

# FINAL VERSION

# VERSION FINALE

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**Semiconductor devices –  
Part 16-3: Microwave integrated circuits – Frequency converters**

**Dispositifs à semiconducteurs –  
Partie 16-3: Circuits intégrés hyperfréquences – Convertisseurs de fréquence**



## CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Abbreviated terms .....	8
5 Essential ratings and characteristics.....	8
5.1 General.....	8
5.2 Application description .....	9
5.3 Specification of the function .....	10
5.4 Limiting values (absolute maximum rating system) .....	12
5.5 Operating conditions (within the specified operating temperature range) .....	14
5.6 Electrical characteristics.....	14
5.7 Mechanical and environmental ratings, characteristics and data.....	15
5.8 Additional information.....	15
6 Measuring methods .....	16
6.1 General.....	16
6.2 Conversion gain ( $G_C$ ).....	17
6.3 Conversion gain flatness ( $\Delta G_C$ ) .....	19
6.4 LO/IF isolation ( $P_{LO} / P_{LO(IF)}$ ).....	21
6.5 LO/RF isolation ( $P_{LO} / P_{LO(RF)}$ ).....	22
6.6 RF/IF, IF/RF isolation .....	24
6.7 Image rejection ( $P_O / P_{O(im)}$ ).....	28
6.8 Sideband suppression ( $P_O / P_{O(U)}$ ).....	29
6.9 Output power ( $P_O$ ) .....	31
6.10 Output power at 1-dB conversion compression ( $P_{O(1dB)}$ ).....	32
6.11 Noise figure ( $F$ ) .....	33
6.12 Intermodulation distortion ( $P_n/P_1$ ).....	35
6.13 Output power at the intercept point (for intermodulation products) ( $P_n(IP)$ ) .....	38
6.14 LO port return loss ( $L_{ret(LO)}$ ).....	39
6.15 RF port return loss ( $L_{ret(RF)}$ ).....	40
6.16 IF port return loss ( $L_{ret(IF)}$ ).....	42
Bibliography.....	44
Figure 1 – Electrical terminal symbols.....	11
Figure 2 – Circuit diagram for the measurement of conversion gain .....	17
Figure 3 – Circuit diagram for the measurement of the LO/IF isolation .....	21
Figure 4 – Circuit diagram for the measurement of the LO/RF isolation.....	23
Figure 5 – Circuit diagram for the measurement of the RF/IF isolation for type A .....	24
Figure 6 – Circuit diagram for the measurement of the IF/RF isolation for type B .....	26
Figure 7 – Circuit diagram for measurement of noise figure .....	33
Figure 8 – Circuit for the measurement of intermodulation distortion .....	36
Figure 9 – Circuit for the measurement of the LO port return loss .....	39
Figure 10 – Circuit for the measurement of the RF/IF port return loss .....	41

Table 1 – Function of terminals ..... 10  
Table 2 – Electrical limiting values ..... 13  
Table 3 – Electrical characteristics ..... 15

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## SEMICONDUCTOR DEVICES –

**Part 16-3: Microwave integrated circuits –  
Frequency converters**

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## SEMICONDUCTOR DEVICES –

### Part 16-3: Microwave integrated circuits – Frequency converters

#### 1 Scope

This part of IEC 60747 provides new measuring methods, terminology and letter symbols, as well as essential ratings and characteristics for integrated circuit microwave frequency converters.

#### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-702, *International Electrotechnical Vocabulary – Chapter 702: Oscillations, signals and related devices* (available at < <http://www.electropedia.org/>>)

IEC 60617, *Graphical symbols for diagrams* (available at < <http://std.iec.ch/iec60617> >)

IEC 60747-1:2006, *Semiconductor devices – Part 1: General*  
IEC 60747-1:2006/AMD 1:2010

IEC 60748-2:1997, *Semiconductor devices – Integrated circuits – Part 2: Digital integrated circuits*

IEC 60748-3, *Semiconductor devices – Integrated circuits – Part 3: Analogue integrated circuits*

IEC 60748-4, *Semiconductor devices – Integrated circuits – Part 4: Interface integrated circuits*

IEC 61340-5-1:2007, *Electrostatics – Part 5-1: Protection of electronic devices from electrostatic phenomena – General requirements*

IEC/TR 61340-5-2:2007, *Electrostatics – Part 5-2: Protection of electronic devices from electrostatic phenomena – User guide*

#### 3 Terms and definitions

For the purpose of this part of IEC 60747, the following terms and definitions apply:

##### 3.1

##### **conversion gain, $G_c$**

ratio of the desired converted output power to the input power

NOTE Usually, the conversion gain is expressed in decibels.

##### 3.2

##### **conversion gain flatness, $\Delta G_c$**

difference between the maximum and the minimum conversion gain for a specified input power in a specified frequency range