

### **Vertical Mini DIMM Connector**

#### 1.0 SCOPE

This Product Specification covers the performance requirements of the 0.60 mm centerline edge card socket for board to board interconnect of 1.00 mm thick memory modules.

## 2.0 PRODUCT DESCRIPTION

#### 2.1 PRODUCT NAME AND SERIES NUMBER (S)

<u>Part Number</u> <u>Product Descriptions</u>

87782-2001/2002/2003/2201/2202 244/200 Ckt Vertical Mini DIMM Socket (Tin Version)

### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate Sales Drawings for information on dimensions, materials, plating and markings, recommended module outlines and footprint Specifications.

#### 2.3 CONNECTOR SIZE

Refer to the appropriate sales drawing for dimensional information and detail.

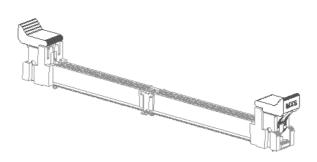
#### 2.4 PCB / MODULE DIMENSIONS

Refer to the appropriate sales drawing for PCB / module hole layout and dimensional Information. The connector accommodates a  $1.00 \pm 0.10$ mm thick PC module.

#### 2.5 SAFETY AGENCY APPROVALS

UL File : E29179

CSA File : 1699020 (LR19980)



B1	ECR/ECI EC No: DATE:	\$2008-0204 2007/09/12	VERTICAL	VERTICAL MINI DIMM CONNECTOR 200/244 CKT, 0.60MM PITCH					
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#### 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

The following documents are part of this specification between the requirements of this specified herewith. In the event of conflict between the requirements of this specification and the product drawings, the product drawings shall take precedence. In the event of conflict between the requirements of this specification and reference documents, this specification shall take precedence.

### 4.0 RATINGS

#### 4.1 VOLTAGE

30 VRMS at 60 Hz

#### **4.2 CURRENT**

1.0 Amps at 30°C Temperature Rise

### 4.3 TEMPERATURE

Operating Temperature: -55°C to +85°C Non Operating Temperature: -55°C to +85°C

#### 5.0 PERFORMANCE

#### **5.1 ELECTRICAL REQUIREMENTS**

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT		
5.1.1	Contact Resistance (Low Level)	Mate connectors: apply a maximum voltage of 20mV and a current of 100mA Mated per EIA-364-23	30 m $\Omega$ maximum (initial) 10 m $\Omega$ maximum change from initial		
5.1.2	Temperature Rise at rated current	Temperature of mated connector at rated current for 96 hours (6 consecutive ckts link in series.)	1.0 Amps per contact at a maximum of 30°C temperature rise		
5.1.3	Insulation Resistance	Unmated per EIA-364-21	1000 Mega Ω minimum		
5.1.4	Dielectric Withstanding Voltage	Unmated, 500VAC per EIA-364-20	No breakdown or flashover		
5.1.5	Time Domain Impedance	Risetime = 300pS (10% $\sim$ 90%) S:G ratio = 2:1 Source impedance = $50\Omega$ Load impedance = $50\Omega$ Single-Ended Configuration Test Procedure per EIA-364-108	50Ω +/- 10%		
5.1.6	Time Domain Multiline Crosstalk	Risetime = 300pS (10% ~ 90%) S:G ratio = 2:1 7nearest adjacent driven signal, 1 victim signal	6% max (NEXT & FEXT)		
ION:	ECR/ECN INFORMATION		SHEET N		
_	FC No. <b>\$2008-020</b> 4	VERTICAL MINI DIMM COI	NNECTOR		

**REVISI** EC No: S2008-0204 **B**1 200/244 CKT, 0.60MM PITCH 2 of 6 2007/09/12 DATE: **DOCUMENT NUMBER:** CREATED / REVISED BY: CHECKED BY: APPROVED BY: PS-87782-027 ATSEE 2007/09/12 **SKANG 2007/09/20** MLONG 2007/09/20



## **5.2 MECHANICAL REQUIREMENTS**

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.2.1	Vibration	Amplitude: 1.52mm peak to peak Sweep: 10-55-10 Hz in one min. Duration: 2 hrs each on XYZ axis Module weight: 15g for 244Ckt and 13g for 200Ckt. EIA 364-28	No change in LLCR greater than $10m\Omega$ from initial. Discontinuity: No greater than 1.0 micro sec.
5.2.2	Shock (Mechanical)	Mated, 30G, 11ms duration, half-sine waveform, 3 shocks in each perpendicular axis (18 total)  Module weight – 15g for 244Ckt and 13g for 200Ckt.	No change in LLCR greater than $10m\Omega$ from initial. Discontinuity: No greater than 1.0 micro sec.
5.2.3	Durability	Mate and unmated 25 times at a maximum rate of 10 cycles per minute. Reseating to be done for 3 cycles.	No change in LLCR greater than 10 m $\Omega$ from initial.
5.2.4	Module Insertion Force (w/ Latches)	Mate connector with PCB module per EIA364-13	Total insertion force not to exceed: 195.0 N (43.73lbs) for 200 ckt 238.0 N (53.37lbs) for 244 ckt
5.2.5	Module Rip Out Force	Apply a pulling force on module card at a rate of 25±6 mm/min (1±¼ in/min) with recommended test module as per 2.4 inserted into connector with latches closed.	35.0 N (7.85lb) min. with no damage
5.2.6	Latch Actuation Force	Apply an actuation force on each latch at a rate of $25 \pm 6$ mm/ min $(1 \pm \frac{1}{4}$ in/min) with recommended test module as per 2.4inserted into connector.	35N (7.85lb) max. per latch.
5.2.7	Latch Overstress Force	Apply a force on each latch in the fully open position at a rate of 25 ± 6 mm / min (1 ± ¼ in/min) and hold for 10 seconds	35 N (7.85lb) min with no damage.
5.2.8	Terminal Retention Force	Axial pull out force on the terminal in the housing at a rate of 25 $\pm$ 6mm (1 $\pm$ $\frac{1}{4}$ inch) per minute.	3N minimum

B1	ECR/ECN INFORMATION: EC No: \$2008-0204  DATE: 2007/09/12	VERTICAL 200/24	3 of 6		
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY: APPROVED BY		
PS	S-87782-027	ATSEE 2007/09/12	SKANG 2007/09/20	MLONG	2007/09/20



## **5.3 ENVIRONMENTAL REQUIREMENTS**

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.3.1	Shock (Thermal)	Mate connectors; expose to 5 cycles of:         Temperature °C       Duration (Minutes)         -55 +0/-3       30         +25 +10/-5       5 MAXIMUM         +85 +3/-0       30         +25 +10/-5       5 MAXIMUM         EIA-364-32-Test condition I	No change in LLCR greater than 10 m $\Omega$ from initial.
5.3.2	Thermal Aging	Mated, +105±2°C for 500 hours per EIA 364 – 17. Preconditioning to be done at 105°C for 72 hrs	No change in LLCR greater than 10 m $\Omega$ from initial.
5.3.3	Cyclic Temperature & Humidity	Mated connectors exposed for 10 days at 25°C to 65°C at 90-98% RH, per EIA 364-31 Method 3.	No change in LLCR greater than 10 m $\Omega$ from initial.
5.3.4	Solderability	Solder time: 5±0.5 seconds. Solder temperature: 245±5°C Subject to steam aging for 8 hours ± 5 mins. (For Tin-Lead Version) Solder time: 5±0.5 seconds. Solder temperature: 260±5°C Subject to steam aging for 8 hours ± 5 mins. (For Tin Version)	95% solder coverage minimum.
5.3.5	Porosity	EIA 364, TP-53 Nitric Acid Test, 10 contacts per contact type selected at random	Max. number of pores : 30uin-1 pore per 10 contacts
5.3.6	Solvent Resistance	MIL – STD- 202F Method 215J	No damage or degradation of any marking.
5.3.7	Reflow Process Withstand	Unmated, exposed to reflow profile as defined in Section 8.1.	No damage or blistering.

B1	ECR/ECN INFORMATION: EC No: \$2008-0204  DATE: 2007/09/12	VERTICAL 200/24	<u>SHEET No.</u> <b>4</b> of <b>6</b>		
DOCUMENT NUMBER:		CREATED / REVISED BY:	CHECKED BY:	APPRO	OVED BY:
PS	S-87782-027	ATSEE 2007/09/12	SKANG 2007/09/20	MLONG	2007/09/20



## **6.0 TEST SEQUENCE**

Test Description						Test	Group		1							
Sequence	1	2	3	4	5	6	7	8	9	10	11	12				
Contact Resistance	1 9 3 5 7	1 3 5	1 4 6 8													
Temperature Rise											1					
Insulation Resistance				1 5												
Dielectric Withstand Voltage				2												
Vibration	6															
Mechanical Shock	8															
Durability (5X) pre-cond.	2															
Durability (25X)			2													
Module Insertion Force					1											
Module Ripout Force					2											
Latch Actuation Force												1				
Latch Overstress Force												2				
Thermal Shock			3	3												
Thermal Aging 105°C – 500hrs		2														
Cyclic Temp & Humidity			5	4												
Plating thickness						1										
Solderability								1								
Porosity									1							
Solvent Resistance							1									
Terminal Retention Force										1 3						
Resistance to Soldering Heat										2						
Temp life (pre-conditioning) 105°C – 72hrs	4															
Reseating (3X)		4	7													
Sample Size per Test Group	5	5	5	5	5	5	5	5	5	5	5	5				

## 7.0 PACKAGING

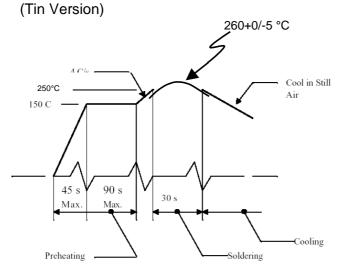
Parts shall be packed in trays and protected against damage during handling, transportation and storage.

REVISION:	ECR/ECN	N INFORMATION:	<del></del>			SHEET No.
B1	EC No:	S2008-0204	VERTICAL	F -4 6		
ВΙ	DATE:	2007/09/12	200/24	<b>5</b> of <b>6</b>		
DOCUMENT NUMBER:			CREATED / REVISED BY:	CHECKED BY:	APPR	OVED BY:
PS-87782-027			ATSEE 2007/09/12	SKANG 2007/09/20	MLONG	2007/09/20



### 8.0 OTHER INFORMATIONS

8.1 Reflow Profile.



### Notes:

- 1. Reflow solder Preheat at 3°C/s to 150°C.
- 2. Reflow at 250°C for 30s per figure.
- 3. Peak to be at 260 +0/-5°C
- 4. Component must withstand (2) reflow solder cycles with a cool down between.

REVISION:         ECR/ECN INFORMATION:           EC No:         \$2008-0204           DATE:         2007/09/12	TITLE: VERTICAL 200/24	SHEET No.  6 of 6		
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPRO	OVED BY:
PS-87782-027	ATSEE 2007/09/12	SKANG 2007/09/20	MLONG	2007/09/20