

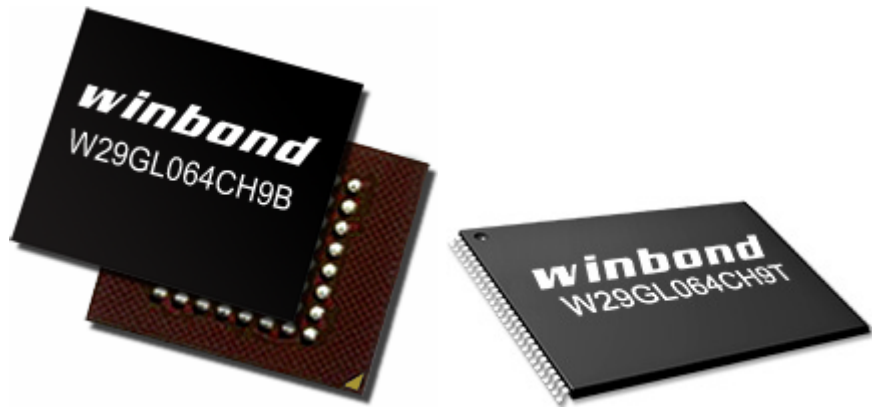
W29GL064C



**ADVANCED
INFORMATION
August 2010**

PRODUCT BRIEF

64M-Bit 3.0 Volt Parallel Flash Memory with Page Mode



*Publication Release Date: August 13, 2010
ADVANCED INFORMATION, Revision B*



GENERAL DESCRIPTION

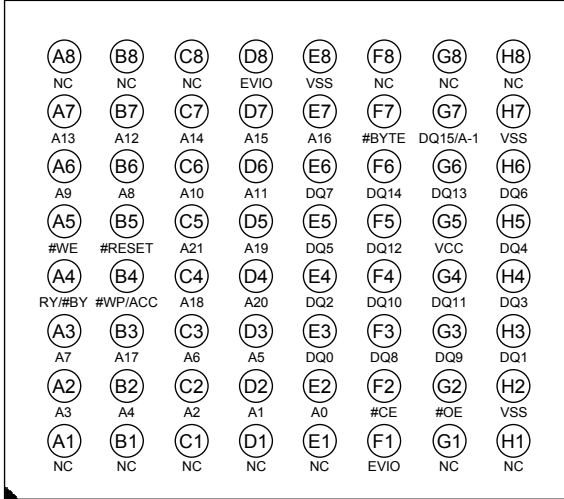
The W29GL064C Parallel Flash memory provides a storage solution for embedded system applications that require better performance, lower power consumption and higher density. The device has a random access speed of 90ns and a fast page access speed of 25ns, as well as significantly faster program and erase time than the products available on the market today. The W29GL064C also offers special features such as Compatible Manufacturer ID that makes the device industry standard compatible without the need to change firmware.

FEATURES

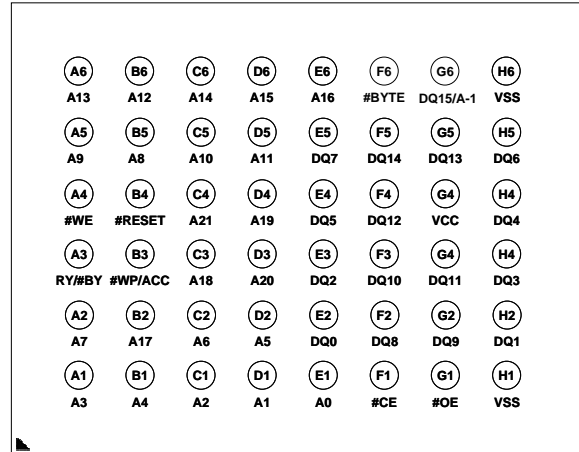
- **32k-Word/64k-Byte sector architecture**
 - Total 128 uniform sectors
 - Total 127 uniform sectors + eight 4k-Word/8k-Byte sectors
- **16-Word/32-Byte write buffer**
 - Reduces total program time for multiple-word updates
- **8-Word/16-Byte page read buffer**
- **Secured Silicon Sector area**
 - Programmed and locked by the customer or during production
 - 128-word/256-byte sector for permanent, safe identification using an 8-word/16-byte random electronic serial number
- **Enhanced Sector Protect using Dynamic and Individual mechanisms**
- **Polling/Toggling methods are used to detect the status of program and erase operation**
- **Suspend and resume commands used for program and erase operations**
- **More than 100,000 erase/program cycles**
- **More than 20-year data retention**
- **Low power consumption**
- **Deep power down mode**
- **Wide temperature range**
- **Compatible manufacturer ID for drop-in replacement**
 - No firmware change is required
- **Faster Erase and Program time**
 - Erase is 1.5x faster than industry standard
 - Program is 2x faster than industry standard
 - Allows for improved production throughput and faster field updates
- **CFI (Common Flash Interface) support**
- **Single 3V Read/Program/Erase (2.7 - 3.6V)**
- **Enhanced Variable I/O control**
 - All input levels (address, control, and DQ) and output levels are determined by voltage on the EVIO input. EVIO ranges from 1.65 to VCC
- **#WP/ACC Input**
 - Accelerates programming time (when VHH is applied) for greater throughput during system production
 - Protects first or last sector regardless of sector protection settings for uniform sector products
- **Hardware reset input (#reset) resets device**
- **Ready/#Busy output (RY/#BY) detects completion of program or erase cycle**
- **Packages**
 - Uniform Sector (H/L)
 - 56-pin TSOP
 - 64-ball Fortified BGA
 - Boot Sector (T/B)
 - 48-pin TSOP
 - 48-ball Very Fine-Pitch BGA[†]
 - 64-ball Fortified BGA



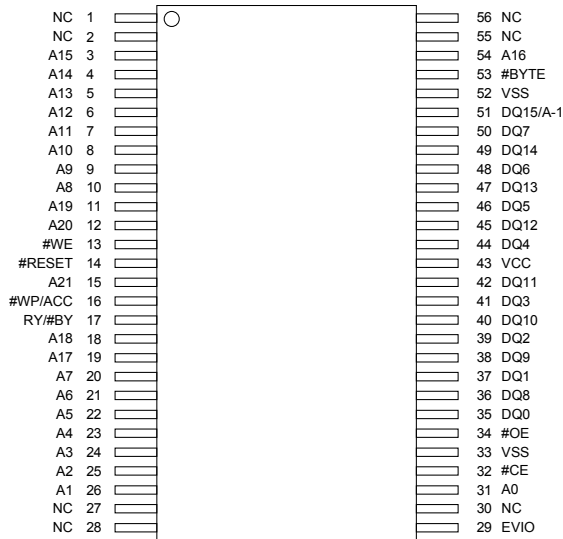
PIN CONFIGURATIONS



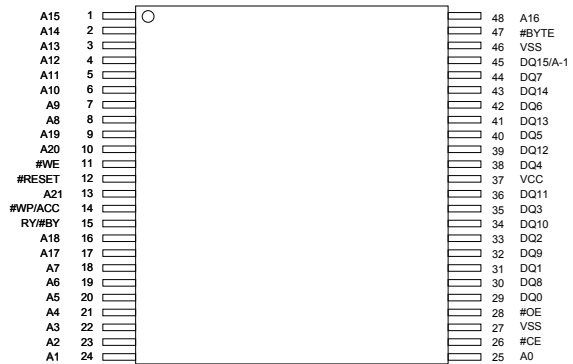
FBGA-64 Top View Face Down



VFBGA-48 Top View Face Down



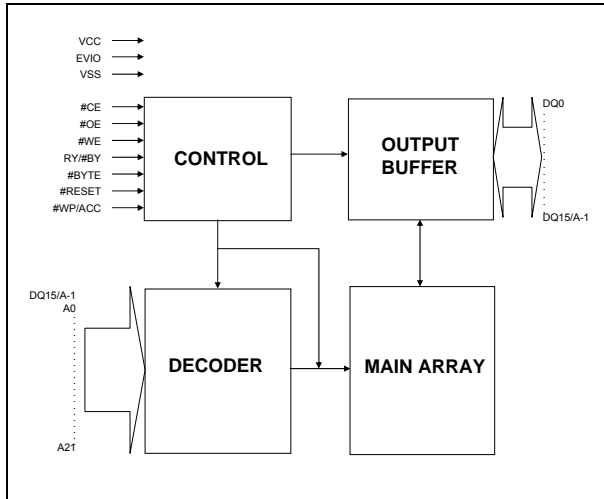
56-pin Standard TSOP (Top View)



48-pin Standard TSOP (Top View)



BLOCK DIAGRAM



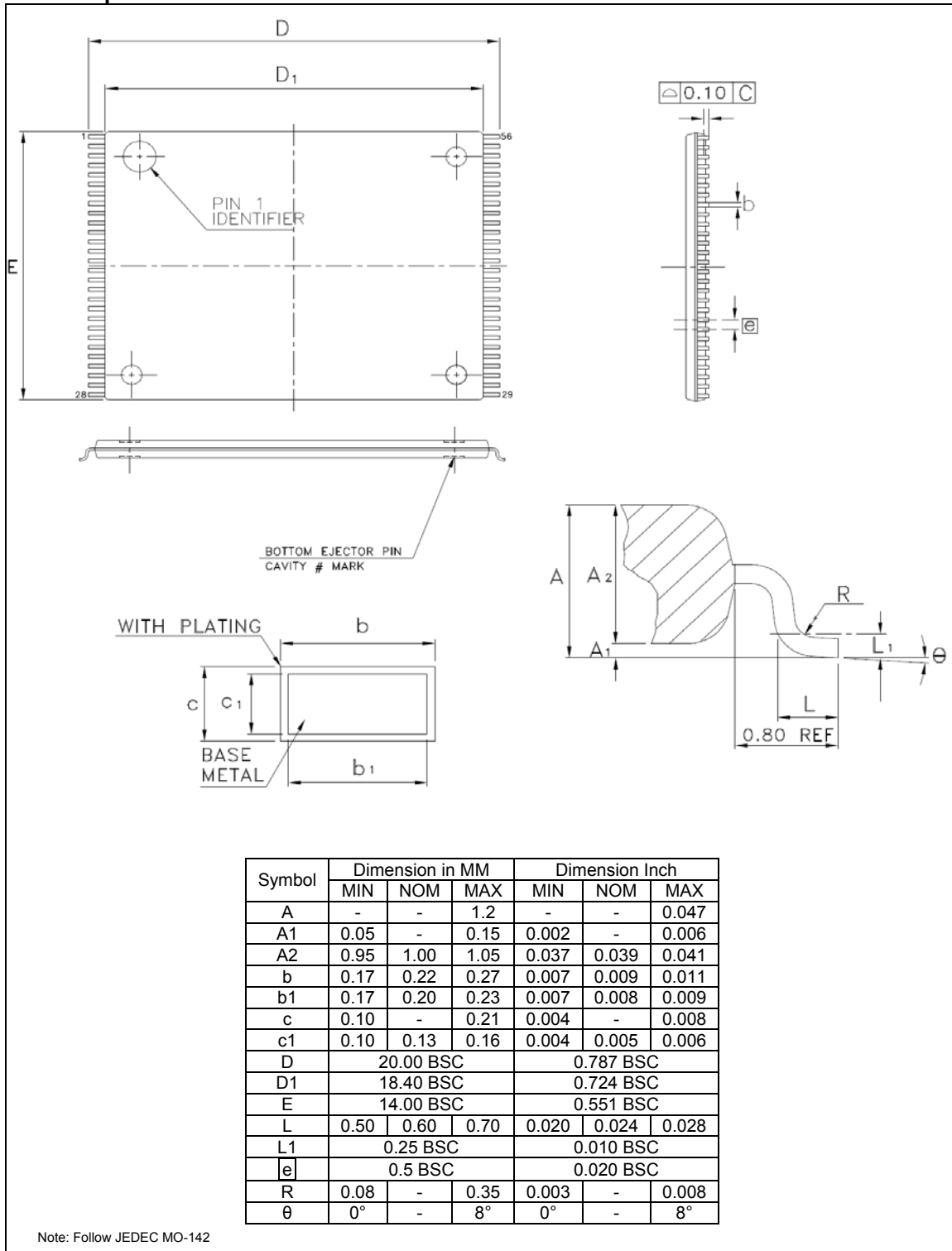
PIN DESCRIPTION

SYMBOL	PIN NAME	
A0-A21	Address Inputs	
DQ0-DQ14	Data Inputs/Outputs	
DQ15/A-1	Word mode	DQ15 is Data Input/Output
	Byte mode	A-1 is Address Input
#CE	Chip Enable	
#OE	Output Enable	
#WE	Write Enable	
#WP/ACC	Hardware Write Protect/Acceleration Pin	
#BYTE	Byte Enable Input	
#RESET	Hardware Reset	
RY/#BY	Ready/Busy Status	
Vcc	Power Supply	
EVIO	Enhanced Variable IO Supply (No connect for top/bottom FBGA-64 configurations)	
Vss	Ground	



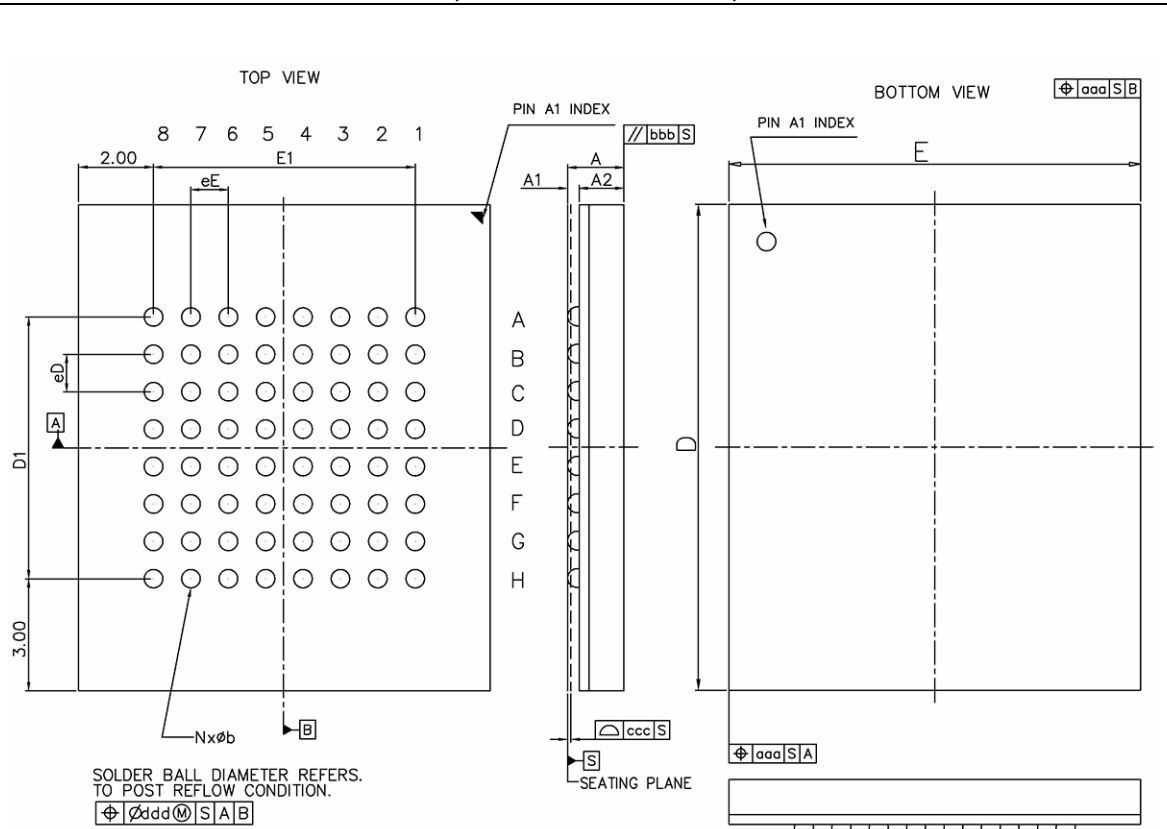
PACKAGE SPECIFICATIONS

TSOP 56-pin 14x20mm





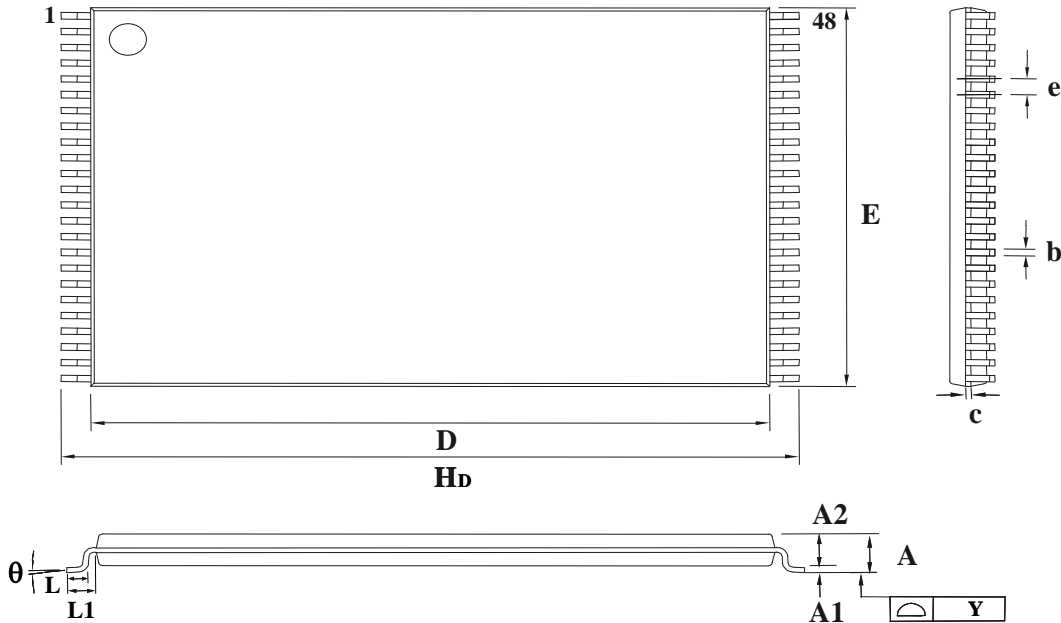
Fortified BGA 64-ball 11x13x1.4mm, Ball Diameter 0.6mm, Ball Pitch 1.0mm



SYMBOL	DIMENSION (MM)		
	MIN	NOM	MAX
A	-	-	1.2
A1	0.36	0.41	0.46
A2	-	0.66	-
b	0.45	0.5	0.55
D	12.90	13.00	13.10
E	10.90	11.00	11.10
E1	7.00 BSC		
D1	7.00 BSC		
eD	1.00 BSC		
eE	1.00 BSC		
aaa	0.10		
bbb	-	-	0.25
ccc	-	-	0.15
ddd	-	-	0.25
N	64		



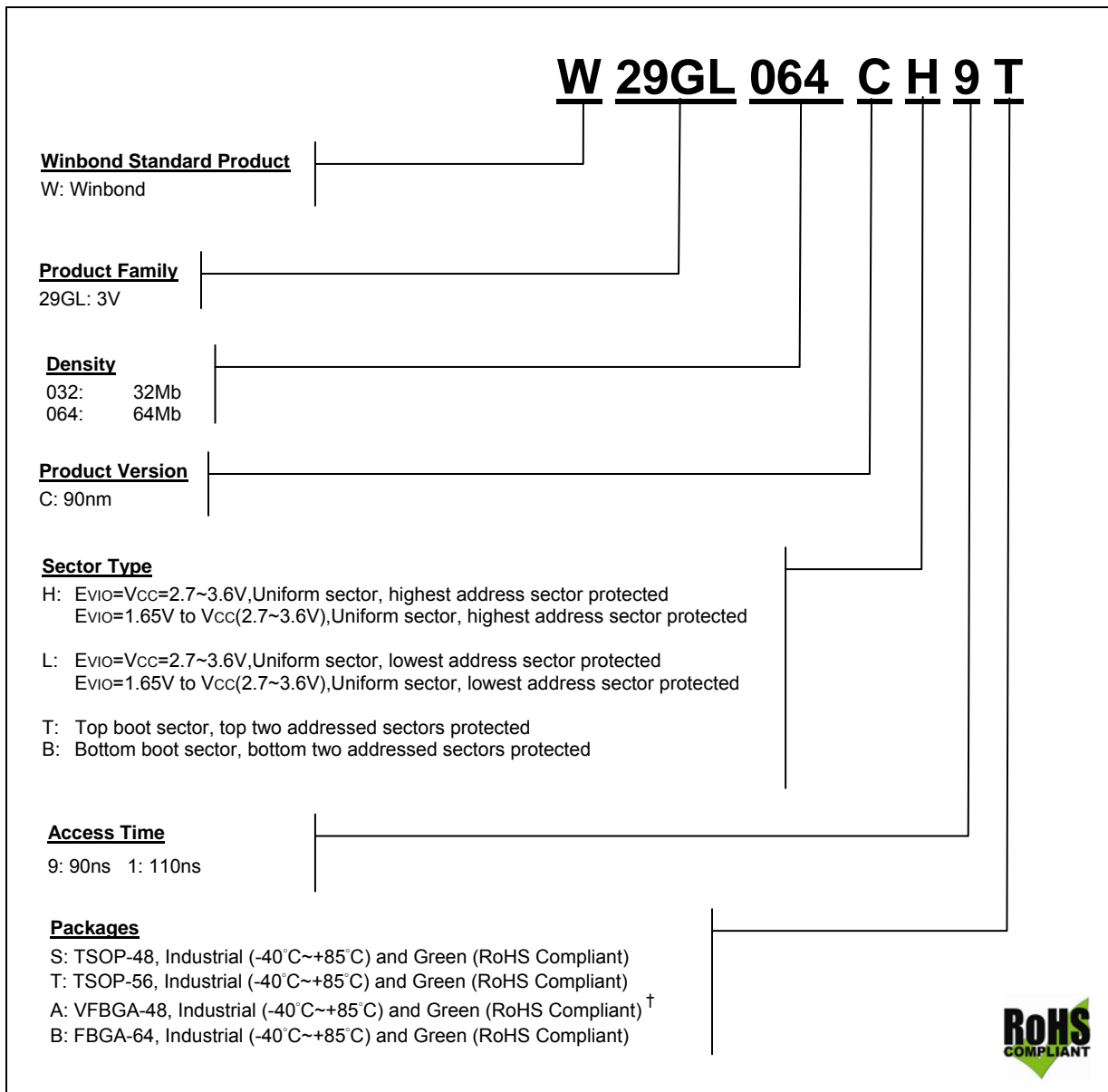
TSOP 48L 12x20mm



SYMBOL	DIMENSION (MM)			DIMENSION (INCH)		
	MIN	NOM	MAX	MIN	NOM	MAX
A	-	-	1.20	-	-	1.20
A1	0.05	-	-	0.002	-	-
A2	0.95	1.00	1.05	0.037	0.039	0.041
D	18.3	18.4	18.5	0.720	0.724	0.728
Hd	19.8	20.0	20.2	0.780	0.787	0.795
E	11.9	12.0	12.1	0.468	0.472	0.476
b	0.17	0.22	0.27	0.007	0.009	0.011
c	0.10	-	0.21	0.004	-	0.008
e	-	0.50	-	-	0.020	-
L	0.50	0.60	0.70	0.020	0.024	0.028
L1	-	0.80	-	-	0.031	-
Y	-	-	0.10	-	-	0.004
θ	0	-	5	0	-	5



ORDERING INFORMATION



[†] Contact Winbond for availability of this package.



Valid Part Numbers and Top Side Marking

The following table provides the valid part numbers for the W29GL064C Parallel Flash Memory. Please contact Winbond for specific availability by density and package type. Winbond Parallel memories use a 12-digit Product Number for ordering.

PACKAGE TYPE	DENSITY	PRODUCT NUMBER	TOP SIDE MARKING
TSOP-48	64Mb	W29GL064CT9S	W29GL064CT9S
TSOP-48	64Mb	W29GL064CB9S	W29GL064CB9S
VFBGA-48[†]	64Mb	W29GL064CT9A	W29GL064CT9A
VFBGA-48[†]	64Mb	W29GL064CB9A	W29GL064CB9A
TSOP-56	64Mb	W29GL064CH9T	W29GL064CH9T
TSOP-56	64Mb	W29GL064CL9T	W29GL064CL9T
BGA-64	64Mb	W29GL064CT9B	W29GL064CT9B
BGA-64	64Mb	W29GL064CB9B	W29GL064CB9B
BGA-64	64Mb	W29GL064CH9B	W29GL064CH9B
BGA-64	64Mb	W29GL064CL9B	W29GL064CL9B

[†] Contact Winbond for availability of this package.



HISTORY

VERSION	DATE	PAGE	DESCRIPTION
A	05/27/2010	-	Initial Issued
B	08/13/2010	2,3,7 9	Added VFBGA48 & TSOP48 Packages Valid Part Numbers Table

Advanced Information Designation

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