

SURFACE-MOUNT FREQUENCY SYNTHESIZER



50 MHz to 6 GHz

Surface-mount package
SPI control
10 MHz frequency step
Switching time: ≤ 1 ms
20 × 16 × 4 mm package

The OTFS10-06 is a surface-mount frequency synthesizer with an output frequency range of 50 MHz to 6 GHz. Control interface: SPI. Reference frequency: 100 MHz. The frequency step is 10 MHz. Frequency switching time: ≤ 1 ms. Output power: 3 ± 3 dBm. Dimensions: 20 × 16 × 4 mm. Operating temperature: -40 to +70 °C.

TECHNICAL SPECIFICATIONS

OTFS10-06

Property	Value
Output frequency range	50 MHz-6 GHz
Frequency step	10 MHz
Frequency switching time	≤1 ms
Output power	3 ±3 dBm
Frequency stability	Tracks the external reference
Spurious level	≤-65 dBc; -70 dBc typical
Harmonic level	≤-5 dBc
Reference frequency	100 MHz
Reference input power	5 ±3 dBm
Reference phase noise	-125 dBc/Hz at 100 Hz offset; -153 dBc/Hz at 1 kHz offset; -160 dBc/Hz at 10 kHz offset; -160 dBc/Hz at 100 kHz offset; -165 dBc/Hz at 1 MHz offset
Supply voltage	Analog: +5 V; digital: +3.3 V
Supply current	Analog: 260 mA; digital: 10 mA
Control interface	SPI
Operating temperature	-40 to +70 °C
Storage temperature	-55 to +85 °C
Dimensions	20 × 16 × 4 mm
Specification conditions	Phase noise applies at 10 MHz steps and degrades at smaller steps. Below 10 MHz steps, spurious level is -60 dBc. External harmonic filtering is recommended.
Switching-time definition	From command reception until frequency error is less than 1 MHz.

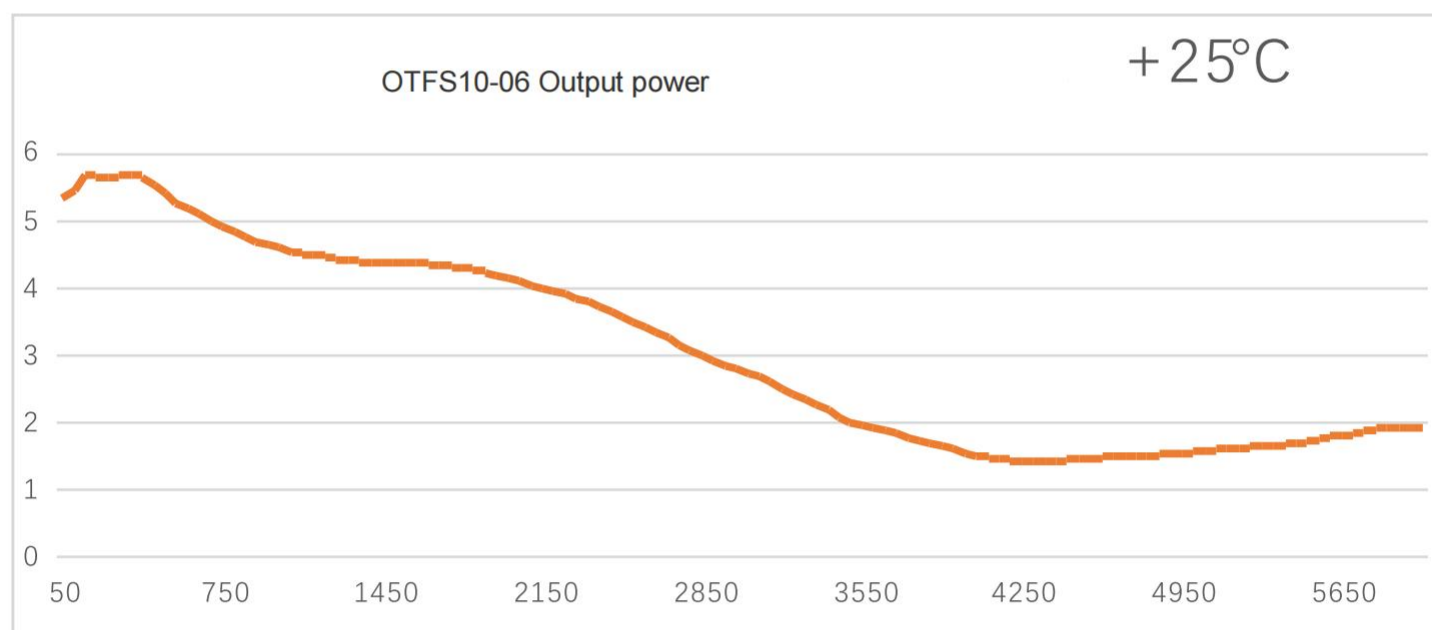
TECHNICAL INFORMATION

OTFS10-06 | Phase Noise (dBc/Hz)

Output Frequency	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz
1 GHz	≤-97	≤-106	≤-108	≤-114	≤-142
2 GHz	≤-91	≤-98	≤-102	≤-106	≤-134
4 GHz	≤-85	≤-94	≤-98	≤-100	≤-128
6 GHz	≤-82	≤-92	≤-98	≤-98	≤-124

Column headings specify frequency offset from the carrier. Output frequency is listed in the first column. Values and limit signs follow the source tables.

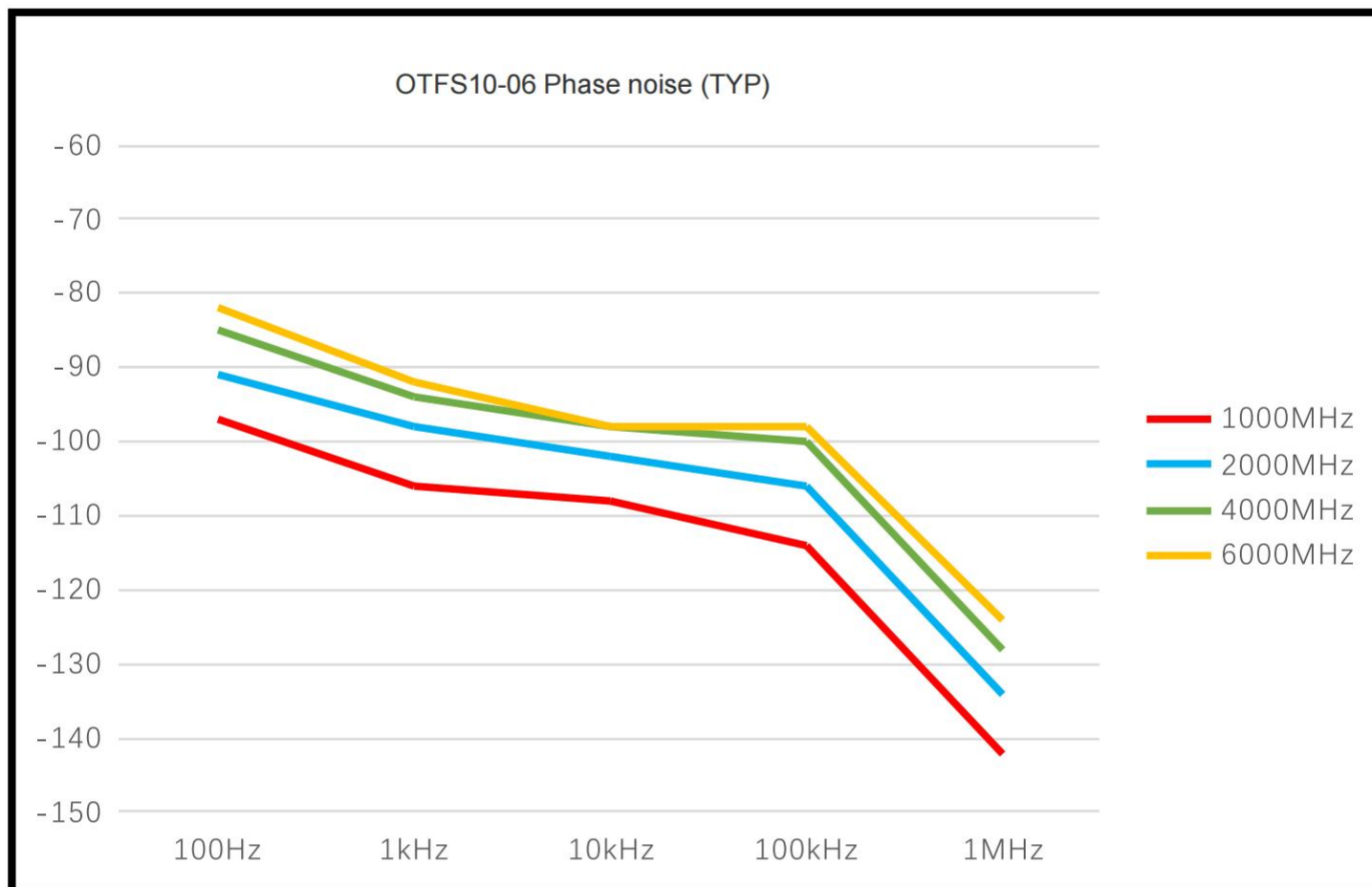
Output Power at +25 °C



Source measurement example. Curves represent the illustrated test conditions.

TECHNICAL INFORMATION

Typical Phase Noise Curves



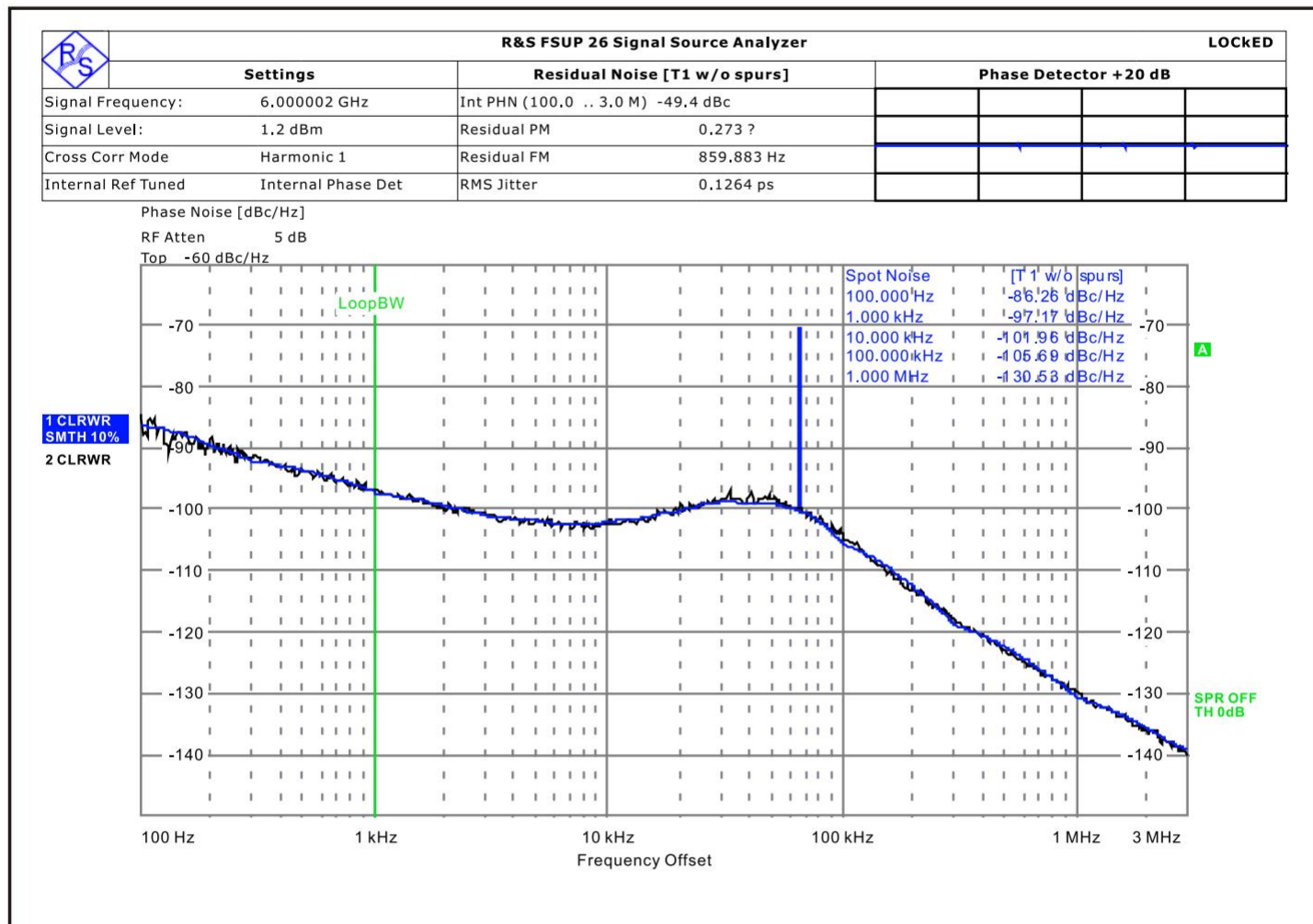
Source measurement example. Curves represent the illustrated test conditions.

Ordering Information

Ordering Code / Field	Description
OTFS10-06P-XXXX	Fixed-frequency output; XXXX specifies output frequency in MHz.
OTFS10-06-XXXX	50-6000 MHz output range; XXXX specifies the default initial frequency.

MEASUREMENT CURVES

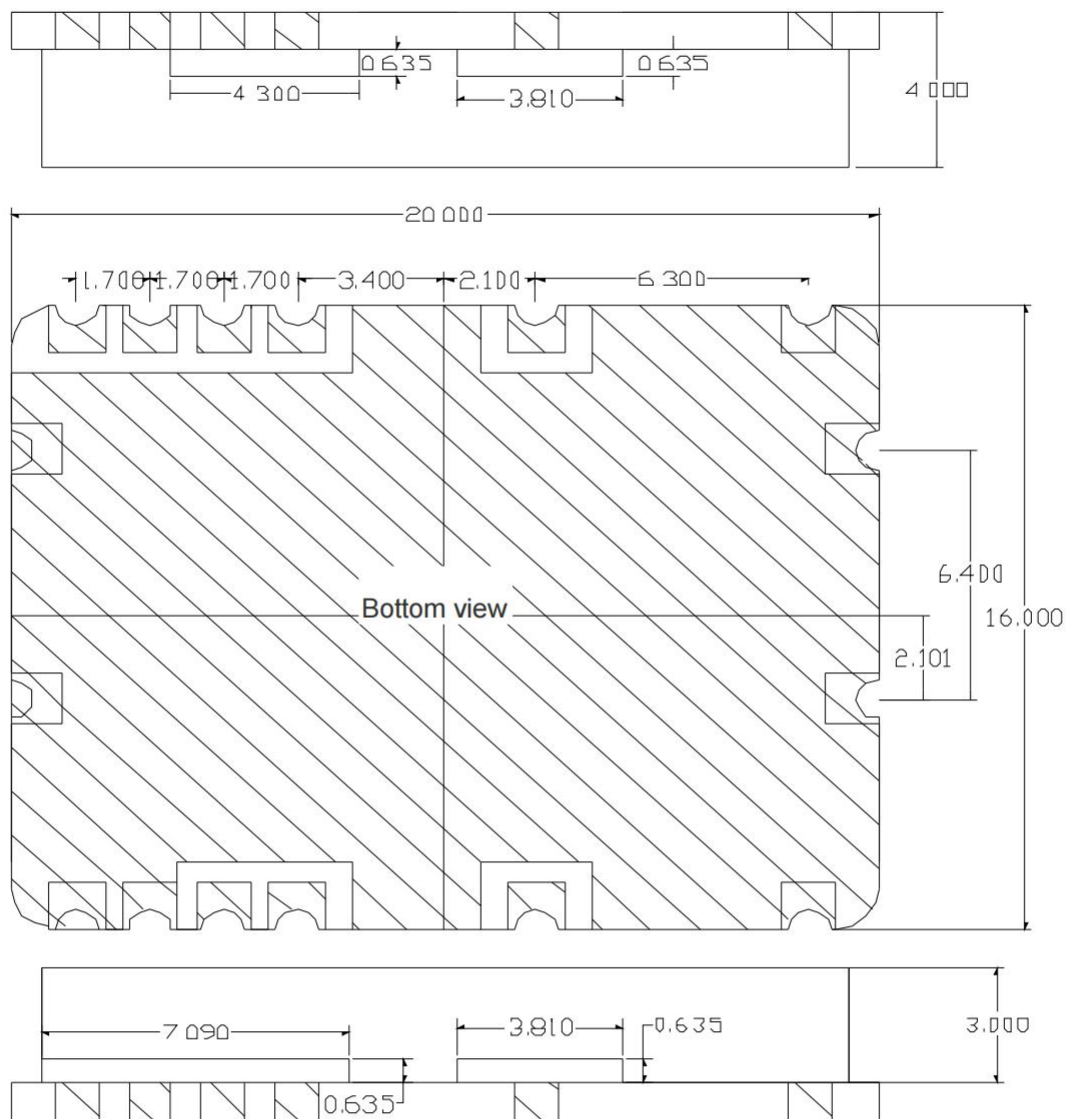
6 GHz Phase Noise Measurement



Source measurement example. Curves represent the illustrated test conditions.

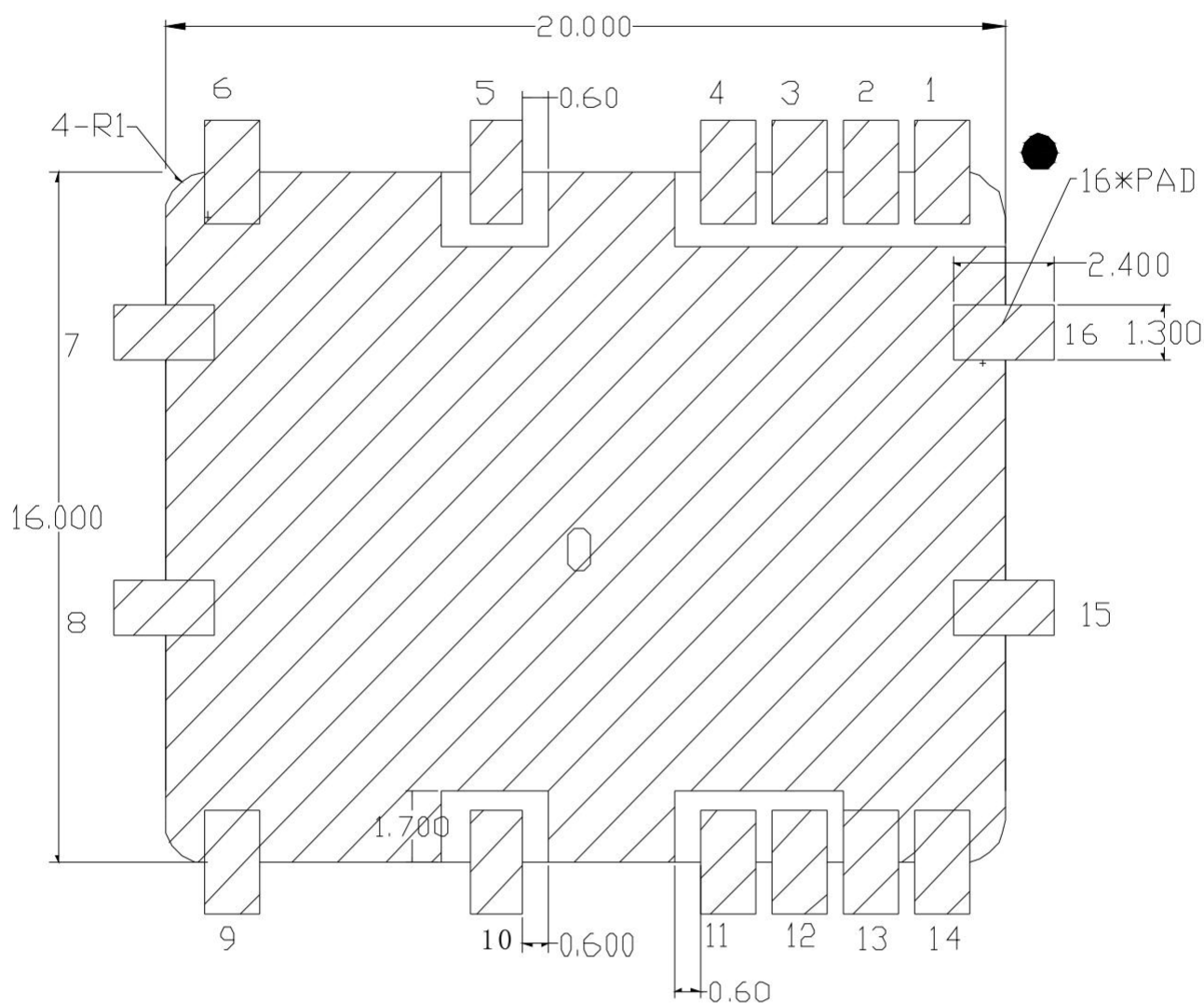
OUTLINE DIMENSIONS

Package Outline



Dimensions in mm.

Recommended PCB Land Pattern



Dimensions in mm.

INTERFACES & PIN ASSIGNMENTS

Pin Assignments

Pin	Definition
6, 7, 8, 9, 13, 14, 15, 16	GND
5	RFOUT: RF output
11	REFIN: reference input
12	VCC1: digital supply, 3.3 V / 10 mA
10	VCC2: analog supply, 5 V / 260 mA
4	LE: SPI communication enable
3	DATA: SPI data input
2	SCK: SPI clock
1	LD: lock indication output, TTL high when locked