



Series DC60 Compact Airborne DTOs

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Application Notes for [Microwave Oscillators](#)

FOR RWR, ESM AND OTHER APPLICATIONS

Herley General Microwave offers a compact multi-band DTOs for various airborne and other applications, covering the 2-6 and 6-18 GHz frequency ranges. The units feature high speed, high accuracy and low phase noise. The modular design of the DTOs enables the user to select narrower frequency coverage if desired. Please consult the factory for individual requirements.

- **Fast Settling Time**
- **2 to 18 GHz in Various Sub-Bands**
- **Small Size**
- **For Airborne Applications**



DC6618

COMPACT AIRBORNE DTO SPECIFICATIONS

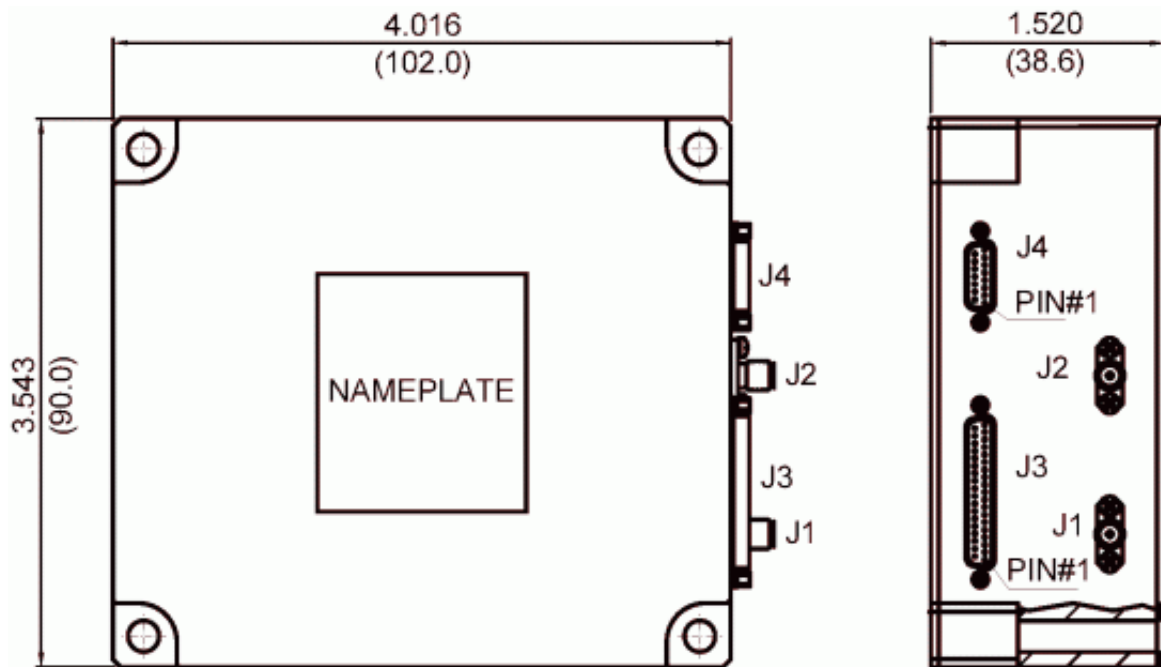
PARAMETER	MODEL	
	DC6206	DC6618
FREQUENCY RANGE (GHz)	2-6	6-18
ACCURACY @ +25°C, max (MHz)	±2	
FREQUENCY DRIFT, max (MHz/°C)	±0.1	
FREQUENCY SETTLING within 1 µsec, max (MHz)	±2	±3
MODULATION ⁽¹⁾ Bandwidth, min (MHz)	DC to 15	DC to 10
Sensitivity variation, max	1.1:1	
Frequency deviation (MHz/V) max	±250 @ 5V PTP	±250 @ 2V PTP
RF POWER Output, min (dBm)	2-8	+10
Variation, incl. temp. and frequency, max (dB)	±2	±2.5
PHASE NOISE, max (dBc/Hz) @ 100 kHz offset	-70	-65
RESIDUAL FM, p-p @ -3 dBc, max (KHz)	200	150

HARMONICS, max (dBc)	-45	-55
SUB-HARMONICS, max (dBc)	-45	-55
SPURIOUS, max (dBc)	-60	
PULLING @ VSWR 2:1, max (MHz)	±2	±1
PUSHING, max (MHz/V)	±2.5	±0.5
FREQUENCY STEP per LSB, (MHz) Nominal	1	0.5
MONOTONICTY	Guaranteed	
OPERATING TEMPERATURE (°C)⁽²⁾	0 to +70	
CONNECTORS		
Power	9 Pin MDM Male	
Control	37 Pin MDM Male	
RF output	SMA female	
Modulation Input	SMA female	
POWER SUPPLY REQUIREMENT (V)	+15, -15, +5 & +28	
MECHANICAL DIMENSIONS		
Inches	4.0 x 3.5 x 1.5	
Millimeters	102.0 x 90.0 x 38.6	

(1) Option

(2) Other operating temperature option

COMPACT AIRBORNE DTO DIMENSIONS



Wt: 510 grams (18 Oz.) approx.

CONNECTORS TABLE

Sym	Description	Function
J1	COAX CONN., SMA FEMALE	RF OUT
J2	COAX CONN., SMA FEMALE	MODULATION
J3	"ITT CANNON" CONN. MDM-37SH003P OR EQUIV.	CONTROL
J4	"ITT CANNON" CONN. MDM-9SH003P OR EQUIV.	POWER

MODELS DC6206, DC6618

Dimensional Tolerances, unless otherwise indicated: .XX ±.02; .XXX ±.005

J3 CONTROL CONNECTOR - PIN ASSIGNMENT			
Pin No.	Function		Description
	DC6206	DC6618	
1	N.C.	A14	Tuning Word (MSB)
2	A11	A12	Tuning Word
3	A9	A10	Tuning Word
4	A7	A8	Tuning Word
5	A5	A6	Tuning Word
6	A3	A4	Tuning Word
7	A1	A2	Tuning Word
8	V1	V0	VCO Control Bit
9	LE	LE	Latch
10	N.C.	N.C.	N.C.
11	OE	N.C.	OE
12	N.C.	N.C.	N.C.
13	N.C.	N.C.	N.C.
14	N.C.	N.C.	N.C.
15	N.C.	N.C.	N.C.
16	N.C.	N.C.	N.C.
17	N.C.	N.C.	N.C.
18	GND	N.C.	Ground/N.C.
19	N.C.	GND	Ground
20	A12	A13	Tuning Word
21	A10	A11	Tuning Word
22	A8	A9	Tuning Word
23	A6	A7	Tuning Word
24	A4	A5	Tuning Word
25	A2	A3	Tuning Word
26	A0	A1	Tuning Word
27	V0	A0	VCO Control/Tuning Word (LSB)
28	N.C.	GND	Ground
29	GND	N.C.	Ground/N.C.
30	N.C.	N.C.	N.C.
31	N.C.	N.C.	N.C.
32	N.C.	N.C.	N.C.
33	N.C.	N.C.	N.C.
34	N.C.	N.C.	N.C.
35	N.C.	N.C.	N.C.
36	N.C.	N.C.	N.C.

37	GND	GND	Ground
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Notes:**A. For Model DC6618**

Logic Levels:

Logic Level	Input Level
"0"	-0.3 to 0.8V
"1"	2.0 to 5.0V

1. Pins 19, 28 and 37 should be grounded.
2. Pins 10 through 18 and 29 through 36 should not be connected (for factory use only).

B. For Model DC6206

1. Pins 11, 18, 29 and 37 should be grounded.
2. Pins 1, 10, 12 through 17, 19, 28 and 30 through 36 should not be connected (for factory use only).

J4 POWER CONNECTOR - PIN ASSIGNMENT

Pin No.	Function	Description	Notes	Max. Current Consumption (mA)
1	5V	Digital Supply		500
2	-15V	Analog Supply		500
3	+15V	Analog Supply		1,000
4	28V Return	Negative Heater Supply		
5	28V	Positive Heater Supply		
6	Return for: +5V, -15V, +15V	Ground	1	–
7	Return for: +5V, -15V, +15V	Ground	1	–
8	28V Return	Negative Heater Supply		
9	28V	Positive Heater Supply		1,000 ⁽²⁾

Notes:

1. GND is the DTOs analog ground for the +15V, -15V and +5V supplies and not the heater's ground.
2. Warm up 3,000 mA, steady state 1,000 mA max.



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