

Cypress Semiconductor Package Qualification Report

**QTP# 072203 VERSION 1.1
December 2007**

**38LCC Package
(6.2 x 18.5 mm)
MMT-Thailand (X)**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

| QUAL REPORT | DESCRIPTION OF QUALIFICATION PURPOSE | DATE COMP. |
|--------------------|--|-------------------|
| 072203 | Qualify Millenium Microtech (MMT) in Thailand for 38 Leadless Chip Carrier Package (6.2 x 18.5 mm) as a new assembly site for Image Sensor using S9AV2CPB1A device (with pre-glued glass lid) | Oct 07 |

| MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION | |
|---|--------------------------------|
| Package Designation: | QB38 |
| Package Outline, Type, or Name: | 38 Leadless Chip Carrier (LCC) |
| Lid Seal Method: | NCO (pre-glued) |
| Glass Lid Material: | D263 B-stage sealant NCO150SB |
| Substrate material: | IRK38F0-7313B-NB |
| Substrate Supplier: | NGK |
| Die Separation Method: | Saw |
| Die Attach Supplier: | Ablebond |
| Die Attach Material: | 84-3 |
| Bond Diagram Designation | 001-15928 |
| Wire Bond Method: | Thermosonic |
| Wire Material/Size: | Au/0.8mil |
| Assembly Process Flow: | 49-15999/49-15999M |
| Name/Location of Assembly (prime) facility: | MMT-Thailand (X) |

| ELECTRICAL TEST / FINISH DESCRIPTION | |
|---|-------|
| Test Location: | MMT-X |

Note: Please contact a Cypress Representative for other packages availability.

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT

| Stress/Test | Test Condition (Temp/Bias) | Result P/F |
|--------------------------|---------------------------------------|-----------------------|
| Ball Shear | Cypress Spec. 12-00292 | P |
| Bond Pull | Cypress Spec. 12-00292 | P |
| Die Shear | Cypress Spec. 12-00292 | P |
| External Visual | Cypress Spec. 12-00292/12-00103 | P |
| Lead Integrity | Cypress Spec. 25-00004 | P |
| High Temperature Storage | 150°C, no bias | P |
| Mechanical Shock | JESD22-B104-C | P |
| Vibration | JESD22-B103-B | P |
| Physical Dimension | Cypress Spec. 25-00031 | P |
| Solderability | Cypress Spec. 25-00018 | P |
| Temperature Cycle | JEDEC22, Condition G, -40°C to 125°C | P |
| Temperature Humidity | Unbiased 85C/85%RH | P |

Reliability Test Data

QTP #: 072203

| <i>Device</i> | <i>Fab Lot#</i> | <i>Assy Lot #</i> | <i>Assy Loc</i> | <i>Duration</i> | <i>Samp</i> | <i>Rej</i> | <i>Failure Mechanism</i> |
|--|-----------------|-------------------|-----------------|-----------------|-------------|------------|--------------------------|
| STRESS: BALL SHEAR | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | COMP | 15 | 0 | |
| STRESS: BOND PULL | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | COMP | 15 | 0 | |
| STRESS: DIE SHEAR | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | COMP | 15 | 0 | |
| STRESS: EXTERNAL VISUAL | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | COMP | 54 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731892 | MMT-X | COMP | 128 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731898 | MMT-X | COMP | 54 | 0 | |
| STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | 1000 | 10 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731898 | MMT-X | 1000 | 22 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | E76ABK1.1 | MMT-X | 1000 | 22 | 0 | |
| STRESS: LEAD INTEGRITY | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | COMP | 5 | 0 | |
| STRESS: MECHANICAL SHOCK | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | COMP | 14 | 0 | |
| STRESS: VIBRATION | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | COMP | 14 | 0 | |
| STRESS: PHYSICAL DIMENSION | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | COMP | 25 | 0 | |
| STRESS: TC CONDITION G, -40C TO 125C | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | 1000 | 10 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731892 | MMT-X | 1000 | 25 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731898 | MMT-X | 1000 | 24 | 0 | |
| STRESS: SOLDERABILITY | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | COMP | 1 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731892 | MMT-X | COMP | 1 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731898 | MMT-X | COMP | 1 | 0 | |

Reliability Test Data

QTP #: 072203

| <i>Device</i> | <i>Fab Lot#</i> | <i>Assy Lot #</i> | <i>Assy Loc</i> | <i>Duration</i> | <i>Samp</i> | <i>Rej</i> | <i>Failure Mechanism</i> |
|---|-----------------|-------------------|-----------------|-----------------|-------------|------------|--------------------------|
| STRESS: TEMPERATURE HUMIDITY, unbiased 85C/85%RH | | | | | | | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731890 | MMT-X | 1000 | 9 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731892 | MMT-X | 1000 | 19 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | 610731898 | MMT-X | 1000 | 24 | 0 | |
| S9AV2CPBA (S9AV2CP1A) | 8642005 | E76ABK1.1 | MMT-X | 1000 | 4 | 0 | |