

**MOTOROLA**

查询"1648M/BDAJC"供应商

Voltage Controlled Oscillator

ELECTRICALLY TESTED PER:
MPG 1648M

The 1648M requires an external parallel tank circuit consisting of the inductor (L) capacitor (C).

A varactor diode may be incorporated into the tank circuit to provide a voltage variable input for the oscillator (VCO). This device may be used in many applications requiring a fixed or variable frequency clock source of the high spectral purity. (See Test Circuit).

The 1648M may be operated from a + 5.0 Vdc supply or a - 5.2 Vdc supply, depending upon system requirements.

ABSOLUTE MAXIMUM RATINGS:	Symbol	Min	Max	Unit
Power Supply Voltage ($V_{CC} = 0$)	V_{CC}	-8.0	0	Vdc
Input Voltage @ ($V_{EE} = -5.2$ Vdc)	V_{IN5} V_{IN12}	-5.2 0	-3.4 V_{EE}	Vdc Vdc
Output Source Current	I_O		< 40	mAdc
Storage Temperature Range	T_{stg}	-55	+ 125	°C
Operating Temperature Range	T_A	-55	+ 125	°C

PIN ASSIGNMENTS

FUNCTION	DIL	FLATS	LCC	BURN-IN
	Case 692	Case 717	Case 756A	(CONDITION C)
V _{CC}	1	1	2	GND
N.C.	2	2	3	OPEN
Output	3	3	4	51 Ω to V _{TT}
N.C.	4	4	6	OPEN
AGC	5	5	8	OPEN
N.C.	6	6	9	OPEN
V _{EE}	7	7	10	V _{EE}
V _{EE}	8	8	12	V _{EE}
N.C.	9	9	13	OPEN
Bias Point	10	10	14	OPEN
N.C.	11	11	16	OPEN
Tank	12	12	18	51 Ω to V _{TT}
N.C.	13	13	19	OPEN
V _{CC}	14	14	20	GND

BURN - IN CONDITIONS:

V_{TT} = -2.0 V MAX/ -2.2 V MIN

 $V_{EE} = -5.7 \text{ V MAX} / -5.2 \text{ V MIN}$

Military 1648M

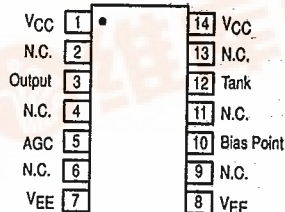


AVAILABLE AS

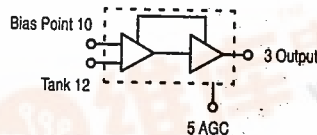
- 1) JAN: N/A
2) SMD: N/A
3) 883: 1648M/BXAJC
X = CASE OUTLINE AS FOLLOWS:

PACKAGE: CERDIP: C
CERFLAT: D
LCC: 2

The letter "M" appears before the slash on LCC.



LOGIC DIAGRAM



Input Capacitance = 6.0 pF typ
Maximum Series Resistance for L (External Inductance) = 50 Ω typ
Power Dissipation = 215 mW typ/pkg (+ 5.0 Vdc supply)
Maximum Output Frequency = 225 MHz typ

T-50-15

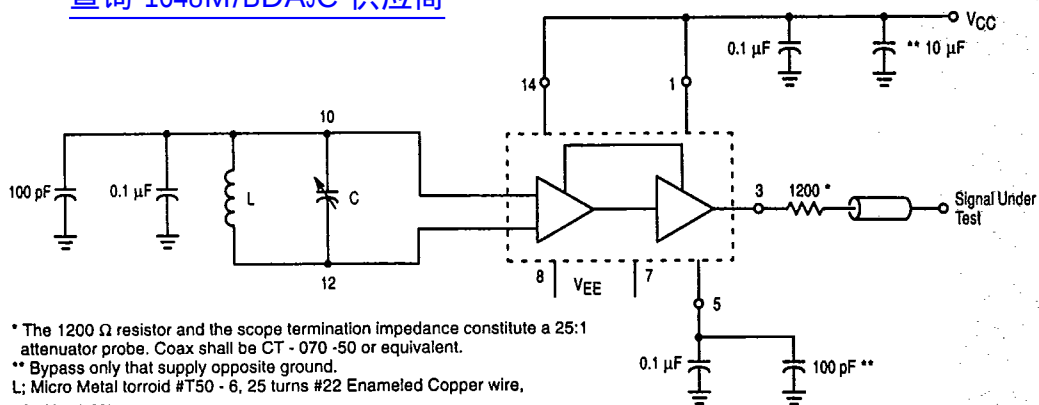
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Figure 1. Test Circuit

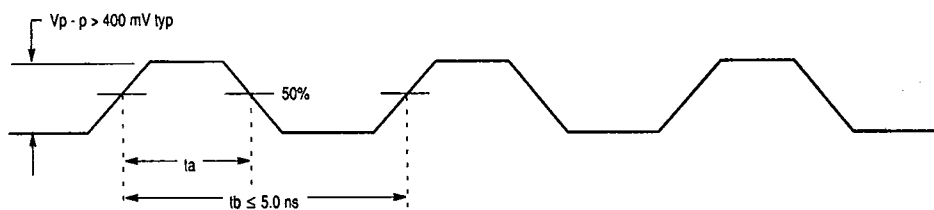


Figure 2. Test Circuit Waveforms

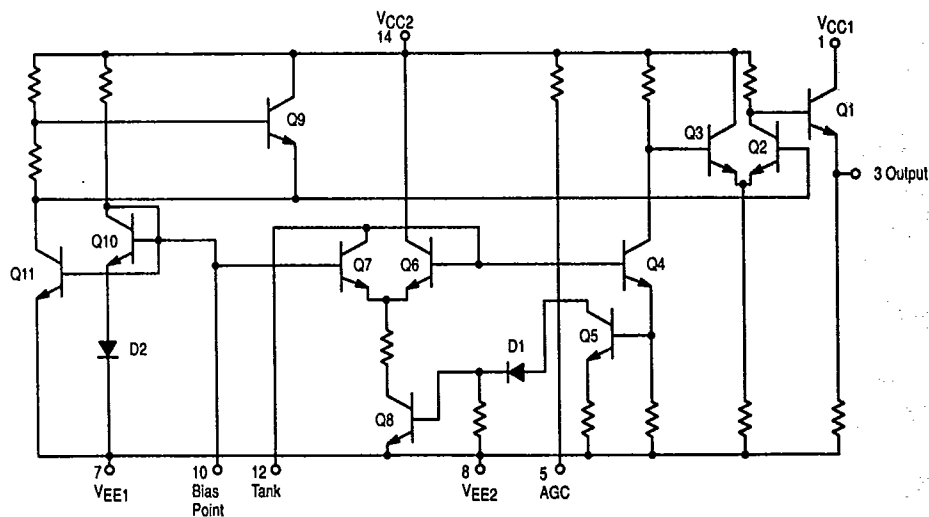


Figure 3. Circuit Schematic

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1648M QUIESCENT LIMIT TABLE

Test Temperature	Test Voltage Values (Volts)						Test Current Values (mA)
	V _{IHA}	V _{ILA}	V _{IHB}	V _{ILB}	V _{VEE}	V _{OC}	I _L
T _A = 25 °C	-3.35	-3.85	+1.85	+1.35	-5.2	+5.0	-5.0
T _A = 125 °C	-3.60	-4.10	+1.60	+1.10	-5.2	+5.0	-5.0
T _A = -55 °C	-3.13	-3.63	+2.07	+1.57	-5.2	+5.0	-5.0

Symbol	Parameter	Limits						Units	TEST VOLTAGE APPLIED TO PINS BELOW								
	Functional Parameters:	+ 25 °C		+ 125 °C		- 55 °C			Pinouts referenced are for DIL package, check Pin Assignments								
		Subgroup 1		Subgroup 2		Subgroup 3											
		Min	Max	Min	Max	Min	Max										
		V _{IHA}	V _{OHA}	V _{OLA}	V _{IHB}	V _{OHB}	V _{OLB}										I _{CC}
	High Internal Threshold Voltage	- 3.75	- 3.45	- 4.0	- 3.7	- 3.53	- 3.23	V		12			V _{CC}	V _{EE}	I _L	GND	P.U.T.
	High Output Voltage	- 0.96	- 0.75	- 0.84	- 0.60	- 1.08	- 0.87	V		12				7.8		1, 14	5, 10
	Low Output Voltage	- 1.85	- 1.62	- 1.82	- 1.54	- 1.92	- 1.67	V	12					7.8	3	1, 14	3
	High Internal Threshold Voltage	1.45	1.75	1.2	1.5	1.67	1.97	V				12	1, 14			7.8	5, 10
	High Output Voltage	4.04	4.25	4.16	4.4	3.92	4.13	V				12	1, 14		3	7.8	3
	Low Output Voltage	3.2	3.43	3.23	3.51	3.13	3.38	V			12		1, 14		3	7.8	3
	Power Supply Current Off		40					mA								7.8	1, 14
	Power Supply Drain Current	- 41						mA						7.8		1, 14	7, 8

Symbol	Parameter	Limits						Units	TEST VOLTAGE APPLIED TO PINS BELOW	
	Functional Parameters:	+ 25 °C		+ 125 °C		- 55 °C			Pinouts referenced are for DIL package, check Pin Assignments Output Load = 50 Ω to GND	
		Subgroup 9		Subgroup 10		Subgroup 11				
		Min	Max	Min	Max	Min	Max			
* f _{Max}	Oscillation Frequency	200		200		190		MHz	VCC 1, 14	GND 7, 8

* Frequency variations over temperature is a direct function of the ΔC/Δ Temperature and ΔI/Δ Temperature.