

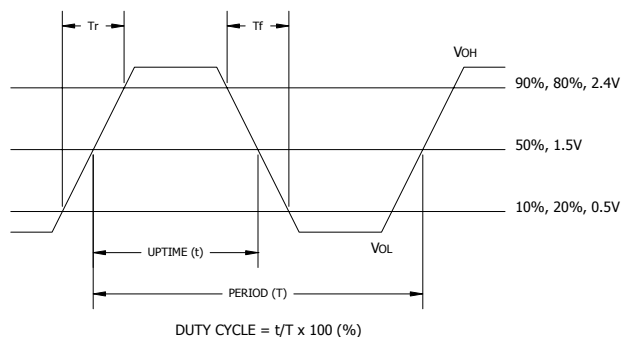
ELECTRICAL CHARACTERISTICS

	PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Absolute Maximums	Maximum Supply Voltage	V_{CC}	-	-0.5	-	4.6	V
	Storage Temperature	T_{STG}	-	-55	-	125	°C
	Frequency Range	f_O	-	2	-	200	MHz
	Frequency Stability (See Note 1 and Ordering Information)	$\Delta f/f_O$	-	-	-	50	± ppm
	Operating Temperature Commercial Industrial	T_A	-	-20 -40	25	70 85	°C
	Data Retention	-	@ 85°C	10	-	-	Years
Electrical and Waveform Parameters	Supply Voltage (see Note 2)	V_{CC}	± 10 %	2.25 2.97	2.5 3.3	2.75 3.63	V
	Supply Current	I_{CC}	@ $C_L = 15$ pF	-	-	40	mA
	Output Load	C_L	-	-	-	15	pF
	Output Voltage Levels Logic '1' Level	V_{OH}	CMOS Load $I_{OH} = -4$ mA	0.1 V_{CC}	-	-	V
	Logic '0' Level	V_{OL}	CMOS Load $I_{OL} = +4$ mA	-	-	0.9 V_{CC}	V
	Output Duty Cycle	SYM	@ 50% Level	45	-	55	%
	Rise and Fall Time	T_{Rr}, T_{Ff}	@ 20% - 80% Levels	-	2.5	4	ns
	Start Up Time	T_S	Application of V_{CC}	-	-	10	ms
	Enable Function Enable Input Voltage	V_{IH}	Pin 1 Logic '1', Output Enabled	0.7 V_{CC}	-	-	V
	Disable Input Voltage	V_{IL}	Pin 1 Logic '0', Output Disabled	-	-	0.2 V_{CC}	V
	Standby Current	I_{ST}	Pin 1 Logic '0', Output Disabled	-	-	10	µA
	Enable Start Up Time	T_{PLZ}	Pin 1 Logic '1', Output Enabled	-	-	10	ms
	Jitter (peak - peak)	J_{p-p}	10k hits & 0.1µF bypass capacitor	-	100	250	ps
Phase Jitter	t_{jms}	Bandwidth 12 kHz - 20 MHz	-	2.5	-	ps RMS	

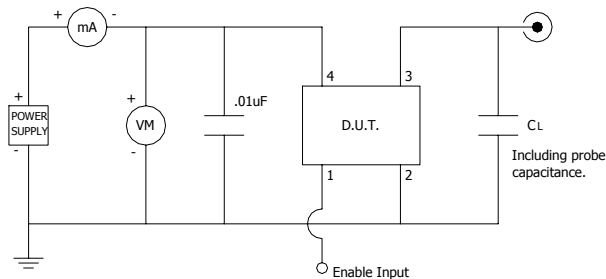
Notes:

- Inclusive of initial tolerance at time of shipment, changes in supply voltage, load, temperature and first year aging at an average operating temperature of +40 °C.
- Power supply start-up time should be greater than 150 µs (0% V_{CC} to 90% V_{CC}).

CMOS/TTL OUTPUT WAVEFORM



TEST CIRCUIT, CMOS LOAD



ENABLE TRUTH TABLE

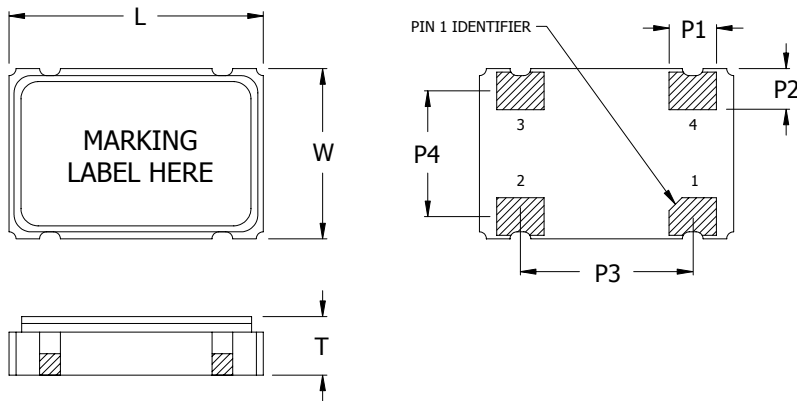
PIN 1	PIN 3
Logic '1'	Output
Open	Output
Logic '0'	High Imp.

D.U.T. PIN ASSIGNMENTS

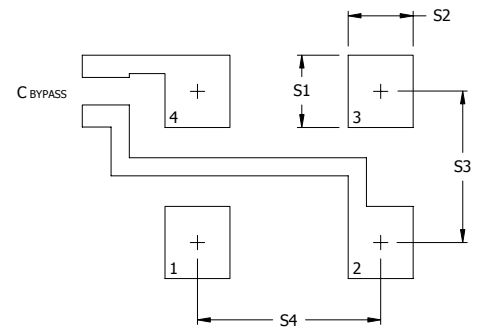
PIN	SYMBOL	DESCRIPTION
1	EOH	Enable Input (Standby)
2	GND	Circuit & Package Ground
3	Output	RF Output
4	V_{CC}	Supply Voltage

MECHANICAL SPECIFICATIONS

PACKAGE DRAWING



SUGGESTED SOLDER PAD GEOMETRY



DIMENSION TABLE

PACKAGE	L	W	T	P1	P2	P3	P4	S1	S2	S3	S4
CP5	5.0 ±0.2	3.2 ±0.2	1.2 Max	1.2	1.0	2.54	2.2	1.2	1.4	2.2	2.54
	0.197 ±0.008	0.126 ±0.008	0.047 Max	0.047	0.039	0.100	0.087	0.047	0.055	0.087	0.100
CP7	7.0 ±0.2	5.0 ±0.2	1.6 Max	1.4	1.2	5.08	3.7	2.0	1.8	4.2	5.08
	0.276 ±0.008	0.197 ±0.008	0.063 Max	0.055	0.047	0.200	0.146	0.079	0.071	0.165	0.200

Key: $\frac{\text{mm}}{\text{Inch}}$

CP5 MARKING INFORMATION, Label

1. P5 – programmable, 5x3.2mm package.
2. V - voltage code (see Ordering Information).
3. S - stability/temperature code (see Ordering Information).
4. D – Manufactured Date Code (see Table I).
5. XX.XXX - Frequency marked with 3 significant digits after the decimal or XXX.XX - Frequency marked with 2 significant digits after the decimal.



CP7 MARKING INFORMATION, Label

1. YYWW – Programmed Date code, YY – year, WW – week.
 2. XXX.XXXX - Frequency marked with 4 significant digits after the decimal.
 3. P7VSP
- P7 – programmable, 7x5mm package.
V - voltage code.
S - stability/temperature code.

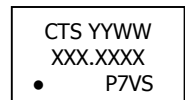


TABLE I – DATE CODE

					MONTH											
					JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
YEAR																
2001	2005	2009	2013	2017	A	B	C	D	E	F	G	H	J	K	L	M
2002	2006	2010	2014	2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2003	2007	2011	2015	2019	a	b	c	d	e	f	g	h	j	k	l	m
2004	2008	2012	2016	2020	n	p	q	r	s	t	u	v	w	x	y	z



PACKAGING INFORMATION

Contact CTS Distributors for quantity requirements and mechanical details for each packaging option.

ENVIRONMENTAL SPECIFICATIONS

Temperature Cycle:	400 cycles from -55°C to +125°C, 10 minute dwell at each temperature, 1 minute transfer time between temperatures.
Mechanical Shock:	1,500g's, 0.5mS duration, ½ sinewave, 3 shocks each direction along 3 mutually perpendicular planes (18 total shocks).
Sinusoidal Vibration:	0.06 inches double amplitude, 10 to 55 Hz and 20g's, 55 to 2,000 Hz, 3 cycles each in 3 mutually perpendicular planes (9 times total).
Gross Leak:	No leak shall appear while immersed in an FC40 or equivalent liquid at +125°C for 20 seconds.
Fine Leak:	Mass spectrometer leak rates less than 2×10^{-8} ATM cc/sec air equivalent.
Resistance to Solder Heat:	Product must survive 3 reflows of +260°C peak, 10 seconds maximum.
High Temperature Operating Bias:	2,000 hours at +125°C, maximum bias, disregarding frequency shift.
Frequency Aging:	1,000 hours at +85°C, full bias, less than ±5 ppm shift.
Moisture Sensitivity Level:	Level 1 per JEDEC J-STD-020.

QUALITY AND RELIABILITY

Quality systems meet or exceed the requirements of ISO 9000:2000 standards.