

# **JEDEC STANDARD**

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## **Vibration, Variable Frequency**

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### **JESD22-B103B.01**

(Minor revision to JESD22-B103-B, June 2002, Reaffirmed September 2010)

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**JEDEC SOLID STATE TECHNOLOGY ASSOCIATION**



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## VIBRATION, VARIABLE FREQUENCY

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### Foreword

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The variable frequency vibration test is performed to determine the effect of vibration, within a specified frequency range, on the internal structural elements.



## VIBRATION, VARIABLE FREQUENCY

(From JEDEC Board Ballot, JCB-02-32, and JCB-16-33, formulated under the cognizance of the JC-14.1 Subcommittee on Reliability Test Methods for Packaged Devices.)

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### 1 Scope

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This method is intended to evaluate component(s) for use in electrical equipment. It is intended to determine the ability of the component(s) to withstand moderate to severe vibration as a result of motion produced by transportation or field operation. Vibration of this type may disturb operating characteristics, particularly if the repetitive stress causes fatigue. This is a destructive test intended for component qualification. It is normally applicable to cavity-type packages.

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### 2 Apparatus

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Apparatus for this test shall include equipment capable of providing the required variable frequency vibration at the specified levels and the necessary optical and electrical equipment for post-test measurements.

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### 3 Terms and definitions

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#### 3.1 RMS acceleration

The root mean square average of the acceleration interval of the dynamic motion.

#### 3.2 Peak acceleration

The maximum of the acceleration interval of the dynamic motion.

#### 3.3 Logarithmic sweep

Continuously varying the frequency in a manner such that within any portion of the frequency range, a fixed number of decades is traversed in a fixed length of time.

#### 3.4 Octave

A measurement of the spacing of frequency characterized by a doubling of frequency. The number of octaves,  $N$ , between two frequencies,  $f_1 < f_2$ , is given by  $N = (\log f_2 / f_1) / \log 2$ .

#### 3.5 Decade

A measurement of the spacing of frequency characterized by a tenfold increase of frequency. The number of decades,  $D$ , between two frequencies,  $f_1 < f_2$ , is given by  $D = (\log f_2 / f_1) / \log 10$ .