

2 TO 18 GHz TTL QPSK DIGITAL MODULATOR

MODEL: SMT0218LC1MD (Modulation Driven)

FEATURES

- RF/LO coverage 2 to 18 GHz
- TTL-controlled I and Q inputs
- Phase accuracy $\pm 8^\circ$ typical
- Amplitude accuracy ± 0.75 dB typical
- Delay time 30 ns maximum

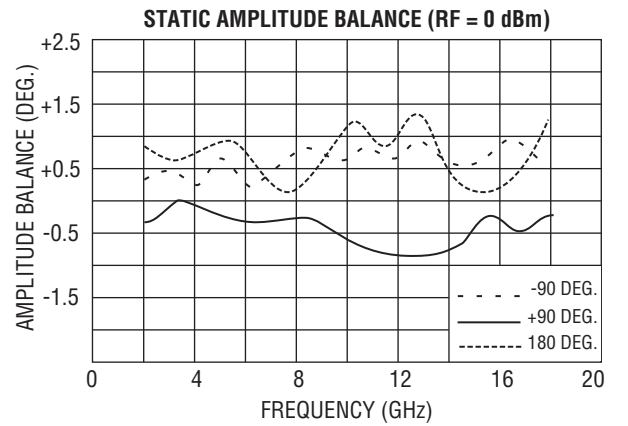
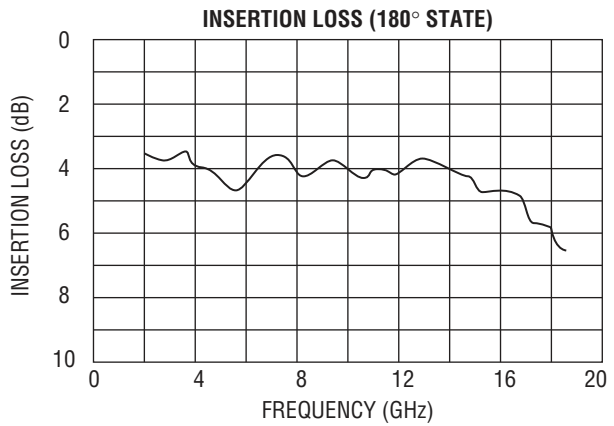
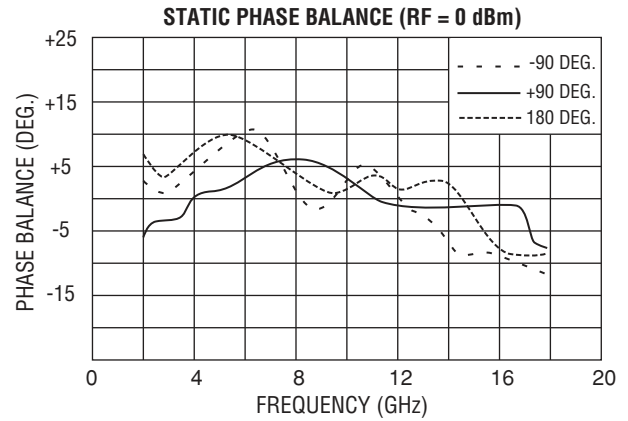
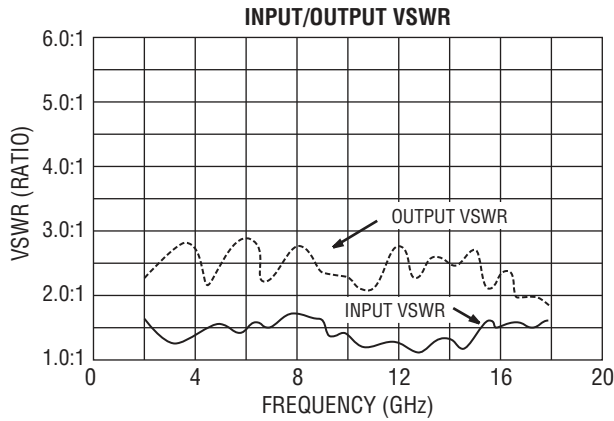


MITEQ's Model SMT0218LC1Q quadrature phase-shift keying (QPSK) modulators are designed for rapid digital TTL control applications. This device can be used in EW or radar simulator applications or in communication test systems. For example, two channels (I/Q) of isolated digital modulation can be transmitted in the same bandwidth as required for one biphasic modulator.

ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF carrier	GHz	2		18	
RF carrier level (Note 1)		dBm		0	+3
RF VSWR	50 ohm reference	Ratio		2.5:1	
IF modulation	2 bits			TTL	
DC power	+12 V -12 V	mA mA		20 20	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Insertion loss		dB		9	12
Quadra-state phase balance		Degrees		± 8	± 15
Quadra-state amplitude balance		dB		± 0.75	± 1.5
Switching speed (50% TTL to 90% RF)		ns		10	30
Modulation to RF output isolation		dB	25		
Carrier suppression	50 ohm reference	dBc	18	25	
OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	2		18
RF VSWR	50 ohm reference	Ratio		2.5:1	
Output phase matrix		TTL LEVELS		PHASE	UNITS
Note: 8 and 12 BIT TTL versions also available for smaller phase increments, such as in vector modulators.		0	0	Ref.	Degrees
		1	0	90	Degrees
		1	1	180	Degrees
		0	1	270	Degrees

SMT0218LC1MD MODULATION DRIVEN TYPICAL TEST DATA



MAXIMUM RATINGS

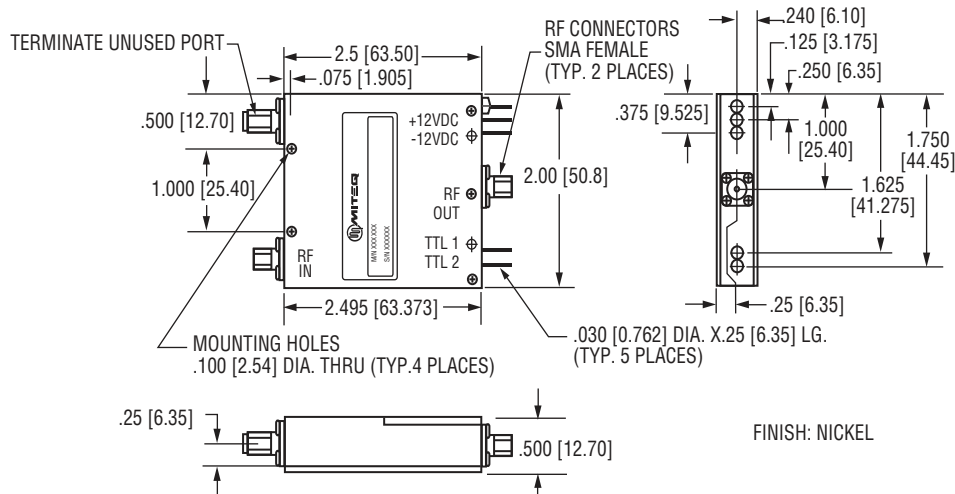
Specification temperature..... +25°C
 Operating temperature -54 to +85°C
 Storage temperature -65 to +125°C

GENERAL NOTES

1. PIN diodes for +20 dBm RF inputs.
2. Analog I/Q inputs for QAM.

NOTE: Test data supplied at 25°C; insertion loss, phase and amplitude balance.

OUTLINE DRAWING



NOTE: All dimensions shown in brackets [] are in millimeters.