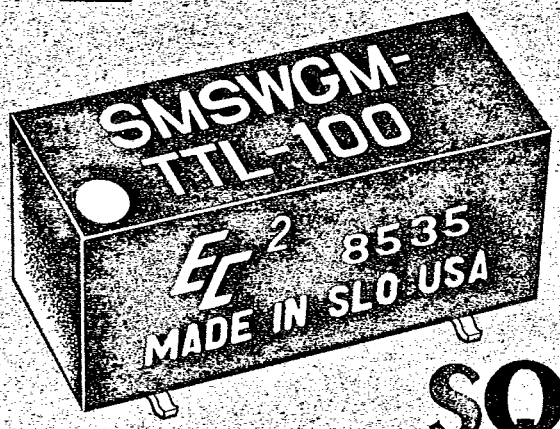
EC2



surface mount

T^2L COMPATIBLE Wee DIP SQUARE WAVE GENERATOR MODULE

- **T^2L input and output**
- **Output wavetrain can be started in sync with random events**
- **SO-14 pin pattern**
- **Wee DIP package (.235 high)**
- **Available in frequencies from 2 Mhz to 100 Mhz**
- **Output frequencies controlled to within ±2%**
- **10 T^2L fan-out capacity**

design notes

The "Wee DIP Series" Square Wave Generator Modules developed by Engineered Components Company have been designed to provide a T^2L level square wave output at frequencies from 2 Mhz to 100 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 occuring after the period of one cycle. (Note: The output buffer will add one propagation delay to all times). 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 3 million hours.

The SMSWGM-TTL is offered in thirty (30) different frequencies from 2 Mhz to 100 Mhz. Output frequencies are controlled to within ±2% and have a temperature coefficient of less than −500 ppm/°C over the operating temperature range of 0 to +70°C.

These "Wee DIP Series" modules are packaged in a SO-14 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.

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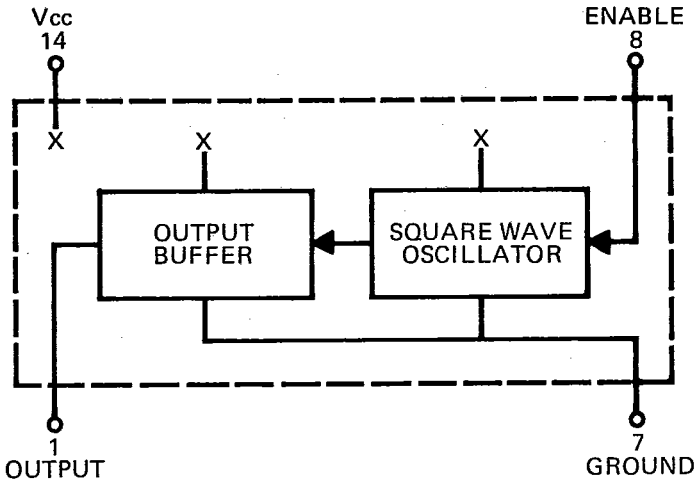
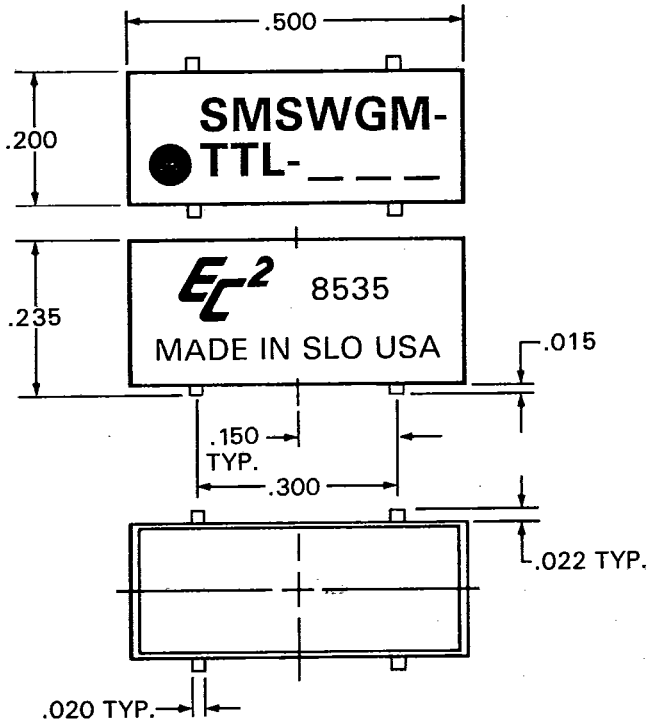
DESIGN NOTES (continued)

Marking consists of manufacturer's logo (EC^2), Federal Supply Code, part number, pin one (1) 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. Vcc 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 T^2L load at the output.

OPERATING SPECIFICATIONS

*V_{CC} supply voltage: . . . . . 4.75 to 5.25V DC

V_{CC} supply current:

SMSWGM-TTL-2 . . . . . 36ma typical

SMSWGM-TTL-100 . . . . . 60ma 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:

Voltage . . . . . .8V 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 1% for a respective increase or decrease of 5% in supply voltage.

PART NUMBER TABLE

Part Number	Output Frequency	Part Number	Output Frequency
SMSWGM-TTL-2	2.0 Mhz	SMSWGM-TTL-13	13.0 Mhz
SMSWGM-TTL-2.5	2.5 Mhz	SMSWGM-TTL-14	14.0 Mhz
SMSWGM-TTL-3	3.0 Mhz	SMSWGM-TTL-15	15.0 Mhz
SMSWGM-TTL-3.5	3.5 Mhz	SMSWGM-TTL-20	20.0 Mhz
SMSWGM-TTL-4	4.0 Mhz	SMSWGM-TTL-25	25.0 Mhz
SMSWGM-TTL-4.5	4.5 Mhz	SMSWGM-TTL-30	30.0 Mhz
SMSWGM-TTL-5	5.0 Mhz	SMSWGM-TTL-35	35.0 Mhz
SMSWGM-TTL-5.5	5.5 Mhz	SMSWGM-TTL-40	40.0 Mhz
SMSWGM-TTL-6	6.0 Mhz	SMSWGM-TTL-45	45.0 Mhz
SMSWGM-TTL-7	7.0 Mhz	SMSWGM-TTL-50	50.0 Mhz
SMSWGM-TTL-8	8.0 Mhz	SMSWGM-TTL-60	60.0 Mhz
SMSWGM-TTL-9	9.0 Mhz	SMSWGM-TTL-70	70.0 Mhz
SMSWGM-TTL-10	10.0 Mhz	SMSWGM-TTL-80	80.0 Mhz
SMSWGM-TTL-11	11.0 Mhz	SMSWGM-TTL-90	90.0 Mhz
SMSWGM-TTL-12	12.0 Mhz	SMSWGM-TTL-100	100.0 Mhz

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