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Jameco Part Number 1303417

**1.0 SCOPE**

This specification covers the performance requirements of the 1.27 mm centerline angled Reverse DDR Dimm socket for board to board interconnect for 1.27 ± 0.10 thick memory modules.

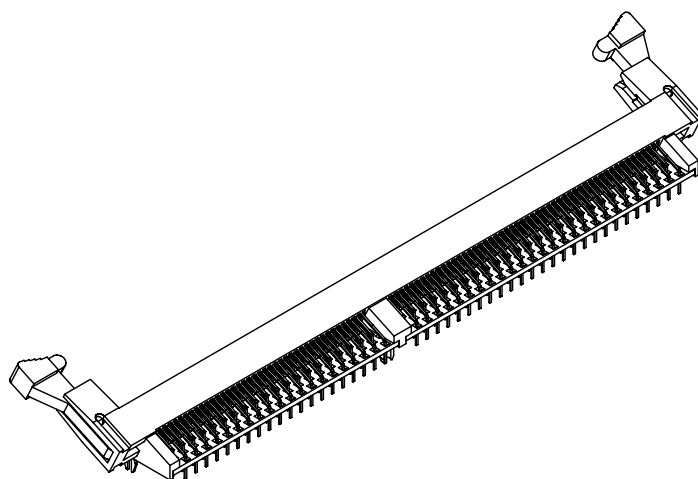
2.0 PRODUCT DESCRIPTION

2.1 The part number series with suffixes “****” designating product versions covered in this specification are as follow:-

Part Number Series**Product Description**

87639-****

1.27 mm Pitch 184 Ckts 25 Deg Reverse DDR Dimm



TENTATIVE RELEASE: THIS SPECIFICATION IS BASED ON DESIGN OBJECTIVES AND IS STRICTLY TENTATIVE. PRELIMINARY TEST DATA MAY EXIST, BUT THIS SPECIFICATION IS SUBJECT TO CHANGE BASED ON THE RESULTS OF ADDITIONAL TESTING AND EVALUATION

REV.	3	3	3	3	3	3	3	3	3	3	3	3											
SHEET	1	2	3	4	5	6	7	8	9	10	11	12											
REVISE ON PC ONLY								TITLE:															
3	Released as per ECN#S2003-0240 by 2002/11/29							1.27 mm Pitch 184 Ckts 25 Deg . Reverse DDR Dimm															
								THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION															
REV.	DESCRIPTION																						
DESIGN CONTROL MXS				STATUS T				WRITTEN BY: VS KHOANG				CHECKED BY: PT LIM				APPROVED BY: KC LING				DATE: YR/MO/DAY 2002/11/28			

DOCUMENT NUMBER

PS-87639-002

FILENAME

PS87639.LWP

SHEET

1 OF 12

**2.0 PRODUCT DESCRIPTION (Continue...)**

2.2 Dimensions, Materials, Plating and Markings
See the appropriate Sales Drawings for information on dimensions, materials, plating and markings

2.3 UL/CSA Certification

UL file number: E29179, Vol 10
CSA file number: LR19980 (152514)

3.0 APPLICABLE DOCUMENTS

See the Sales Drawings and the other sections of this specification for the necessary reference documents and specifications.

4.0 RATINGS

4.1 Voltage: 50 Volts AC (RMS) DC

4.2 Current: 1.0 Amps

4.3 Temperature

Operating: -40 °C to +85 °C

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	3	See sheet 1		
	REV.	DESCRIPTION	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO INC. AND MUST NOT BE USED WITHOUT WRITTEN PERMISSION	
DOCUMENT NUMBER PS-87639-002			FILENAME PS-87639 (REV3	SHEET 2
ES-40000-3996 REV. A SHEET 4 95/MAR/10 EC U5-0926 DCBRD03.LWP				



PRODUCT SPECIFICATION



LANGUAGE

ENGLISH

5.0 PERFORMANCE

5.1 Electrical Performance

Item		Test Condition	Requirement
5-1-1	Contact Resistance	Mate connectors with a maximum voltage of 20 mV and a current of 10 mA (measurement location in section 8.3)	Contact Resistance: 40 mohms max (initial) 10 mohms max change from initial
5-1-2	Insulation Resistance	Mate connectors with a voltage of 500V DC between adjacent terminals or ground	1000 Mohms minimum
5-1-3	Dielectric Withstanding voltage	Mate connectors with a voltage of 500V AC (rms) for 1 minute between adjacent terminals and grounds	No breakdown
5-1-4	Capacitance	Measure between adjacent terminals at 1 MHz (loaded: 50 ohms impedance)	Loaded: 2 picofarads maximum

REVISE ON PC ONLY

3

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TITLE:

**1.27 mm Pitch 184 Ckts 25 Deg .
Reverse DDR Dimm**THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO
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REV.

DESCRIPTION

DOCUMENT NUMBER

PS-87639-002

FILENAME

PS-87639 (REV3

SHEET

3



PRODUCT SPECIFICATION



LANGUAGE

ENGLISH

5.2 Mechanical Performance

Item		Test Condition	Requirement
5-2-1	Terminal Retention Force in Housing	Apply an axial pull force on the terminal in the housing at a rate of 25 ± 6 mm per minute	0.40 kgf (0.88 lbs) minimum
5-2-2	Durability	Mate connectors up to 25 cycles at a maximum rate of 10 cycles per minute prior to define environmental tests	Contact Resistance: 10 mohms maximum change from initial
5-2-3	Vibration (Mil-std-1344 Method 2005.1 condition I)	Amplitude: 1.5mm peak to peak Sweep: 10-55-10 Hz in one minute Duration: 2 hours in each X-Y-Z axis (Test module shall be per section 8.2)	Contact Resistance: 40 mohms maximum Discontinuity: Not greater than 1 micro-second
5-2-4	Mechanical shock (Mil-std-1344 Method 2004.1 condition A)	30g's with half-sine waveform shocks pulses of 11 milliseconds duration in each x,y,z axis. (total 18 shocks) (Test module shall be per section 8.2)	Contact Resistance: 10 mohms maximum change from initial Discontinuity: Not greater than 1 micro-second
5-2-5	Total insertion and withdrawal force (excluding latches)	Insert and withdraw a steel blade at a rate of 25 ± 6 mm/min. Latches shall be excluded in the test. (gage dimensions refer to section 8.1)	Insertion force shall be 0.78N (0.175lbs) maximum with a maximum blade. Withdrawal force shall be 0.07N (0.0157lbs) minimum with a minimum blade per contact respectively x the total contact population

REVISE ON PC ONLY

3

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**1.27 mm Pitch 184 Ckts 25 Deg .
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REV.

DESCRIPTION

DOCUMENT NUMBER

PS-87639-002

FILENAME

PS-87639 (REV3

SHEET

4



PRODUCT SPECIFICATION



LANGUAGE

ENGLISH

5.2 Mechanical Performance (continue.....)

Item		Test Condition	Requirement
5-2-6	Total insertion force (with latches)	Insert a nominal thickness PCB without the edge chamfer at a rate of 25 ± 6 mm/min. Latches shall be included in the test.	Maximum insertion force: 15.57Kgf (34.33 lbs) -184 ckts
5-2-7	Latch Overstress Force	Apply an actuation force on the latch at a rate of 25 ± 6 mm/min in the fully open position and hold for 10 seconds	66.72N (15 lbs) force held for 10 seconds with no damage
5-2-8	Latch Actuation Force	Apply an actuation force on the latch at a rate of 25 ± 6 mm/min with recommended test module inserted into connector	The force to fully actuate the latch open shall be 44.48N (10 lbs) maximum per latch
5-2-9	Forklock retention force in housing	Apply an axial pullout force on the forklock in the housing at a rate of 25 ± 6 mm/min	1.0 Kgf (2.2 lbs) minimum
5-2-10	Retention of connector to PCB	Push connector with a force of 0.45kgf at a rate of 25 ± 6 mm/min from the PCB. PCB: 1.57 ± 0.18 mm thick (2.84 ± 0.18 mm thick for P/Ns 87639-0020, -0120).	No lifting of connector from applicable PCB
5-2-11	Insertion Force of connector into PCB	Push connector into minimum recommended diameter holes. PCB: 1.57 ± 0.18 mm thick (2.84 ± 0.18 mm thick for P/Ns 87639-0020, -0120). Rate: 25.4 ± 6 mm/min.	2.5 kgf (5.5lbs) maximum per forklock
5-2-12	Module Ripout Force	Pull up from the center of the module with the latches closed at a rate of 25 ± 6 mm/min	88.96N (20 lbs) minimum retention force of module in connector with no damage.

	REVISE ON PC ONLY		TITLE: 1.27 mm Pitch 184 Ckts 25 Deg . Reverse DDR Dimm	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO INC. AND MUST NOT BE USED WITHOUT WRITTEN PERMISSION
	3	See sheet 1		
	REV.	DESCRIPTION		
DOCUMENT NUMBER PS-87639-002			FILENAME PS-87639 (REV3	SHEET 5
ES-40000-3996 REV. A SHEET 4 95/MAR/10 EC U5-0926 DCBRD03.LWP				



PRODUCT SPECIFICATION



LANGUAGE

ENGLISH

5.3 Environmental Performance

Item		Test Condition	Requirement						
5-3-1	Thermal Shock (Mil-std-202F Method 107E)	Mate connectors and expose to 5 cycles of the following:- a) -40 +0/-3 °C for 15 minutes b) +25 ± 10 for 5 minutes max. c) +65 +3/-0 for 15 minutes d) +25 ± 10 for 5 minutes max.	Contact Resistance: 10 mohms maximum change from initial Appearance: No physical damage						
5-3-2	Thermal Aging (Mil-std-202F Method 108)	Mate connectors and expose to a temperature of 85 ± 2°C for 240 ± 10 hr.	Contact Resistance: 10 mohms maximum change from initial Appearance: No physical damage						
5-3-3	Temperature Rise	Mate connectors, series four contacts and measure the temperature rise at the rated current after 4 hours	Temperature Rise: 30 °C maximum above ambient						
5-3-4	Temperature Cycling	Mate connectors and expose 335 cycles relative humidity uncontrolled with A temperature transition of 10 °C per minutes <table><tr><td><u>Temperature °C</u></td><td><u>Duration (Min)</u></td></tr><tr><td>0± 3°C</td><td>15</td></tr><tr><td>+75± 3°C</td><td>15</td></tr></table> Allow to air dry for 24 hours prior to measurements	<u>Temperature °C</u>	<u>Duration (Min)</u>	0± 3°C	15	+75± 3°C	15	Contact Resistance: 10 mohms maximum change from initial Dielectric Withstanding voltage: No breakdown Insulation Resistance: 1000 Mohms minimum Appearance: No damage
<u>Temperature °C</u>	<u>Duration (Min)</u>								
0± 3°C	15								
+75± 3°C	15								

REVISE ON PC ONLY

3

See sheet 1

TITLE:

**1.27 mm Pitch 184 Ckts 25 Deg .
Reverse DDR Dimm**THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO
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REV.

DESCRIPTION

DOCUMENT NUMBER

PS-87639-002

FILENAME

PS-87639 (REV3

SHEET

6



PRODUCT SPECIFICATION



LANGUAGE

ENGLISH

5.3 Environmental Performance (Continue....)

Item		Test Condition	Requirement
5-3-5	Humidity (Steady State)	Mate connectors and expose to a temperature of $50 \pm 2^{\circ}\text{C}$ with a relative humidity of $80 \pm 3\%$ for 300 hours. Remove surface moisture and air dry for 24 hours prior to measurement	Contact Resistance: 10 mohms maximum change from initial Dielectric Withstanding voltage: No breakage Insulation Resistance: 1000 Mohms minimum Appearance: No damage
5-3-6	Solderability	Steam age for 1 hours. Solder time 5 ± 0.5 seconds Solder temperature : $245 \pm 5^{\circ}\text{C}$. Use non-activated flux	95% of the immersed area must show no voids or pin holes
5-3-7	Resistance to Soldering Heat	Solder time: 3 ± 5 seconds Solder temperature: $260 \pm 5^{\circ}\text{C}$ Immerse leads to a depth of 1.57mm (.062 in) from connector body	Appearance: No blistering or deformation of plastic housing
5-3-8	IR. Process	Exposure: Molex IR. profile per section 8.4	Appearance: No blistering or deformation of plastic housing

REVISE ON PC ONLY

3

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Reverse DDR Dimm**THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO
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REV.

DESCRIPTION

DOCUMENT NUMBER

PS-87639-002

FILENAME

PS-87639 (REV3

SHEET

7



PRODUCT SPECIFICATION



LANGUAGE

ENGLISH

6.0 TEST SEQUENCE

Test Description Sequence	Test Group											
	I		II		III	IV				V		
	a	b	a	b		a	b	c	d	a	b	c
Initial Contact Resistance	1	1	1	1	1							
Durability (2 mate/unmates)	2, 8	2, 10			2, 8							
(4 mate/unmates)				2								
(5 mate/unmates)												
(24 mate/unmates)			2									
Contact Resistance	3, 5, 7, 9	3, 5, 7, 9, 11	3, 5	3, 5	3, 5, 7, 9							
Thermal Age	4											
Disturbance	6	8			6							
Thermal shock		4										
Thermal cycling		6										
Mechanical Shock			4									
Vibration				4								
Steady State Humidity					4							
Temperature Rise						1						
Solderability							1					
Resistance to soldering								1				
IR. compatibility									1			
Connector mate/unmate forces (1,2,5,25 cycles)										1		
Latch Actuation Force											1	
Module Ripout Force											2	
Connector Insertion and retention to PCB												1
Contact Retention												2
Latch Overstress Force												3
Sample size per test group	5	5	5	5	5	5	5	5	5	5	5	5

Note: Disturbance consists of a 10° rotation of the module in the connector.

	REVISE ON PC ONLY		TITLE: 1.27 mm Pitch 184 Ckts 25 Deg . Reverse DDR Dimm		
	3	See sheet 1			
	REV.	DESCRIPTION	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO INC. AND MUST NOT BE USED WITHOUT WRITTEN PERMISSION		
DOCUMENT NUMBER PS-87639-002				FILENAME PS-87639 (REV3	SHEET 8
ES-40000-3996 REV. A SHEET 4 95/MAR/10 EC U5-0926 DCBRD03.LWP					

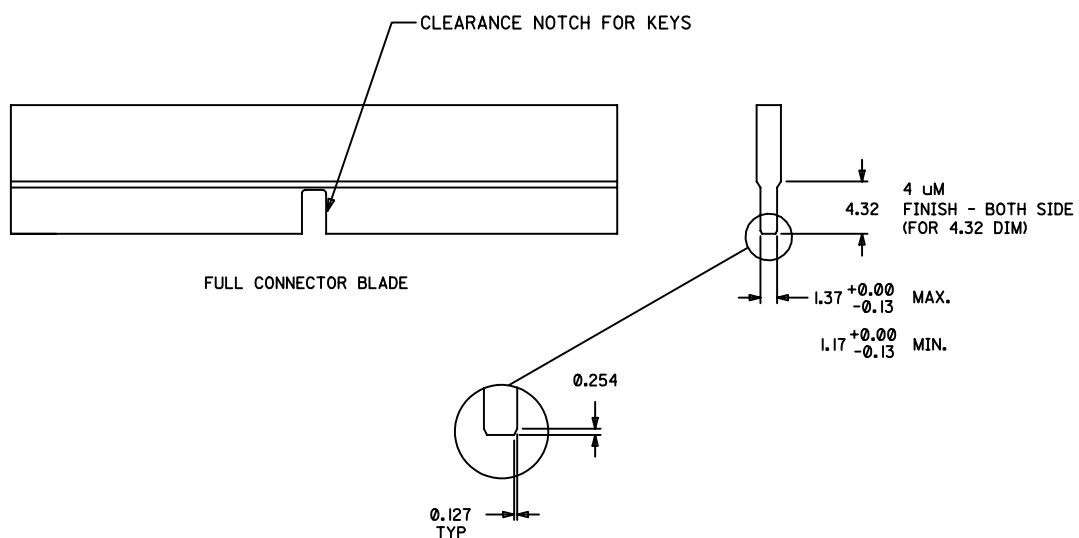


7.0 PACKAGING

Part shall be packaged to protect against damage during handling, transit and storage.

8.0 GAGES, FIXTURES AND SCHEMATICS

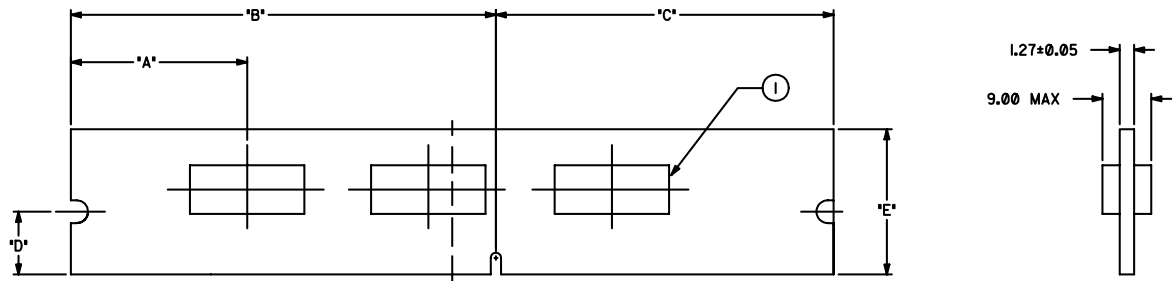
8.1 Contact Insertion and Withdrawal Blades



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	3	See sheet 1		
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DOCUMENT NUMBER PS-87639-002			FILENAME PS-87639 (REV3	SHEET 9
ES-40000-3996 REV. A SHEET 4 95/MAR/10 EC U5-0926 DCBRD03.LWP				



8.2 Shock and Vibration Test Module



Circuit Size	JEDEC Module outline	“A” mm	“B” mm	“C” mm	“D” mm	“E” mm	SOJ Weight (gm ± 10%)	
							shock test (weighted)	Vibration test (unweighted)
184	MO-206	30.8	74.295	59.055	17.8	38.1	24.76	13.77

Notes:

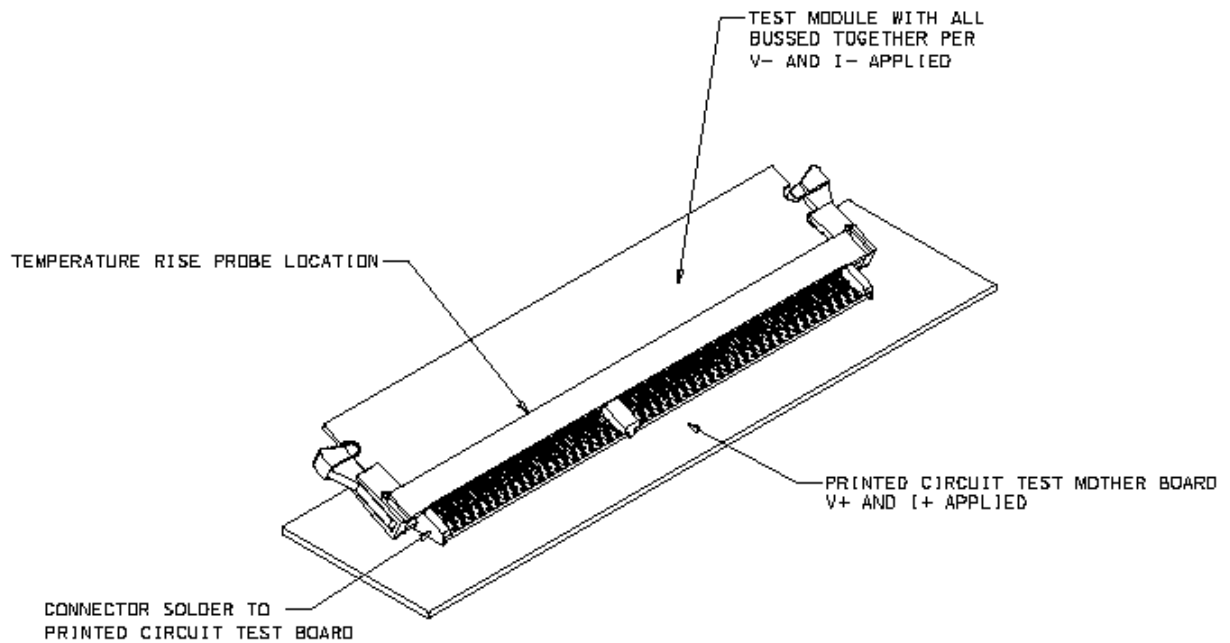
- Item 1 (weights) shall be exploited to recommended module test board. Material shall be aluminium
- Total weight of the finished test module shall be per the table

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3	See sheet 1		
REV.	DESCRIPTION		
DOCUMENT NUMBER PS-87639-002		FILENAME PS-87639 (REV3	10
ES-40000-3996 REV. A SHEET 4 95/MAR/10 EC U5-0926 DCBRD03.LWP			



8.3 Contact Resistance and Temperature Rise setup

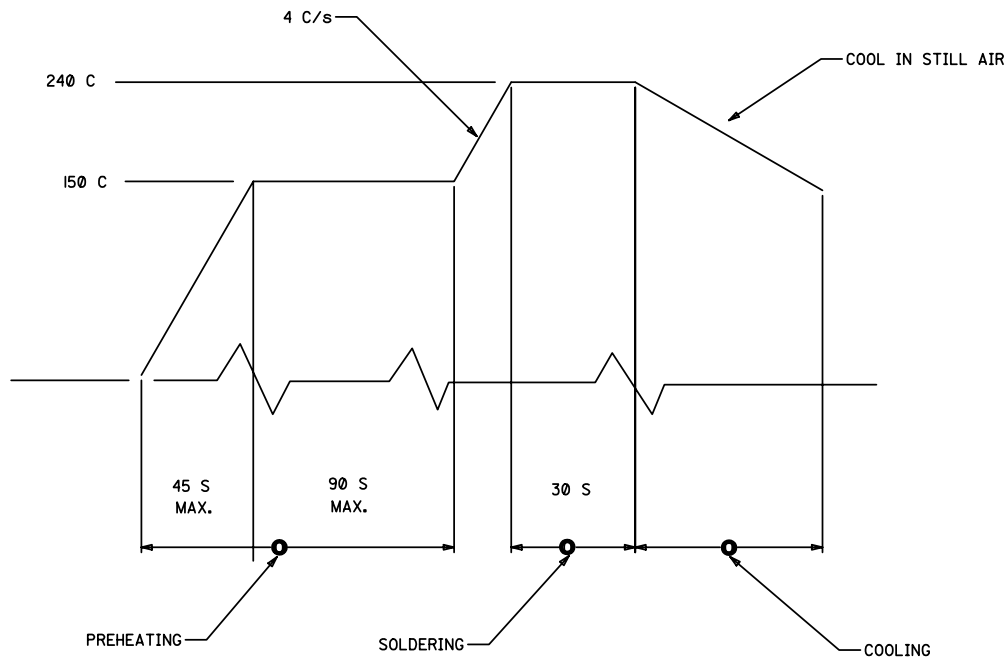
Contact Resistance test arrangement and Temp / Rise measurement location



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	3	See sheet 1		
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DOCUMENT NUMBER PS-87639-002			FILENAME PS-87639 (REV3	SHEET 11
ES-40000-3996 REV. A SHEET 4 95/MAR/10 EC U5-0926 DCBRD03.LWP				



8.4 Reflow solder profile

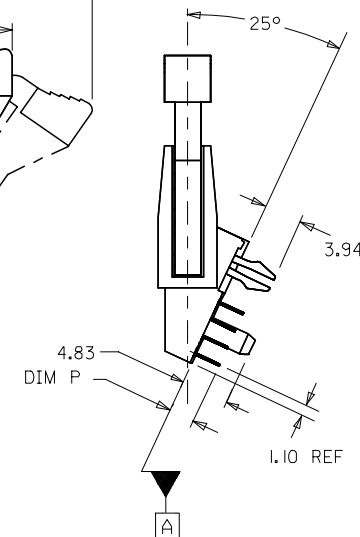
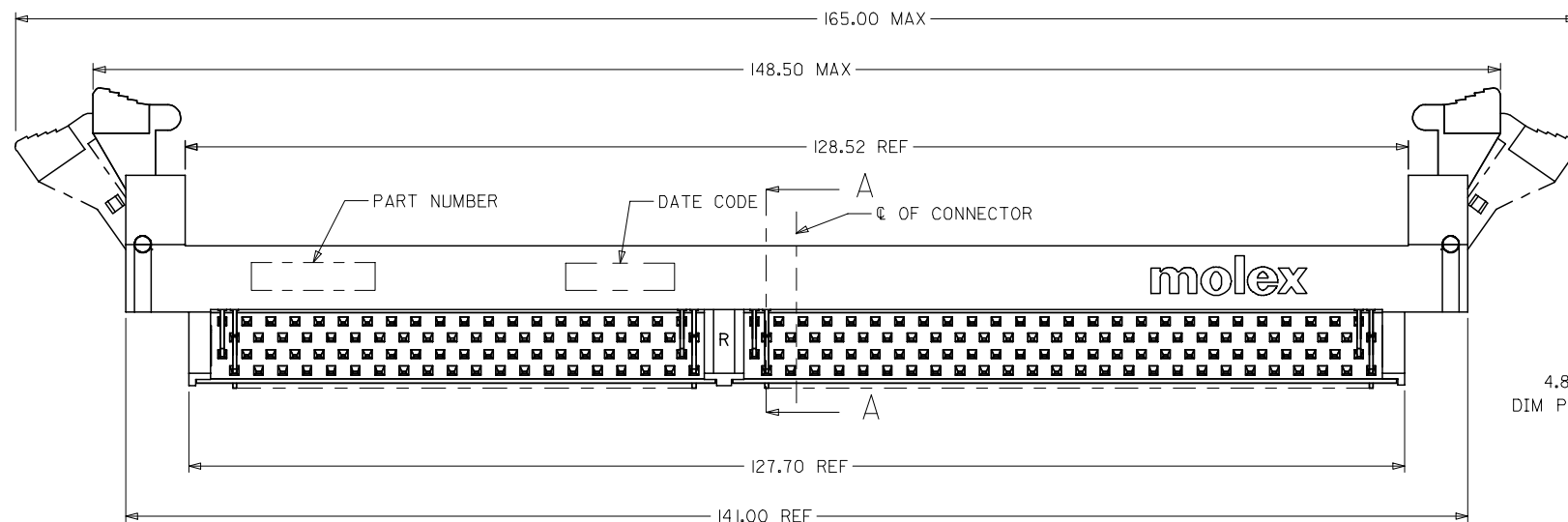
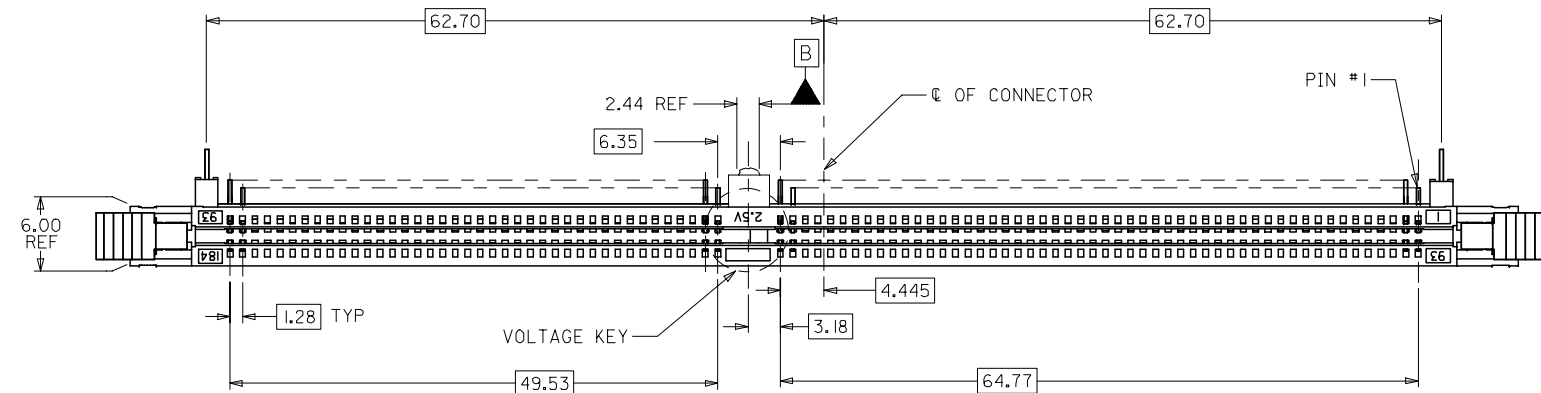


Notes

1. Reflow solder preheat at 3 °C per second change to 150 °C
2. Reflow at 240 °C using 60/40 solder for 30 seconds per figure
3. Component must withstand (2) reflow solder cycles with a cool down between

REVISE ON PC ONLY		TITLE:	
3	See sheet 1	1.27 mm Pitch 184 Ckts 25 Deg . Reverse DDR Dimm	
REV.	DESCRIPTION	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO INC. AND MUST NOT BE USED WITHOUT WRITTEN PERMISSION	
DOCUMENT NUMBER PS-87639-002		FILENAME PS-87639 (REV3	SHEET 12
ES-40000-3996 REV. A SHEET 4 95/MAR/10 EC U5-0926 DCBRD03.LWP			

10 9 8 7 6 5 4 3 2 1



NOTES:



1. MATERIALS: HOUSING - LCP, GLASS FILLED, UL 94V-0, COLOR: BLACK
LATCHES - HIGH TEMP NYLON, GLASS FILLED, UL 94V-0
TERMINAL AND FORKLICK - COPPER ALLOY
2. FINISHES: CONTACT AREA: SEE TABLE ON SHEET 5
SOLDERTAILS: 2.54um/100u" MIN. TIN
OVER 1.27um/50u" MIN NICKEL
3. PRODUCT SPECIFICATIONS: PS-87639-002 FOR
PERFORMANCE SPECIFICATIONS.
4. DATE CODE SHALL BE MARKED LEGIBLY AS SHOWN: XX XX
YEAR WEEK
5. PART NUMBER SHALL BE MARKED LEGIBLY AS SHOWN: 87639-0XXX
REFER TO TABLE

OBS TIN/LEAD P/N	2006/02/27
EC NO: S2006-0746	2006/02/28
DRWN:MLG	2006/02/28
CHKD:HO	2006/02/28
APPR:GGL	2006/02/28
REV	

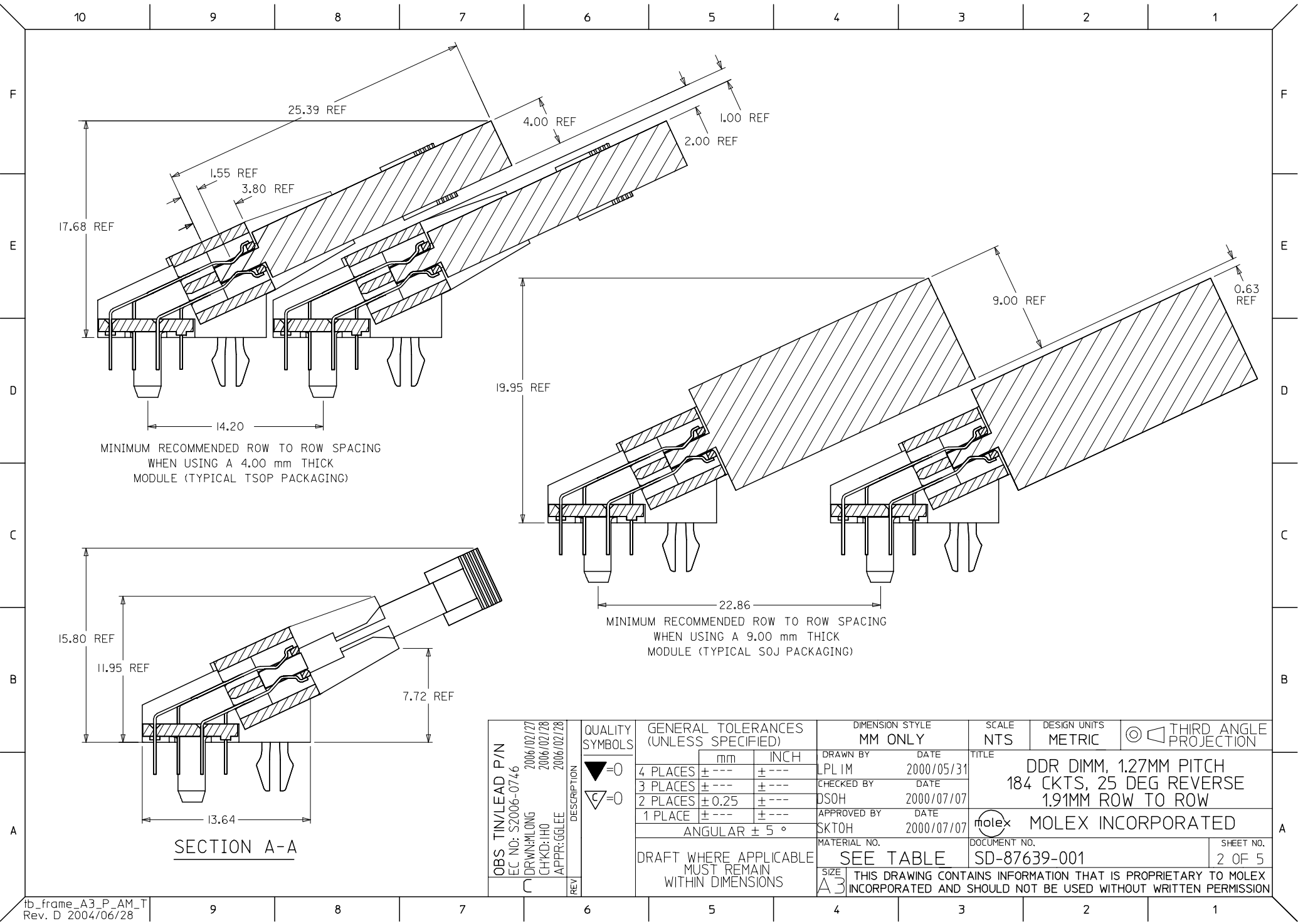
QUALITY SYMBOLS
▽=0
▽=0
DESCRIPTION
REV

GENERAL TOLERANCES (UNLESS SPECIFIED)		
	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± ---
2 PLACES	± 0.25	± ---
1 PLACE	± ---	± ---
ANGULAR ± 5 °		
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		

DIMENSION STYLE MM ONLY	
DRAWN BY	DATE
LPL IM	2000/05/31
CHECKED BY	DATE
DSOH	2000/07/07
APPROVED BY	DATE
SKTOH	2000/07/07
MATERIAL NO.	
SEE TABLE	
SIZE	
A3	

SCALE NTS	DESIGN UNITS METRIC		THIRD ANGLE PROJECTION
TITLE			
DDR DIMM, 1.27MM PITCH 184 CKTS, 25 DEG REVERSE 1.91MM ROW TO ROW			
 MOLEX INCORPORATED			
DOCUMENT NO. SD-87639-001			SHEET NO. 1 OF 5
THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION			


9 8 7 6 5 4 3 2 1



MINIMUM RECOMMENDED ROW TO ROW SPACING
WHEN USING A 4.00 mm THICK
MODULE (TYPICAL TSOP PACKAGING)

MINIMUM RECOMMENDED ROW TO ROW SPACING
WHEN USING A 9.00 mm THICK
MODULE (TYPICAL SOJ PACKAGING)

SECTION A-A

OBS TIN/LEAD P/N EC NO: S2006-0746 DRWN:MLONG CHKD:JHO APPR:GJLEE	2006/02/27 2006/02/28 2006/02/28	DESCRIPTION REV	QUALITY SYMBOLS ▽=0 ▽C=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE NTS	DESIGN UNITS METRIC	 THIRD ANGLE PROJECTION	TITLE DDR DIMM, 1.27MM PITCH 184 CKTS, 25 DEG REVERSE 1.91MM ROW TO ROW	
					mm	INCH	DRAWN BY LPL IM	DATE 2000/05/31	MOLEX MOLEX INCORPORATED			
				4 PLACES	± ---	± ---	CHECKED BY	DATE				
				3 PLACES	± ---	± ---	DSOH	2000/07/07				
				2 PLACES	± 0.25	± ---	APPROVED BY	DATE	DOCUMENT NO. SD-87639-001			
				1 PLACE	± ---	± ---	SKTOH	2000/07/07				SHEET NO. 2 OF 5
				ANGULAR ± 5 °								
				DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		MATERIAL NO. SEE TABLE						
						SIZE A3		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION				

	10	9	8	7	6	5	4	3	2	1									
F					MATERIAL NO.	VOLTAGE KEY	TAIL LENGTH P±0.25	RECOMMENDED PCB THICKNESS	FINISHES: CONTACT AREA		F								
					87639-1001	RIGHT (2.5V)	2.79	1.57	SELECTIVE GOLD 0.38uM/15u" MIN. GOLD OVER 1.27uM/50u" MIN. NICKEL										
					87639-1010		3.18												
					87639-1011		3.56												
					87639-1100		2.79												
					87639-1110		3.18												
E											E								
D											D								
C											C								
B											B								
A					OBS TIN/LEAD P/N EC NO: S2006-0746 2006/02/27 DRWN:MLONG CHKD:IHO 2006/02/28 APPR:GGLEE 2006/02/28	QUALITY SYMBOLS <div>▽=0</div> <div>▽C=0</div>	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE NTS	DESIGN UNITS METRIC	<div>THIRD ANGLE PROJECTION</div>	A					
									DRAWN BY DATE LPLIM 2000/05/31		TITLE DDR DIMM, 1.27MM PITCH 184 CKTS, 25 DEG REVERSE 1.91MM ROW TO ROW								
							4 PLACES ± --- ± ---		CHECKED BY DATE DSOH 2000/07/07		MOLEX INCORPORATED								
							3 PLACES ± --- ± ---		APPROVED BY DATE SKTOH 2000/07/07										
							2 PLACES ± 0.25 ± ---		MATERIAL NO.		DOCUMENT NO.	SHEET NO.							
							1 PLACE ± --- ± ---		SEE TABLE		SD-87639-001	5 OF 5							
							ANGULAR ± 5 °		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION										
							DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS												
							SIZE A3												
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