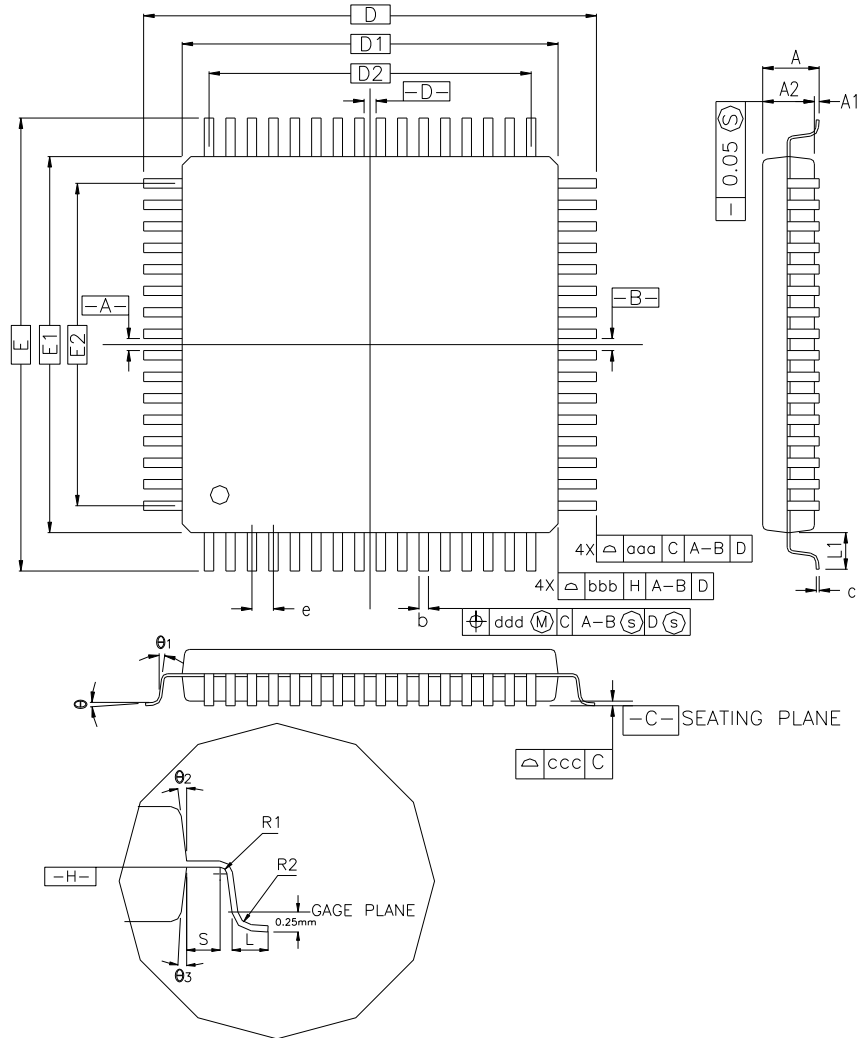


## 39. AT91SAM7X512/256/128 Mechanical Characteristics

### 39.1 Package Drawings

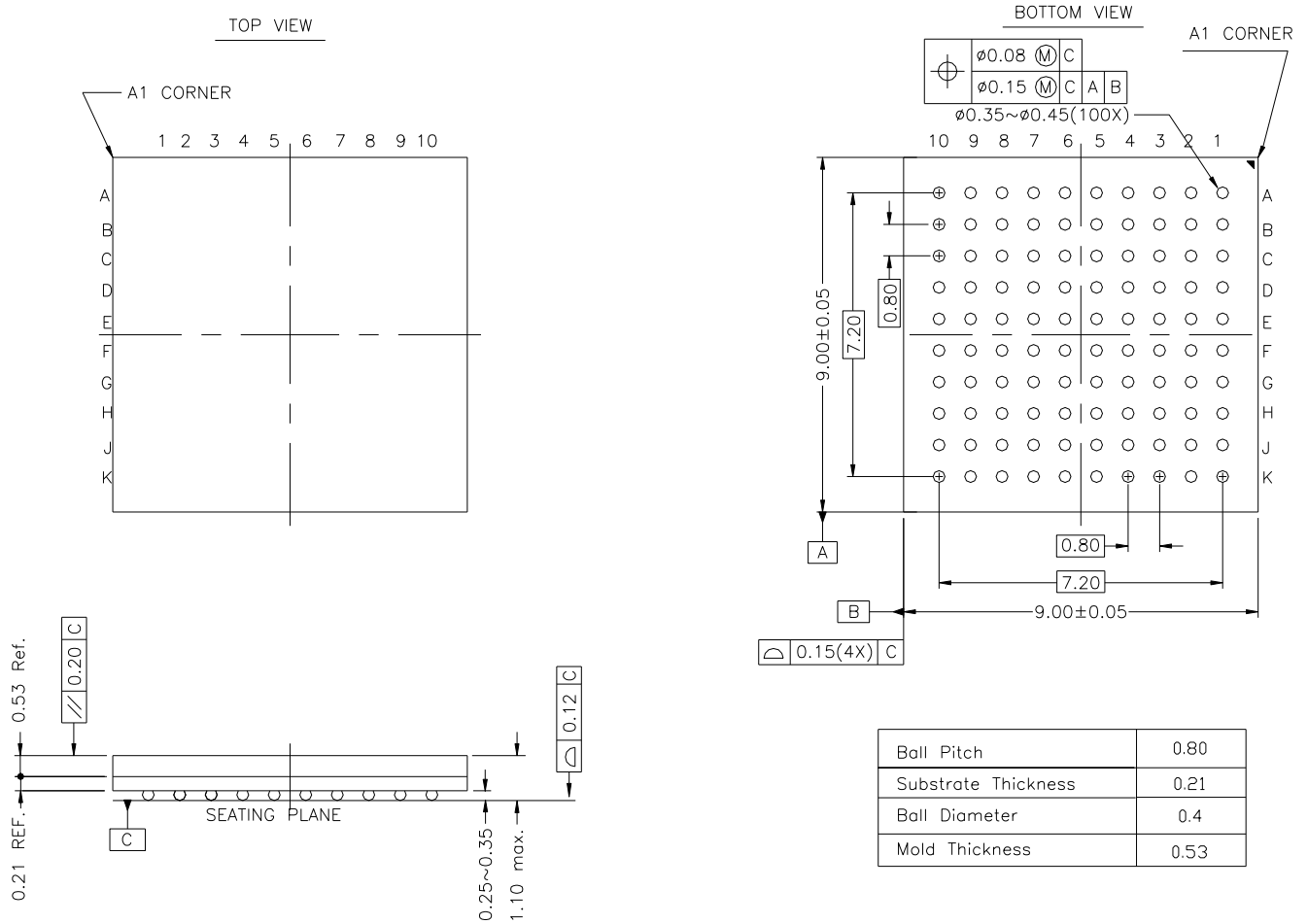
Figure 39-1. LQFP Package Drawing



**Table 39-1.** 100-lead LQFP Package Dimensions

Symbol	Millimeter			Inch		
	Min	Nom	Max	Min	Nom	Max
A			1.60			0.063
A1	0.05		0.15	0.002		0.006
A2	1.35	1.40	1.45	0.053	0.055	0.057
D	16.00 BSC			0.630 BSC		
D1	14.00 BSC			0.551 BSC		
E	16.00 BSC			0.630 BSC		
E1	14.00 BSC			0.551 BSC		
R2	0.08		0.20	0.003		0.008
R1	0.08			0.003		
Q	0°	3.5°	7°	0°	3.5°	7°
θ1	0°			0°		
θ2	11°	12°	13°	11°	12°	13°
θ3	11°	12°	13°	11°	12°	13°
c	0.09		0.20	0.004		0.008
L	0.45	0.60	0.75	0.018	0.024	0.030
L1	1.00 REF			0.039 REF		
S	0.20			0.008		
b	0.17	0.20	0.27	0.007	0.008	0.011
e	0.50 BSC			0.020 BSC		
D2	12.00			0.472		
E2	12.00			0.472		
Tolerances of Form and Position						
aaa	0.20			0.008		
bbb	0.20			0.008		
ccc	0.08			0.003		
ddd	0.08			0.003		

**Figure 39-2.** 100-TFBGA Package Drawing



All dimensions are in mm

**Table 39-2.** Device and LQFP Package Maximum Weight

AT91SAM7X512/256/128	800	mg
----------------------	-----	----

**Table 39-3.** Package Reference

JEDEC Drawing Reference	MS-026
JESD97 Classification	e3

**Table 39-4.** LQFP Package Characteristics

Moisture Sensitivity Level	3
----------------------------	---

This package respects the recommendations of the NEMI User Group.

## 39.2 Soldering Profile

Table 39-5 gives the recommended soldering profile from J-STD-020C.

**Table 39-5.** Soldering Profile

Profile Feature	Green Package
Average Ramp-up Rate (217°C to Peak)	3° C/sec. max.
Preheat Temperature 175°C ±25°C	180 sec. max.
Temperature Maintained Above 217°C	60 sec. to 150 sec.
Time within 5° C of Actual Peak Temperature	20 sec. to 40 sec.
Peak Temperature Range	260° C
Ramp-down Rate	6° C/sec. max.
Time 25° C to Peak Temperature	8 min. max.

Note: The package is certified to be backward compatible with Pb/Sn soldering profile.

A maximum of three reflow passes is allowed per component.