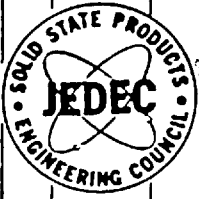


MAY 1982



JEDEC STANDARD No. 23

TEST METHODS AND CHARACTER DESIGNATIONS

FOR

LIQUID CRYSTAL DEVICES

JEDEC
Solid State Products Engineering Council

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JEDEC
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Formulated by
JEDEC JC-23.1 Committee on Liquid Crystal Devices

May, 1982

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TEST METHODS AND CHARACTER DESIGNATIONS
FOR
LIQUID CRYSTAL DEVICES

F O R E W O R D

The material contained in this JEDEC Standard was developed by members of the JEDEC JC-23.1 Committee on Liquid Crystal Devices. It is intended to be applicable to both manufacturers and users of Liquid Crystal Devices.

1.0 PURPOSE and SCOPE

1.1 PURPOSE

The purpose of this document is to specify a collection of procedures for testing and character designation of Liquid Crystal Devices which compass the following areas:

- A. Reliability and Stress Testing
- B. Electro-Optical Testing
- C. Segment and Character Designations
 - 1. Alpha-Numeric Characters
 - 2. Total Display Designations
 - 3. Dot-Matrix Displays

These procedures are intended for use by manufacturers and users to promote standardization of the above areas throughout the Liquid Crystal Device Industry.

1.2 SCOPE

This document was developed primarily by members of the commercial Liquid Crystal Display industry and in some cases primarily for small surface area or "Watch" displays. However, it has been the intent of the committee to make the procedures proscribed herein usable to as much of the Liquid Crystal device industry as possible and therefore, unless otherwise specified, the procedures contained in this publication should be used as the basis for testing and designation of all Liquid Crystal Devices.

2.0 SUPPORTING DOCUMENTS

The following documents may be useful to the reader and will support and expand upon the information contained within this publication.

JEDEC Standard 77

SECTION 3.0

RELIABILITY

AND

STRESS TESTS

TEST METHOD 3.1

HIGH TEMPERATURE and HIGH HUMIDITY STORAGE TEST for LIQUID CRYSTAL DEVICES

High Temperature and High Humidity Storage (non-operating):

50°C $\pm$ 2°C at 85 $\pm$ 5% relative humidity for 200 hours for all devices including polarizers if they are part of the device.

- A. Nematic to isotropic temperature to be reported as initial and final value.
- B. Total display current to be reported as initial and final value.
- C. Detectable visible (cosmetic) changes to be reported when examined with the unaided eye at 30 cm with 1000 Lux illumination under both operating and non-operating conditions.
- D. Threshold voltage to be reported as initial and final value.

NOTE: Within the test chamber, the devices shall not be subjected to high air turbulence, but only to minimal air circulation necessary to maintain homogeneous and constant temperature and humidity.