

EC²



LOW FREQUENCY SQUARE WAVE GENERATOR MODULE

low profile

T²L

COMPATIBLE

- T²L input and output
- Output wavetrain can be started in sync with random events
- 14-pin DIP package (.240 high)
- Available in frequencies from 30 KHz to 1 Mhz
- Output frequencies controlled to within $\pm 2\%$
- 10 T²L fan-out capacity

period of one cycle. This feature allows the initiation of a timing wavetrain with the origin in synchronization with another event.

These Square Wave Generator Modules are of hybrid construction utilizing the proven technologies of active integrated circuitry and of passive networks utilizing capacitive, inductive and resistive elements. The ICs utilized in these modules are burned-in to Level B of MIL-STD-883 to ensure a high MTBF. The MTBF on these modules, when calculated per MIL-HDBK-217 for a 50°C ground fixed environment, is in excess of 2 million hours.

design notes

The "DIP Series" Square Wave Generator Modules developed by Engineered Components Company have been designed to provide a T²L level square wave output at frequencies from 30 KHz to 1 Mhz. These generators are both keyable and synchronizable, producing a continuous output train as long as a zero (low) is maintained at the enable input. As long as the enable input is a "1" (high), the output will be a constant "1" (high). Whenever the enable input goes low, the output wavetrain will start in the same sequence with the first low appearing one-half cycle after trigger, and the first positive edge occurring after the

The LFSWGM-TTL is offered in twenty-eight (28) different frequencies from 30 KHz to 1 Mhz. Output frequencies are controlled to within $\pm 2\%$ and have a temperature coefficient of less than ± 200 ppm/°C over the operating temperature range of 0 to +70°C.

These "DIP Series" modules are packaged in a 14-pin DIP housing, molded of flame-proof Diallyl Phthalate per MIL-M-14, Type SDG-F, and are fully encapsulated in epoxy resin. Leads meet the solderability requirements of MIL-STD-202, Method 208. Corner standoffs on the housing provide positive standoff from the printed circuit board to permit solder-fillet formation and flush cleaning of solder-flux residues for improved reliability.

EC²

engineered components company

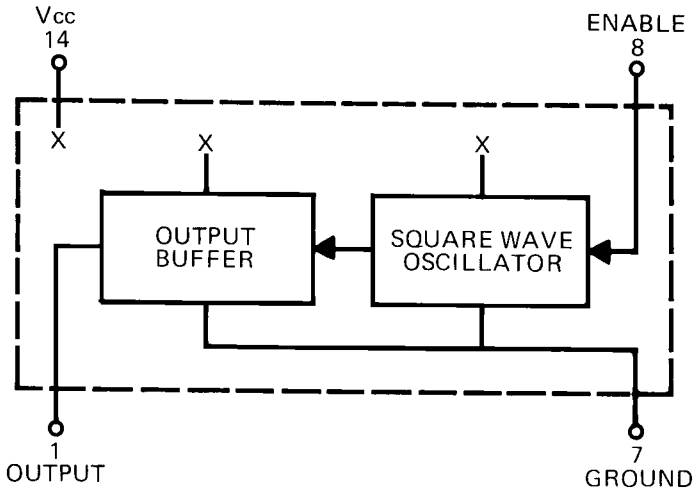
3580 Sacramento Drive, P. O. Box 8121, San Luis Obispo, CA 93403-8121

Phone: (805) 544-3800

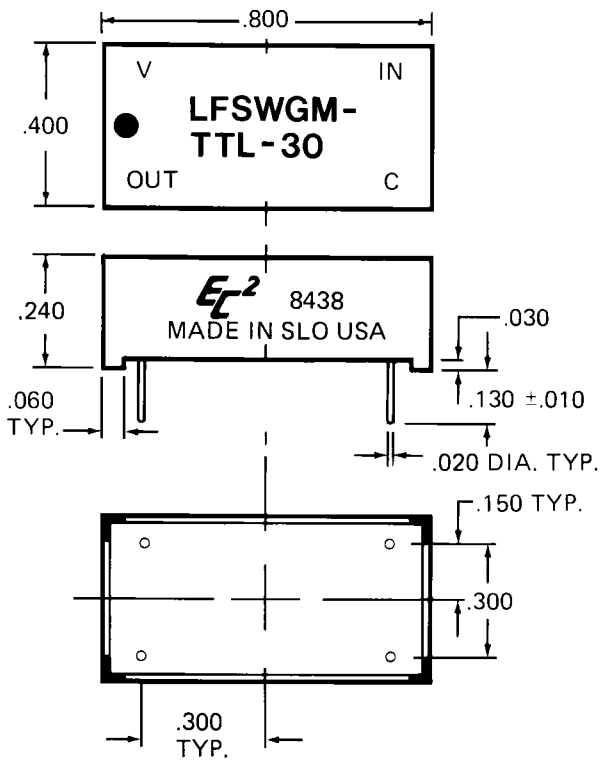
DESIGN NOTES (continued)

Marking consists of manufacturer's name, logo (EC²), part number, terminal identification and date code of manufacture. All marking is applied by silk screen process using white epoxy paint in accordance with MIL-STD-130, to meet the permanency of identification required by MIL-STD-202, Method 215.

BLOCK DIAGRAM IS SHOWN BELOW



MECHANICAL DETAIL IS SHOWN BELOW



TEST CONDITIONS

1. All measurements are made at 25°C.
2. V_{CC} supply voltage is maintained at 5.0V DC.
3. All units are tested using a Schottky toggle-type gate driving the input and one Schottky T²L load at the output.

OPERATING SPECIFICATIONS

- * V_{CC} supply voltage: 4.75 to 5.25V DC
- V_{CC} supply current:
 - LFSWGM-TTL-30 44ma typical
 - LFSWGM-TTL-1.0 50ma typical
 (Current increases with operating frequency)

Logic 1 input:

- Voltage 2V min.; 5.5V max.
- Current 2.4V = 50ua max.
- 5.5V @ 1ma max.

Logic 0 input:

- Voltage8V max.
- Current -2ma max.

Logic 1 Voltage out: 2.4V min.

Logic 0 Voltage out:4V max.

Operating temperature range: 0 to +70°C.

Storage temperature: -55 to +125°C.

* Output frequency will increase or decrease less than .5% for a respective increase or decrease of 5% in supply voltage.

PART NUMBER TABLE

Part Number	Output Frequency	Part Number	Output Frequency
LFSWGM-TTL-30	30 Khz	LFSWGM-TTL-140	140 Khz
LFSWGM-TTL-35	35 Khz	LFSWGM-TTL-150	150 Khz
LFSWGM-TTL-40	40 Khz	LFSWGM-TTL-200	200 Khz
LFSWGM-TTL-45	45 Khz	LFSWGM-TTL-250	250 Khz
LFSWGM-TTL-50	50 Khz	LFSWGM-TTL-300	300 Khz
LFSWGM-TTL-55	55 Khz	LFSWGM-TTL-350	350 Khz
LFSWGM-TTL-60	60 Khz	LFSWGM-TTL-400	400 Khz
LFSWGM-TTL-70	70 Khz	LFSWGM-TTL-450	450 Khz
LFSWGM-TTL-80	80 Khz	LFSWGM-TTL-500	500 Khz
LFSWGM-TTL-90	90 Khz	LFSWGM-TTL-600	600 Khz
LFSWGM-TTL-100	100 Khz	LFSWGM-TTL-700	700 Khz
LFSWGM-TTL-110	110 Khz	LFSWGM-TTL-800	800 Khz
LFSWGM-TTL-120	120 Khz	LFSWGM-TTL-900	900 Khz
LFSWGM-TTL-130	130 Khz	LFSWGM-TTL-1.0	1.0 Mhz

Special modules can be readily manufactured to improve accuracies and/or provide customer specified random frequencies for specific applications.