7410E RISC Microprocessor HiTCE™ Multichip Package

OVERVIEW

The WEDC 7410E/SSRAM multichip package is targeted for high performance, space sensitive, low power systems and supports the following power management features: doze, nap, sleep and dynamic power management.

The WED3C7410E16MC-XBHX multichip package consists of:

- 7410E AltiVec™ RISC processor
- Dedicated 2MB SSRAM L2 cache, configured as 256Kx72
- 21mmx25mm, 255 HiTCE™ Ball Grid Array (CBGA)
- Core frequency = 450 or 400MHz
- Maximum L2 Cache frequency = 200MHz
- Maximum 60x Bus frequency = 133MHz**

The WED3C7410E16MC-XBHX is offered in Commercial (0°C to +70°C), industrial (-40°C to +85°C) and military (-55°C to +125°C) temperature ranges and is well suited for embedded applications such as missiles, aerospace, flight computers, fire control systems and rugged critical systems.

FEATURES

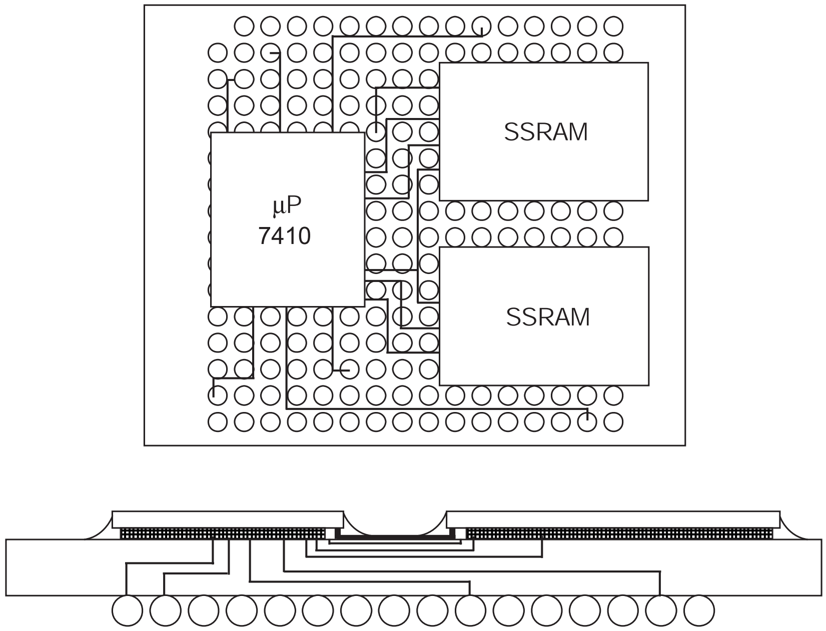
- Footprint compatible with WED3C7410E16M-XBX, WED3C7558M-XBX and WED3C750A8M-200BX
- Implementation of Altivec™ technology instruction set
- Optional, high-bandwidth MPX bus interface
- HiTCE™ interposer for TCE compatibility to laminate substrates for increased Board level reliability
- Available with eutectic or high lead solder balls

* This product is subject to change without notice.

** At a maximum of 60x bus frequency of 133MHz, the maximum configuration core frequency is 400MHz.

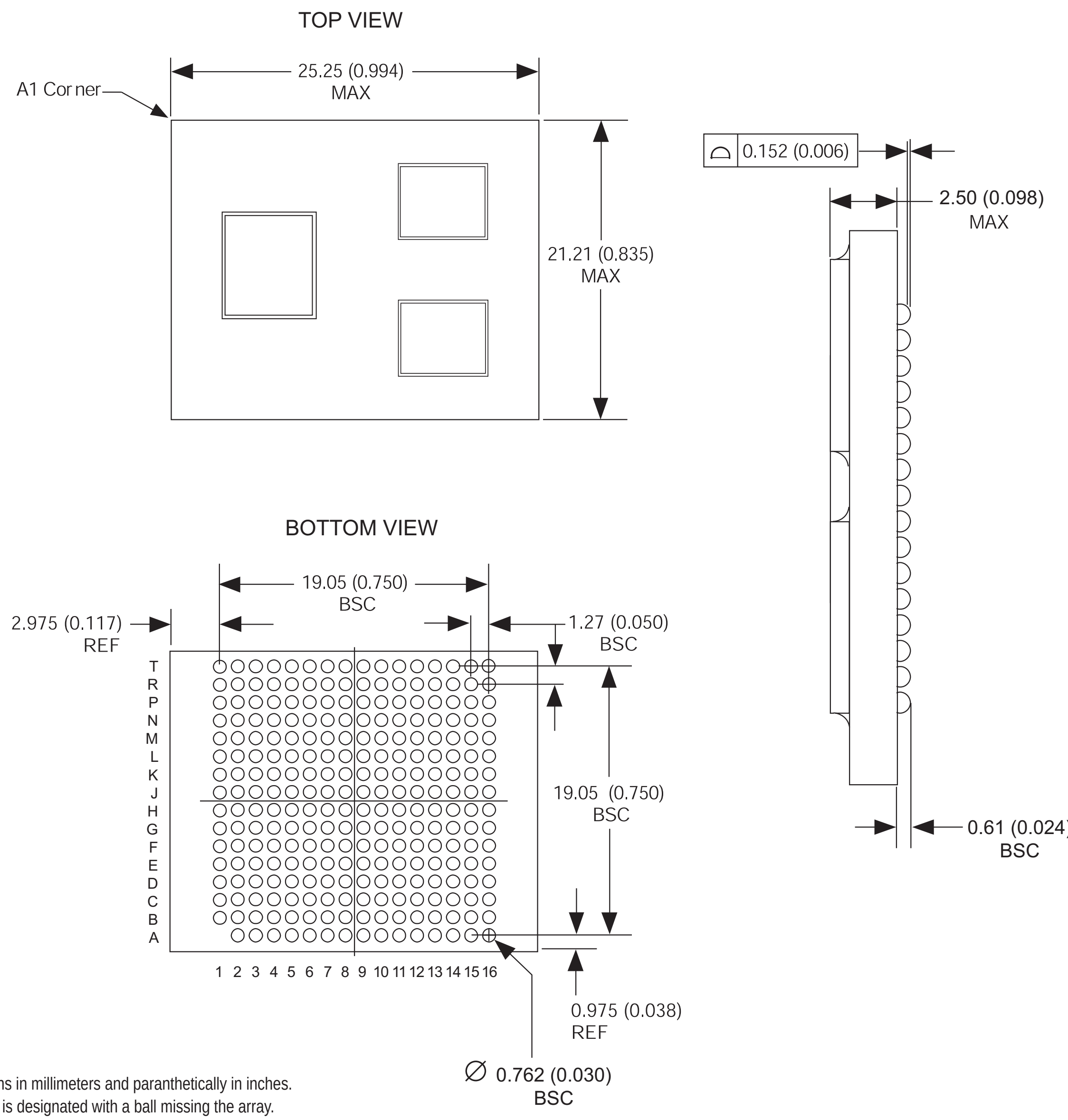
NOTE: Operating temperatures are case temperatures (backside of processor die).

FIGURE 1 – MULTI-CHIP PACKAGE DIAGRAM



AltiVec™ is a trademark of Motorola Inc.
HiTCE™ is a trademark of Kyocera Corp.

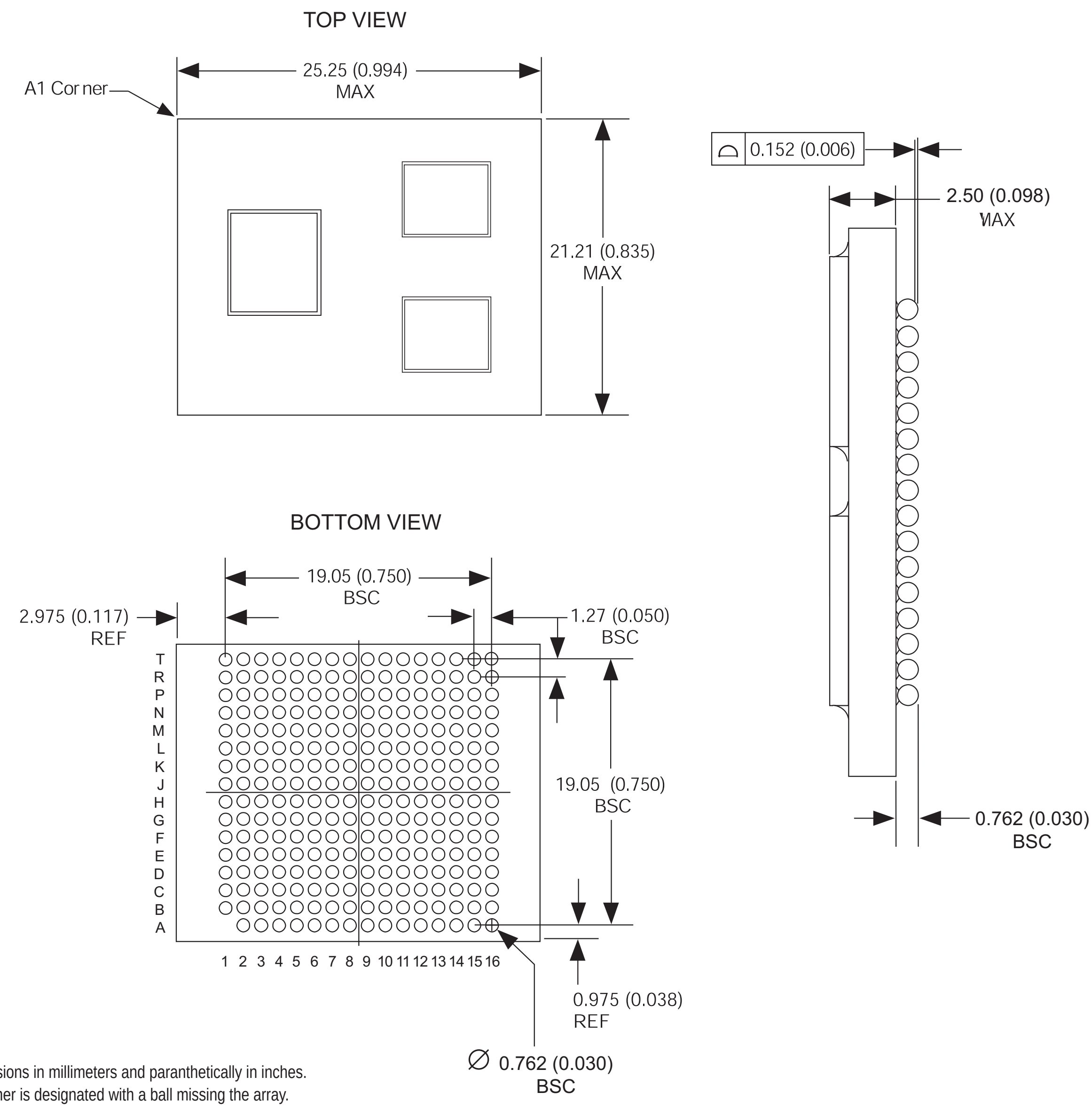
HITCE™ 255 BALL GRID ARRAY – BH PACKAGE (63Sn/37Pb SOLDER BALLS)



NOTES:
1. Dimensions in millimeters and paranthetically in inches.
2. A1 corner is designated with a ball missing the array.

Microsemi Corporation reserves the right to change products or specifications without notice.

HITCE™ 255 BALL GRID ARRAY – BH9 PACKAGE (90Pb/10Sn SOLDER BALLS)



NOTES:
1. Dimensions in millimeters and paranthetically in inches.
2. A1 corner is designated with a ball missing the array.

HITCE™ MATERIAL PROPERTIES

		CERAMIC	
Item	Unit	Al_2O_3	HiTCE™
Color	—	Black	Green
ELECTRICAL			
Dielectric Constant (1MHz/10GHz)	—	9.8	5.3/5.2
THERMAL			
Coefficient of Linear Thermal Expansion (40~400 degrees C)	1/degree C $(x10^{-6})$	7.1	12.3
Thermal Conductivity (20 degrees C)	w / m•k	14	2
MECHANICAL			
Flexural Strength	MPa	400	175
Young's Modulus of Elasticity	GPa	310	75

ORDERING INFORMATION

WED 3 C 7410E 16M C - X BH X X

MICROSEMI CORPORATION

PowerPC™ = 3

MULTICHIP PACKAGE = C

PowerPC™ TYPE:
Type 7410E

L2 CACHE DENSITY:
16Mbits = 256K x 72 SSRAM – 200MHz

L2 CACHE REVISION
C = Rev. C

CORE FREQUENCY (MHz)
400 = 400MHz
450 = 450MHz

PACKAGE TYPE:
BH = 255 HiTCE™ Ball Grid Array

OPTION:
Blank = 63Sn/37Pb Solder Balls
9 = 90Pb/10Sn Solder Balls

DEVICE GRADE:

M = Military Screened	-55°C to +125°C
I = Industrial	-40°C to +85°C
C = Commercial	0°C to +70°C

PowerPC™ is a trademark of International Business Machine Corp.
HiTCE™ is a trademark of Kyocera Corp.

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Document Title

7410E16MC RISC Microprocessor HiTCE™ Multichip Package

Revision History

Rev #	History	Release Date	Status
Rev 0	Initial Release	October 2007	Final
Rev 1	Changes (Pg.1) 1.1 Change document layout from White Electronic Designs to Microsemi	August 2011	Final
Rev 2	Changes (Pg. 1) 2.1 Added note to page 1 "Operating temperatures are junction temperatures."	November 2011	Final
Rev 3	Changes (Pg. 12) 3.1 Correct solder composition in figure title from (63Pb/37SN) to (63Sn/37Pb)	January 2012	Final