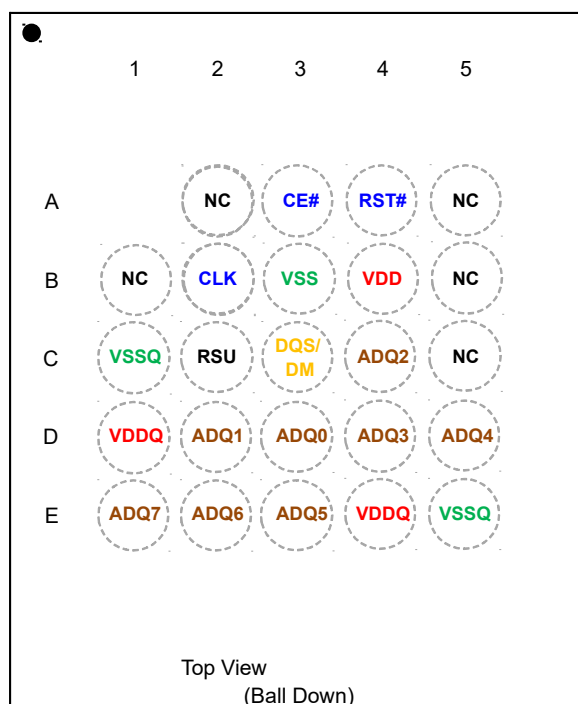


Quad and Octal SPI IOT RAM and Mobile LPDDR2 and LPDDR3 DRAM  
 APMemory Octal SPI Pseudo SRAMs are compliant with the Xccela™ consortium standard memory bus allowing up to 400MB/s data transfer rates with lowest standby current and I/O count especially for mobile, wearable and various IoT applications as a cost-optimized compact solution. APMemory is one of the consortium founding members as specialist for low to mid density volatile memory products already supplied as Known-Good-Die (bare tested chips) for Chip-On-Board or Multi-Chip-Package applications – now coming out in popular package standards for Surface-Mount-Technology board assembly throughout 2018 according to a tentative road map at the bottom of page 3.

### Ball Assignment for Octal SPI miniBGA 24L package



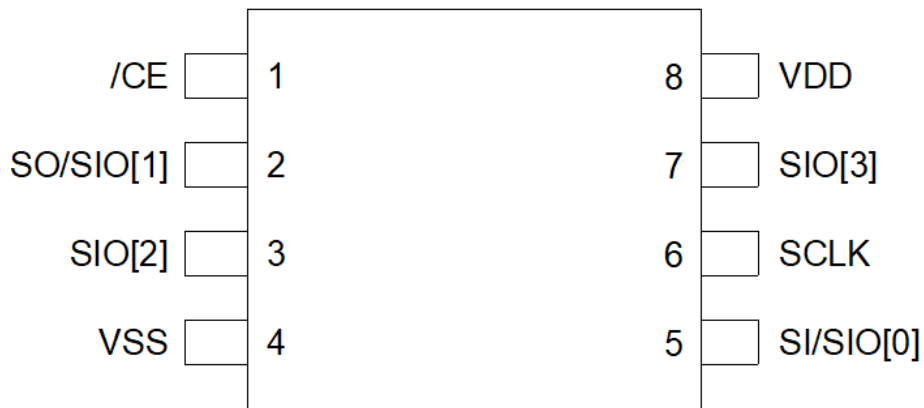
6 x 8 x 1.2mm (Ball Size 0.4 - Pitch 1.0)

APS6408L-OB-BA for 1.8V

APS6408L-3OB-BA for 3V

Pin/Pad assignment for SPI and Quad SPI PSRAM in SOP / USON / WSON Package Types

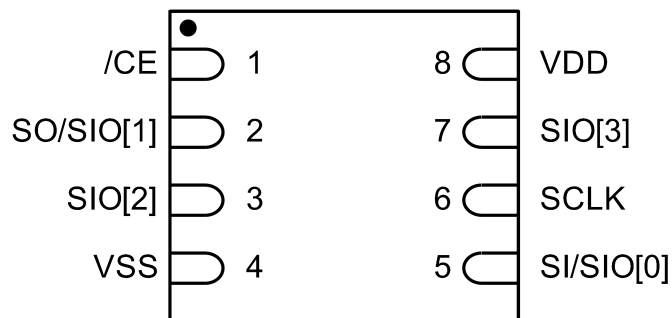
SOP-8L



APS6404L-SQ-SN for 1.8V

APS6404L-3SQ-SN for 3V

USON

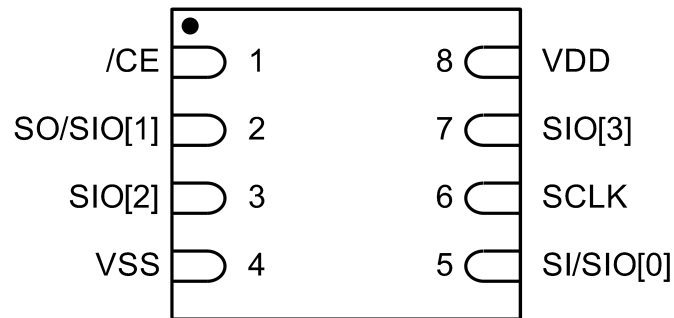


(3 x 2 x 0.55mm)

APS6404L-SQ-ZR for 1.8V

APS6404L-3SQ-ZR for 3V

### WSON



(6 x 5 x 0.75mm)

APS6404L-SQ-ZP for 1.8V

APS6404L-3SQ-ZP for 3V

## IoT RAM (Quad-/Octal-SPI PSRAM) availability

<u>IoT RAM</u>	16Mb	32Mb	64Mb	128Mb
1.8V <u>QSPI</u>	Q1'18	Q3'18	Now	-
3V <u>QSPI</u>	Q1'18	Q3'18	Now	-
1.8V <u>OSPI</u>	-	Q3'18	Now	Q2'18
3V <u>OSPI</u>	-	Q3'18	Now	-

## Mobile 16/32bit LPDDR2 and LPDDR3

APMemory as a leading Low Power DRAM supplier in Known-Good-Die plans to release DDR2 and DDR3 versions also in standard Flat Ball Grid Array packages:

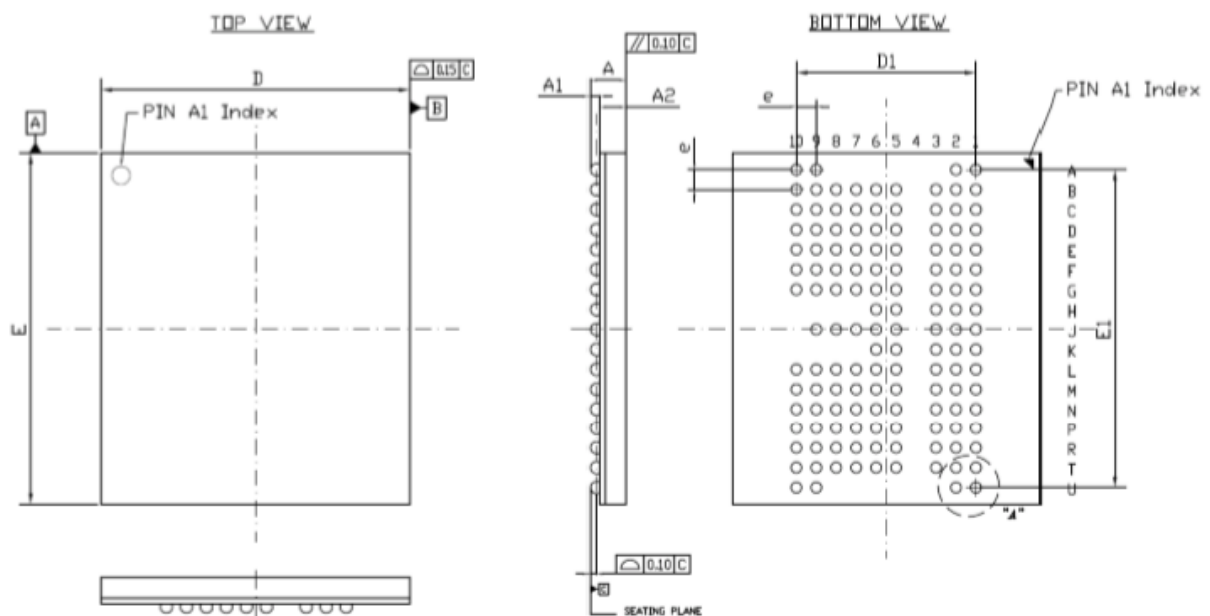
AD251232/16E 512Mb LPDDR2

AD210032/16F 1Gb LPDDR2

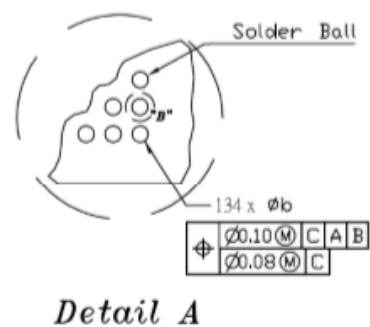
AD220032/16D 2Gb LPDDR2

AD240032/16C 4Gb LPDDR2

### 134-Ball FBGA



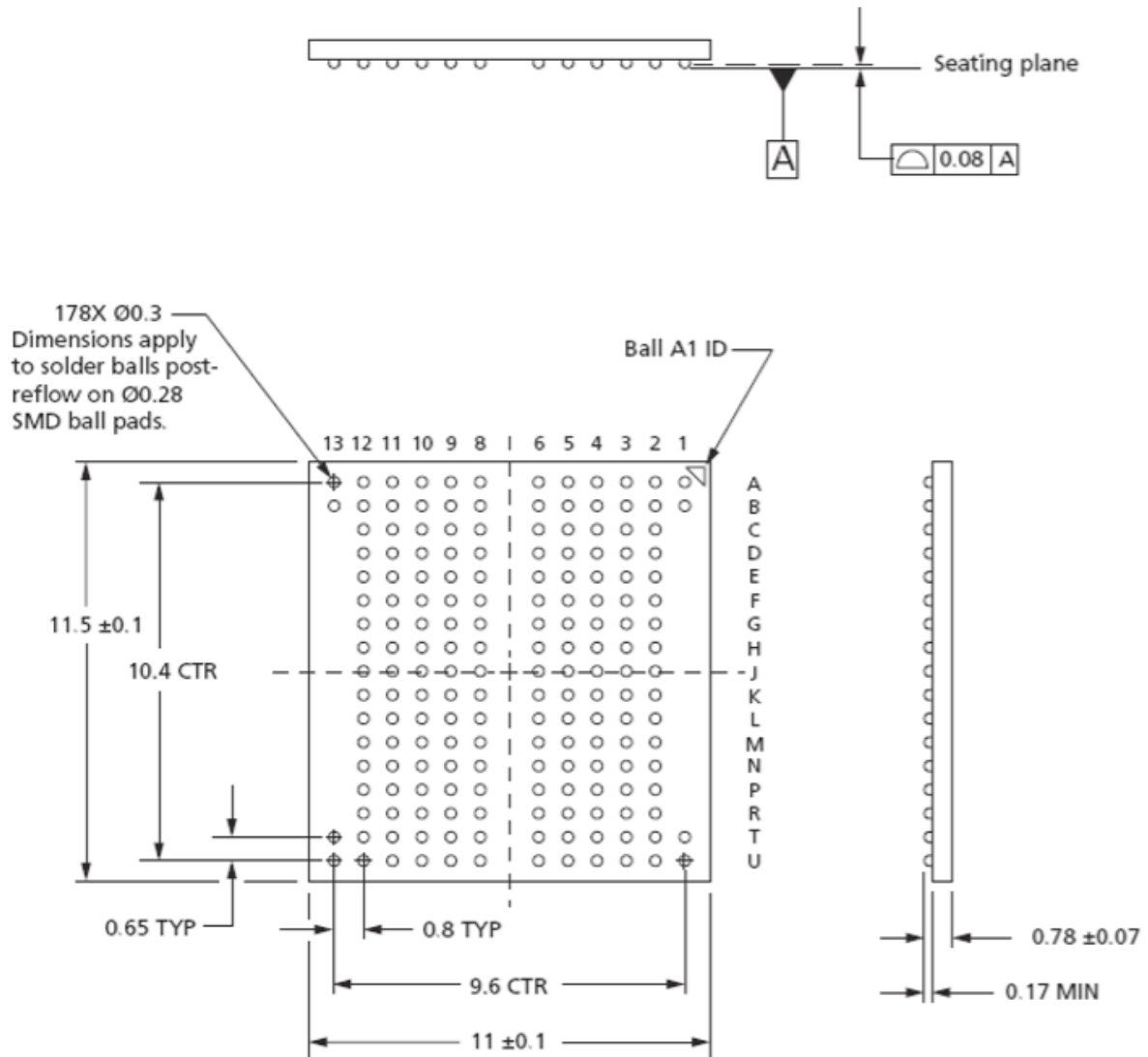
REF.	Dimension in mm		
	Min	Nom	Max
A	—	—	0.98
A1	0.27	0.32	0.37
A2	0.55	0.58	0.61
øb	0.35	0.40	0.45
D	9.90	10.00	10.10
D1	5.85 BSC		
E	11.40	11.50	11.60
E1	10.40 BSC		
e	0.65 BSC		



10x11.5x1.0mm, ball pitch 0.65mm, ball size 0.3mm (package code AB)

AD340032/16A 4Gb LPDDR3

178-Ball FBGA



11x11.5x0.8mm, ball pitch 0.8/0.65mm, ball size 0.3mm (package code BL)

Other package standards are under evaluation and are depending on market demand. Further information on availability of various package types can be made available upon request.