

**AS4C128M16D3LC-12BCN vs AS4C128M16D3LD-12BCN Comparison**

Part Number & result Parameter	AS4C128M16D3LC-12BCN/TR	AS4C128M16D3LD-12BCN/TR
<b>Product Description</b>	<b>DDR3L SDRAM</b>	
<b>Process Technology</b>	<b>25nm</b>	<b>30nm</b>
<b>Capacity</b>	2Gb (128M x 16)	2Gb (128M x 16)
<b>Memory Org.</b>	16M words, x16 bits, x8 banks	16M words, x16 bits, x8 banks
<b>Operating Power Supply</b>	$V_{DD} \& V_{DDQ} = 1.35V(1.283V \text{ to } 1.45V)$	
<b>DDR3 Compatibility</b>	Backward Compatible to DDR3 SDRAM (1.5V +/-0.075)	
<b>Operating Temperature</b>	Commercial (Tc = 0°C to 95°C)	Commercial (Tc = 0°C to 95°C)
<b>Clock Frequency</b>	800MHz	800MHz
<b>Data Rate (MT/s)</b>	1600	1600
<b>CAS Latency</b>	11	11
<b>tRCD &amp; tRP (ns)</b>	13.75	13.75
<b>Average Refresh Period</b>	7.8µs at -40°C ≤ Tc ≤ +85°C 3.9us at +85°C ≤ TC ≤ +95°C	7.8µs at -40°C ≤ Tc ≤ +85°C 3.9us at +85°C ≤ TC ≤ +95°C
<b>I/O Capacitance</b>	CIO = 1.4 ~2.2pF	CIO = 1.2 ~2.3pF
<b>Pin Compatibility</b>	Pin to Pin Compatible	
<b>AC/DC Characteristics</b>	Same	
<b>IDD Spec conditions</b>	0°C to 95°C	0°C to 95°C
<b>I<sub>DD0</sub> (mA)</b>	70	65
<b>I<sub>DD1</sub> (mA)</b>	80	90
<b>I<sub>DD2P0</sub> (mA)</b>	15	11
<b>I<sub>DD2P1</sub> (mA)</b>	22	20
<b>I<sub>DD2N/2Q</sub> (mA)</b>	35	30
<b>I<sub>DD3P</sub> (mA)</b>	35	30
<b>I<sub>DD3N</sub> (mA)</b>	55	40
<b>I<sub>DD4R</sub> (mA)</b>	155	150
<b>I<sub>DD4W</sub> (mA)</b>	160	150
<b>I<sub>DD5B</sub> (mA)</b>	145	135
<b>I<sub>DD6</sub> (mA)</b>	15	11
<b>I<sub>DD6ET</sub> (mA)</b>	20	14
<b>I<sub>DD7</sub> (mA)</b>	240	210
<b>I<sub>DD8</sub> (mA)</b>	14	13
<b>Package 96b FBGA</b>	7.5 x 13 x 1.0mm Ball Array: 12 x 6.4 x 0.8mm	9 x 13 x 1.2mm Ball Array: 12 x 6.4 x 0.8mm