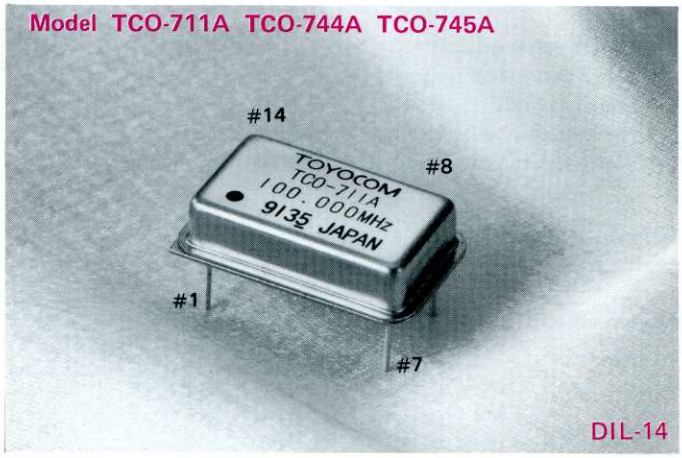
Crystal Oscillators

TOYOCOM

FULL DIP TTL 711A Series

Features

- TTL logic output
- DIL-14 pin package compatible
- Hermetically sealed metal package
- Case ground 7-pin for minimizing RF radiation



Dimensions
20.8x13.2x5.0 max. (mm) .820x.520x.200 max. (inch)
Pin Connections
#14 V_{CC} #8 OUTPUT
#1 N.C. #7 GND/CASE

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	−0.5 to +7.0	V
Input voltage	V_{IN}	−0.5 to V_{CC} +0.5	V
Output voltage	V_O	−0.5 to V_{CC} +0.5	V
Input current	I_{IN}	±10	mA
Output current	I_O	±25	mA
Storage temperature	T_{stg}	−55 to +125	°C

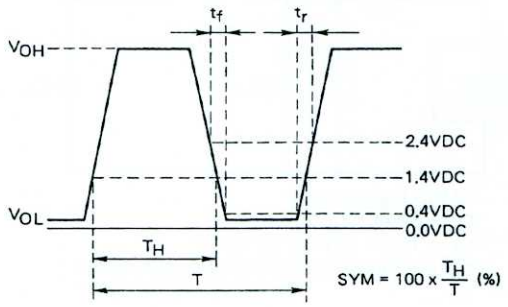
Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Frequency range	F_O	0.25 0.25	– –	100 70	MHz MHz	TCO-711A TCO-744A, TCO-745A
Frequency stability	$\Delta F/F_O$	−100 −25 −50	– – –	100 25 50	ppm ppm ppm	TCO-711A *1 TCO-744A TCO-745A
Operating temperature	T_{opr}	0	25	70	°C	
Operating voltage	V_{CC}	4.5	5.0	5.5	V	DC
Operating current	I_{CC}	–	–	*3	mA	V_{CC} = 5.5V
Output voltage	V_{OH} V_{OL}	2.4 –	– –	– 0.4	V V	I_{OH} = −0.4 mA I_{OL} = 16 mA
Symmetry	SYM	40	50	60	%	at 1.4V
Rise/Fall time	tr, tf	–	–	*3	ns	at 0.4V to 2.4V/at 2.4V to 0.4V
Fanout	n	– –	– –	10 5	– –	0.25 to 60 MHz 60+ to 100 MHz
Start-up time	t_{st}	– –	– –	4 10	ms ms	0.25 to 26 MHz *2 26+ to 100 MHz *2

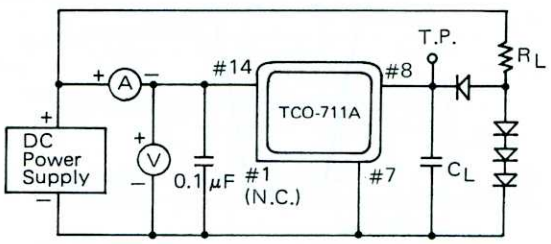
*1 Inclusive of calibration tolerance at 25°C, operating temperature, operating voltage range, load change, aging, shock and vibration.
*2 Rise time (0 to 4.5V) of V_{CC} > 150 μs
*3

Freq.	1.5 to 9	9+ to 23	23+ to 32	32+ to 60	60+ to 80	80+to100	MHz
I_{CC}	30	30	40	50	70	90	mA
t_r, t_f	15	10	10	5	5	4	ns

Output waveform



Test circuit



TTL logic output
R_L = 400Ω (0.25 to 60 MHz)
R_L = 800Ω (60+ to 100 MHz)

C_L = 15 pF max.
Note: total fixture and probe capacitance