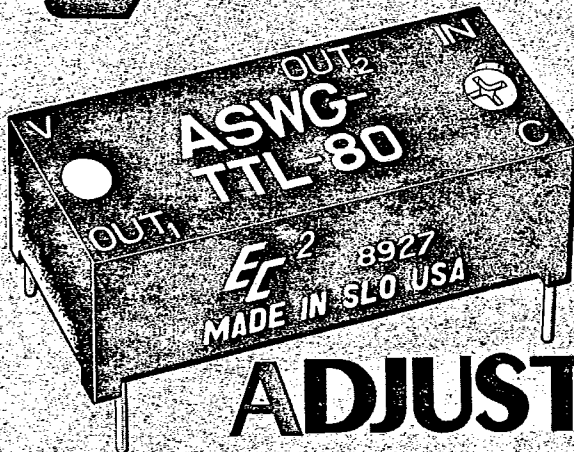


EC-2

T-50-09



ADJUSTABLE SQUARE WAVE GENERATOR

*low profile***T²L****COMPATIBLE**

- T²L input and outputs
- Output wavetrain can be started in sync with random events
- 14-pin DIP package (.260 high)
- Available in frequencies from 5 Mhz to 80 Mhz
- Output frequencies controlled to within $\pm .5\%$
- Frequency trimmable $\pm 1\%$
- 10 T²L fan-out capacity

design notes

The "DIP Series" Adjustable Square Wave Generator modules developed by Engineered Components Company have been designed to provide a T²L level square wave output at frequencies from 5 Mhz to 80 Mhz. The output frequency of these modules can be changed $\pm 1\%$ by adjusting the trimmer accessible on top of the module. 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), OUT₁ will be a constant "1" (high) and OUT₂ will be a constant "0" (low). Whenever the

enable input goes low, OUT₂ goes high immediately. OUT₁ and OUT₂ go low together after a one-half cycle delay and, thereafter run in phase. When the enable input returns to high, OUT₂ is forced low immediately and OUT₁ is forced high one-half cycle later. (Note: The output buffers will add one propagation delay to all times.)

These Adjustable 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 1.5 million hours.

The ASWG-TTL is offered in twenty-four (24) different frequencies from 5 Mhz to 80 Mhz. Output frequencies are controlled to within $\pm .5\%$ and have a temperature coefficient of less than -500 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 Dialyl 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.

EC-2**engineered components company**

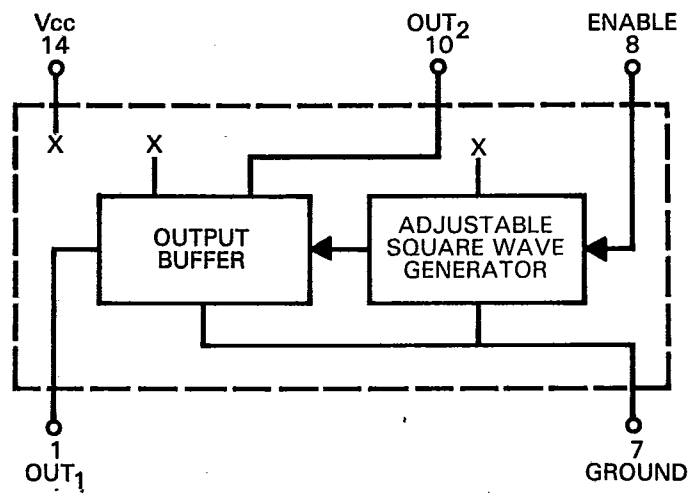
3580 Sacramento Drive, P. O. Box 8121, San Luis Obispo, CA 93403-8121

Phone: (805) 544-3800

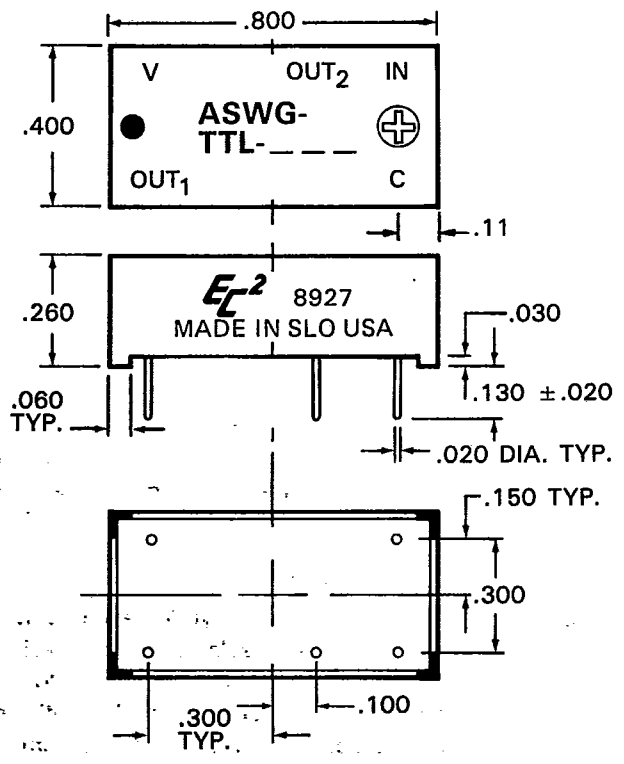
DESIGN NOTES (continued)

Marking consists of manufacturer's 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



OPERATING SPECIFICATIONS

*V_{CC} supply voltage: 4.75 to 5.25V DC
 V_{CC} supply current:
 ASWG-TTL-5 36ma typical
 ASWG-TTL-80 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:

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

PART NUMBER TABLE

Part Number	Output Frequency	Part Number	Output Frequency
ASWG-TTL-5	5.0 Mhz	ASWG-TTL-25	25.0 Mhz
ASWG-TTL-6	6.0Mhz	ASWG-TTL-30	30.0 Mhz
ASWG-TTL-7	7.0Mhz	ASWG-TTL-35	35.0 Mhz
ASWG-TTL-8	8.0Mhz	ASWG-TTL-40	40.0 Mhz
ASWG-TTL-9	9.0Mhz	ASWG-TTL-45	45.0 Mhz
ASWG-TTL-10	10.0Mhz	ASWG-TTL-50	50.0 Mhz
ASWG-TTL-11	11.0Mhz	ASWG-TTL-55	55.0 Mhz
ASWG-TTL-12	12.0Mhz	ASWG-TTL-60	60.0 Mhz
ASWG-TTL-13	13.0Mhz	ASWG-TTL-65	65.0 Mhz
ASWG-TTL-14	14.0Mhz	ASWG-TTL-70	70.0 Mhz
ASWG-TTL-15	15.0Mhz	ASWG-TTL-75	75.0 Mhz
ASWG-TTL-20	20.0 Mhz	ASWG-TTL-80	80.0 Mhz

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.

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