

IEC/PAS 62168

Edition 1.0
2000-08

Symbol and labels for moisture-sensitive devices

PUBLICLY AVAILABLE SPECIFICATION



INTERNATIONAL
ELECTROTECHNICAL
COMMISSION



Reference number
IEC/PAS 62168

EIA/JEDEC ENGINEERING PUBLICATION

Symbol and Labels for Moisture- Sensitive Devices

JEP113-B
(Revision of JEP113-A)

MAY 1999

ELECTRONIC INDUSTRIES ALLIANCE
JEDEC Solid State Technology Association



INTERNATIONAL ELECTROTECHNICAL COMMISSION

SYMBOL AND LABELS FOR MOISTURE-SENSITIVE DEVICES

FOREWORD

A PAS is a technical specification not fulfilling the requirements for a standard, but made available to the public and established in an organization operating under given procedures.

IEC-PAS 62168 was submitted by JEDEC and has been processed by IEC technical committee 47: Semiconductor devices.

The text of this PAS is based on the following document:

This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document:

Draft PAS	Report on voting
47/1468/PAS	47/1501/RVD

Following publication of this PAS, the technical committee or subcommittee concerned will investigate the possibility of transforming the PAS into an International Standard.

An IEC-PAS licence of copyright and assignment of copyright has been signed by the IEC and JEDEC and is recorded at the Central Office.

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this PAS may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.



SYMBOL AND LABELS FOR MOISTURE-SENSITIVE DEVICES

(From JEDEC Board Ballot JCB-98-132, formulated under the cognizance of the JC-14.1 Subcommittee on Reliability Test Methods for Packaged Devices.)

1 Introduction

Certain plastic surface-mount components are subject to permanent damage due to moisture-induced failures encountered during high-temperature surface-mount processing unless appropriate precautions are observed.

2 Purpose

The purpose of this publication is to provide a distinctive symbol and labels to be used to identify those devices that require special packing and handling precautions.

3 Reference documents

J-STD-020 Moisture/Reflow Sensitivity Classification for Non-Hermetic Solid State Surface Mount Devices

J-STD-033 Standard for Handling And Shipping Of Moisture/Reflow Sensitive Surface Mount Devices

4 Symbol and labels

4.1 Moisture-sensitive symbol

This symbol (see Figure 1) indicates that devices are moisture sensitive to a level from 2 to 6 and it appears on all moisture sensitive caution labels (see Figure 4).



Figure 1 — Moisture-sensitive symbol

4 Symbol and labels (cont'd)

4.2 Moisture-Sensitive Identification (MSID) label

This label should be on the lowest level shipping container to indicate that moisture-sensitive devices are in the container. This label is recommended to be a minimum of 3/4 inch (19 millimeters) in diameter. See Figure 2.



Figure 2 — MSID Label

4.3 Moisture-sensitive caution labels

4.3.1 Level 1

This label is required only if the classification temperature is 235 °C and shall be placed on the lowest level shipping container to identify the devices as "NOT MOISTURE SENSITIVE". See Figure 3.

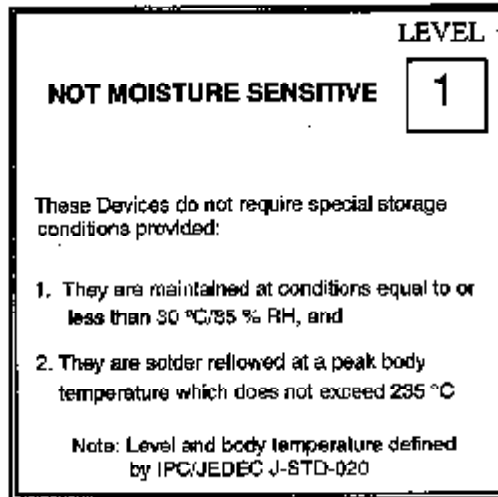


Figure 3 — Information label for level 1

4 Symbols and Labels (cont'd)

4.3.2 Levels 2-5a

The moisture-sensitive caution label shall be used for levels 2, 2a, 3, 4, 5, and 5a as defined by J-STD-020. See Figure 4. This label is required on the moisture barrier bag and will provide the following information:

- (a) Moisture classification level.
- (b) The calculated shelf life in the sealed bag
- (c) The peak package body temperature (Top surface) used for device classification as defined by J-STD-020.
- (d) The floor life of the device at 30 °C/60%RH as defined by J-STD-020.
- (e) The bag seal date utilizing "MMDDYY", "YYWW" or equivalent format.

An acceptable alternative will be to provide the above information on the adjacent bar code label.

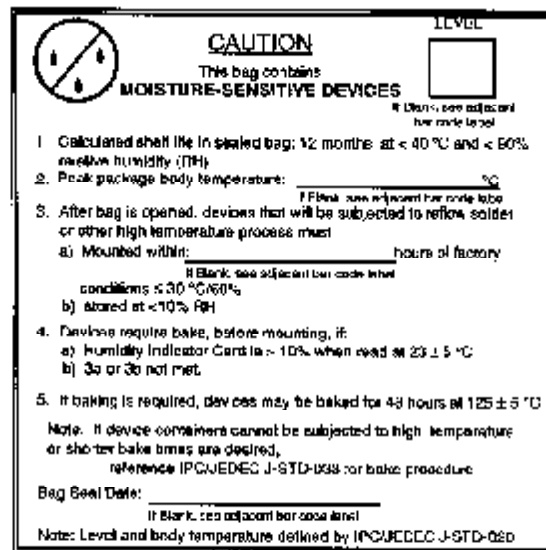


Figure 4 — Moisture-sensitive caution label for levels 2-5a

4 Symbols and Labels (cont'd)

4.3.3 Level 6

Level 6 devices must be identified as "EXTREMELY MOISTURE SENSITIVE". See Figure 5. This label is required on the moisture barrier bag and/or the lowest level shipping container. The label must specify the peak package body temperature at which the device was classified. If the required information is not provided on the caution label then it must be on the adjacent bar code label.

Level 6, as defined by J-STD-020, does not require that devices be shipped in a moisture-barrier bag with desiccant, etc. (dry-pack), since these devices require baking by the end user before use. However, moisture-barrier bags have become a "symbol" for moisture-sensitive devices and therefore are recommended to be used with level 6 device shipments. It is also recommended that these bags be sealed even though desiccant and humidity indicator cards (HIC) may not be inside the bags.

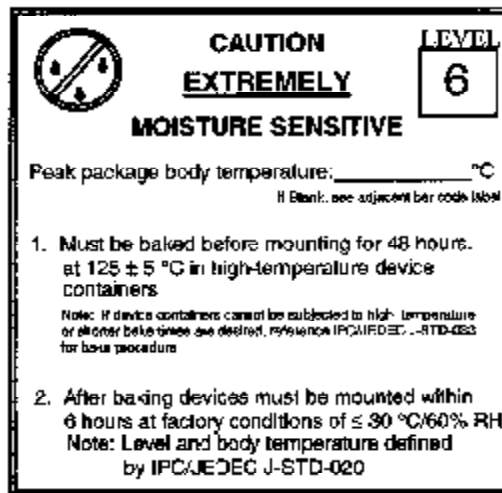


Figure 5 — Moisture-sensitive caution label for level 6

4.3.4 Label size

Labels are recommended to be a minimum of 3 inches (76.2 millimeters) by 3 inches (76.2 millimeters) square.

4.3.5 Label colors

The ID and caution labels shall be contrasting colors. These labels shall be legible to normal vision at a distance of three feet. Monochromatic reproduction in any color that contrasts with the background may be used. Where the choice of color is arbitrary, it is suggested that:

- 1) The ID label background be blue (Pantone #297C) with a black symbol and letters.
- 2) The caution label background be white with a blue (Process blue) symbol and letters.

Wherever possible the color red should be avoided as red suggests a personal hazard.

CODE PRIX **C**

For price, see current catalogue

ISBN 2-8318-5272-2



9 782831 852720

ICS 31.080.01

Typeset and printed by the IEC Central Office
GENEVA, SWITZERLAND