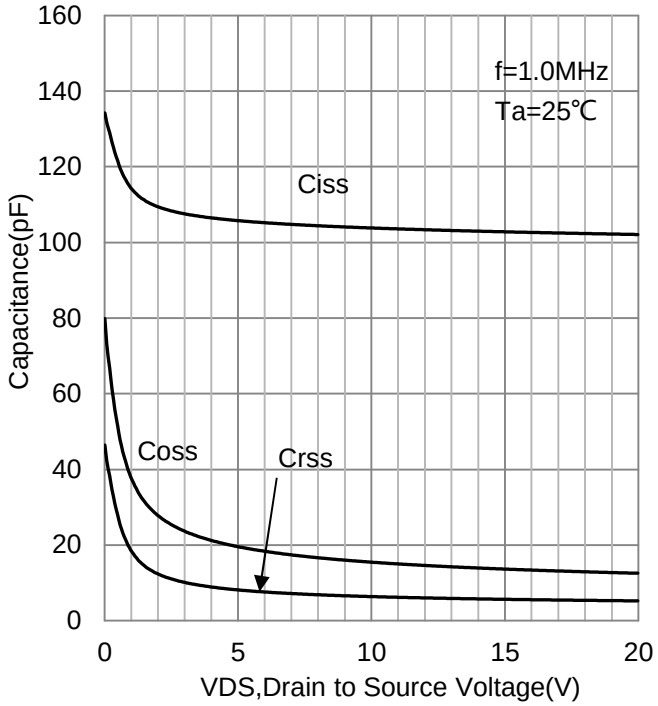


Figure 8.Capacitance

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

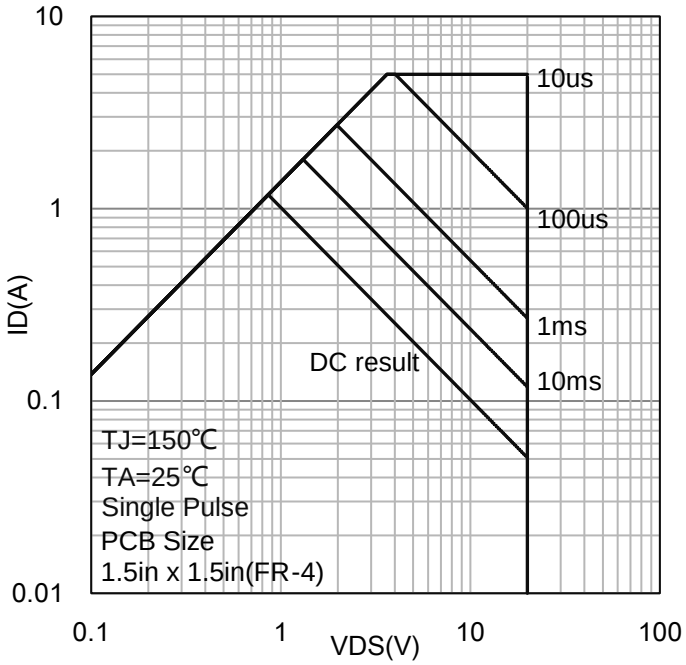


Figure 9.Safe Operating Area

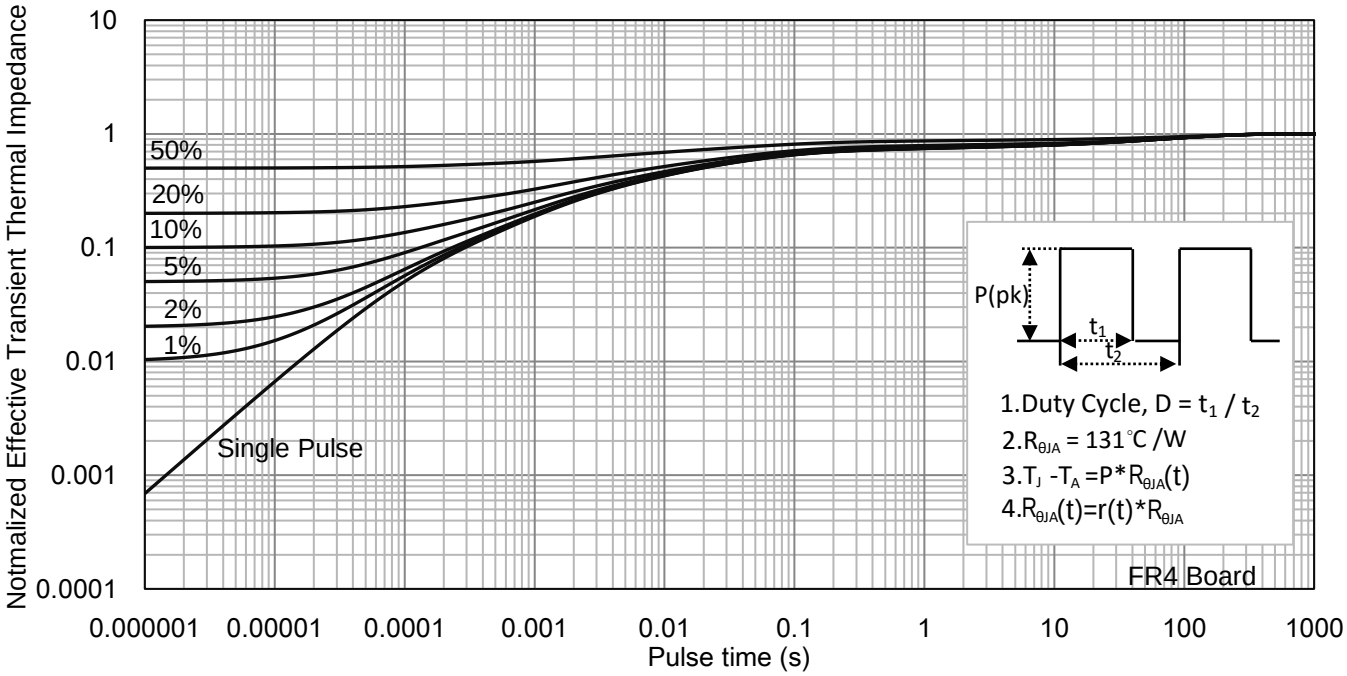
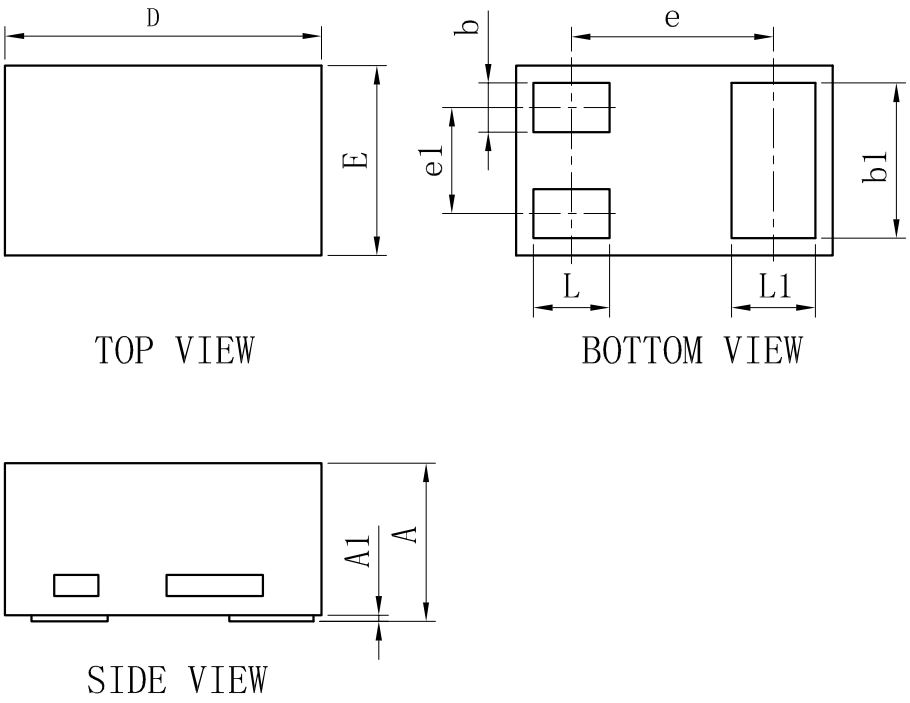


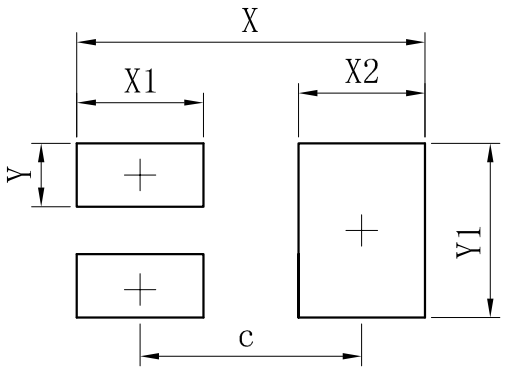
Figure 10.Thermal Response

8.OUTLINE AND DIMENSIONS



SOT883			
Dim	Min	Typ	Max
D	0.95	1.00	1.05
E	0.55	0.60	0.65
e	–	0.64	–
e1	–	0.34	–
L	0.19	0.24	0.29
L1	0.22	0.27	0.32
b	0.10	0.15	0.20
b1	0.44	0.49	0.54
A	0.43	0.48	0.53
A1	0	–	0.05
All Dimensions in mm			

8.SOLDERING FOOTPRINT



Dimensions	(mm)
c	0.70
X	1.10
X1	0.40
X2	0.40
Y	0.20
Y1	0.55

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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