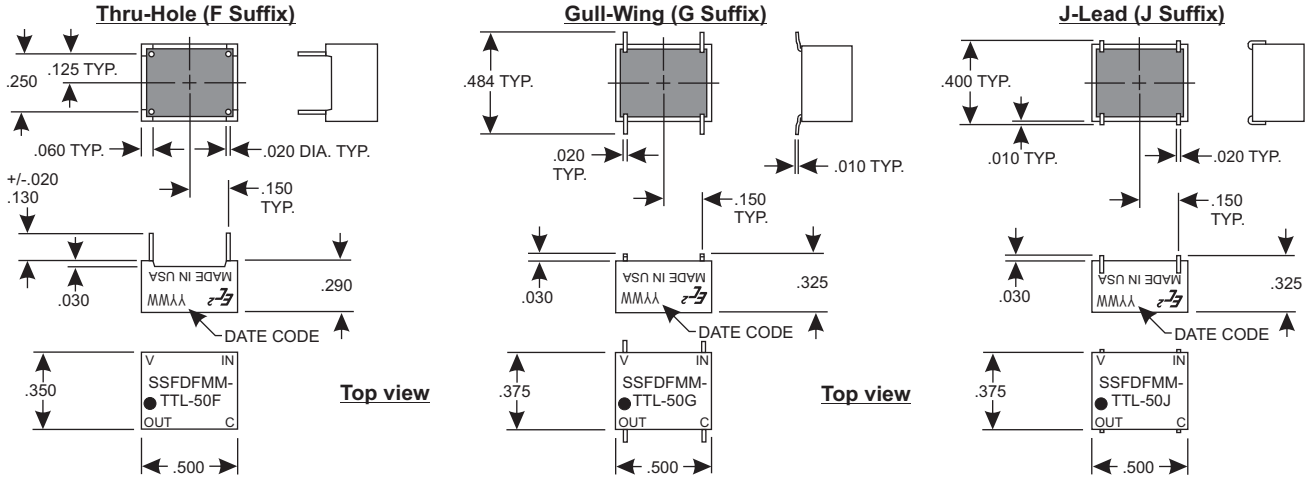
Space Saver FAST TTL Digital Frequency Multiplier Module

The Space Saver FAST TTL Digital Frequency Multiplier Modules manufactured by Engineered Components Company are designed to provide a square wave output at a given frequency which can be synchronized by square wave inputs at sub-harmonic frequencies. The falling edge of the output waveform is synchronized to the falling edge of the input waveform. If no synchronizing input is present, the unit will free-run, producing a continuous output square wave. Phase jitter at the output will increase as higher orders of multiplication are used.

The MTBF on these modules, when calculated per MIL-HDBK-217, for a 50 deg.C ground fixed environment and with 50VDC applied, is in excess of 2 million hours. The temperature coefficient of delay is less than 500 ppm/deg.C over the operating temperature range of 0 to +70 deg. C.

The module is provided in a 8-pin Space Saver package, fully encapsulated in epoxy resin and is housed in a Diallyl Phthalate case, blue in color. The case marking is applied by silkscreen using white epoxy paint. The 4 copper leads are tin-lead plated and meet the solderability requirements of MIL-STD-202, Method 208.

MECHANICAL DIAGRAM



Product Selection Table
(Add F Suffix for Thru-Hole Leads, G Suffix for Gull-Wing Leads, or J Suffix for J-Leads)

Part Number	Nominal Output Frequency	Output Frequency Tolerance
SSFDFMM-TTL-2	2.0 MHz	+/-2%
SSFDFMM-TTL-3	3.0 MHz	+/-2%
SSFDFMM-TTL-4	4.0 MHz	+/-2%
SSFDFMM-TTL-5	5.0 MHz	+/-2%
SSFDFMM-TTL-6	6.0 MHz	+/-2%
SSFDFMM-TTL-7	7.0 MHz	+/-2%
SSFDFMM-TTL-8	8.0 MHz	+/-2%
SSFDFMM-TTL-9	9.0 MHz	+/-2%
SSFDFMM-TTL-10	10.0 MHz	+/-2%
SSFDFMM-TTL-11	11.0 MHz	+/-2%
SSFDFMM-TTL-12	12.0 MHz	+/-2%
SSFDFMM-TTL-13	13.0 MHz	+/-2%
SSFDFMM-TTL-14	14.0 MHz	+/-2%
SSFDFMM-TTL-15	15.0 MHz	+/-2%
SSFDFMM-TTL-16	16.0 MHz	+/-2%
SSFDFMM-TTL-17	17.0 MHz	+/-2%
SSFDFMM-TTL-18	18.0 MHz	+/-2%
SSFDFMM-TTL-19	19.0 MHz	+/-2%
SSFDFMM-TTL-20	20.0 MHz	+/-2%
SSFDFMM-TTL-22	22.0 MHz	+/-2%
SSFDFMM-TTL-24	24.0 MHz	+/-2%
SSFDFMM-TTL-25	25.0 MHz	+/-2%
SSFDFMM-TTL-26	26.0 MHz	+/-2%
SSFDFMM-TTL-28	28.0 MHz	+/-2%
SSFDFMM-TTL-30	30.0 MHz	+/-2%
SSFDFMM-TTL-32	32.0 MHz	+/-2%
SSFDFMM-TTL-34	34.0 MHz	+/-2%
SSFDFMM-TTL-35	35.0 MHz	+/-2%
SSFDFMM-TTL-36	36.0 MHz	+/-2%
SSFDFMM-TTL-38	38.0 MHz	+/-2%
SSFDFMM-TTL-40	40.0 MHz	+/-2%
SSFDFMM-TTL-45	45.0 MHz	+/-2%
SSFDFMM-TTL-50	50.0 MHz	+/-2%
SSFDFMM-TTL-60	60.0 MHz	+/-2%
SSFDFMM-TTL-70	70.0 MHz	+/-2%
SSFDFMM-TTL-80	80.0 MHz	+/-2%
SSFDFMM-TTL-90	90.0 MHz	+/-2%
SSFDFMM-TTL-100	100.0 MHz	+/-2%

Special modules can often be manufactured to provide for customer specific applications.

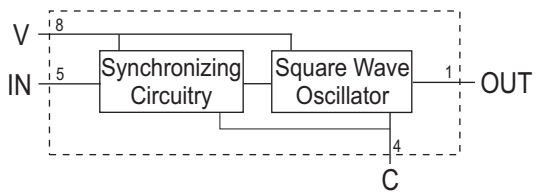
Operating Specifications:

All measurements made at 25 deg. C
All measurements made with Vcc = +5VDC
All measurements made with (1) FAST TTL output load

Operating Temperature: 0 to +70 deg. C
Storage Temperature: -55 to +125 deg. C

Vcc Supply Voltage: 4.75 to 5.25VDC
Vcc Supply Current:
SSFDFMM-TTL-2X = 30mA typical
SSFDFMM-TTL-100X = 60mA typical
Logic "High" Input:
Voltage: 2.0VDC min. ; Vcc max.
Current: 2.7VDC = 20uA max. ; 5.5VDC = 1mA max.
Logic "Low" Input:
Voltage: 0.8 VDC max.
Current: -0.6mA max.
Logic "High" Voltage Out: 2.7VDC min.
Logic "Low" Voltage Out: 0.5VDC max.

BLOCK DIAGRAM



engineered components company
A Division of Cornucopia Tool & Plastics, Inc. PO Box 1915, 448 Sherwood Rd., Paso Robles CA 93447
Phone: 805-369-0034
Fax: 805-369-0033
Web: www.ec2.com