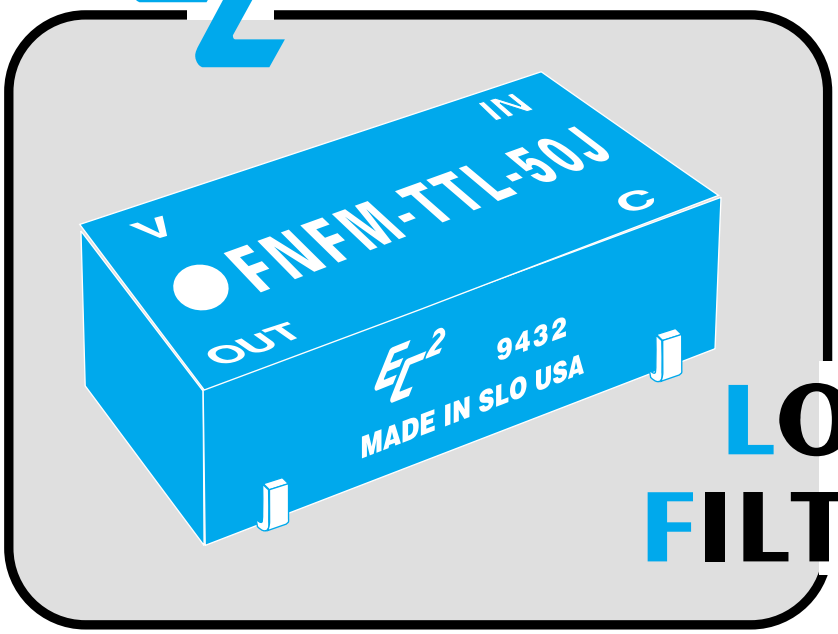

low profile

T²L COMPATIBLE LOGIC NOISE FILTER MODULE

- **T²L FAST input and output**
- **Pulse width detection stable and precise**
- **14-pin DIP package**
- **Leads — thru-hole, J, Gull Wing or Tucked**
- **Available in pulse widths from 5 to 200ns**
- **8 T²L fan-out capacity**

design notes

The "DIP Series" Logic Noise Filter Modules developed by Engineered Components Company has been designed for use in T^2L systems employing data pulses of either a fixed width or a minimum width. The filter module will produce a “1” at the output, without significant change in width, only when a “1” appears at the input for greater than the specified pulse width; all shorter pulses will be suppressed. This operation will effectively eliminate sources of stray noise pulses and should prove particularly effective in eliminating transients created by crosstalk from leading edges of fast rise time pulses.

The FNFM-TTL is offered in 20 pulse widths from 5ns to 200ns for optimum noise pulse rejection in varous systems. Tolerance on pulse width recognition is maintained as shown in the accompanying part number table, when tested under the "Test Conditions" shown. Temperature coefficient is less than ±800ppm/^{0}C over the operating temperature range of 0 to +70^{0}C.

These noise filter modules are of hybrid construction utilizing the proven technologies of active integrated circuitry and of passive networks utilizing capacitive, inductive and resistive elements. The MTBF on these modules, when calculated per MIL-HDBK-217 for a 50^{0}C ground fixed environment, is in excess of 3.5 million hours.

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 of the thru-hole lead version and lead design of the surface mount versions provide positive standoff from the printed circuit board to permit solder-fillet formation and flush cleaning of solder-flux residues for improved reliability.

Marking consists of the manufacturer's name, logo (EC^2), 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.

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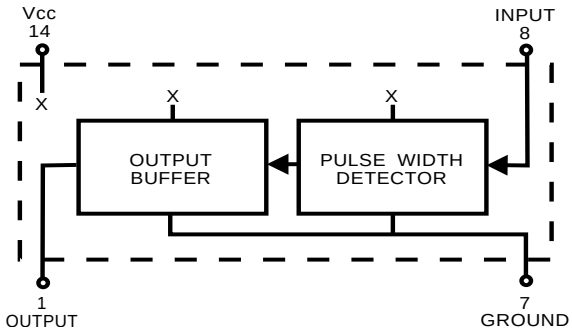
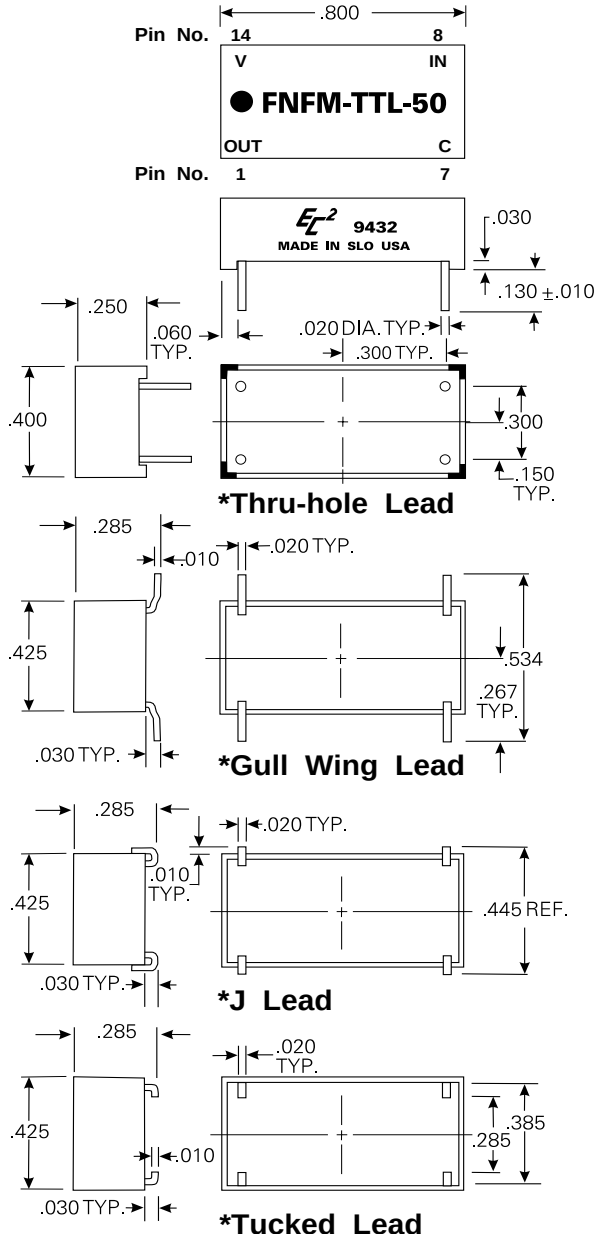
BLOCK DIAGRAM IS SHOWN BELOW



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 FAST toggle-type positive input pulse and one FAST T^2L load at the output.

Ø 4. All units are tested to verify suppress and pass pulse widths, as tabulated in the part number table.

OPERATING SPECIFICATIONS

V_{CC} supply voltage:	4.75 to 5.25V DC
V_{CC} supply current:	
Constant "0" in	30mA typical
Constant "1" in	7mA typical
Logic 1 Input:	
Voltage	2V min.; V_{CC} max.
Current	2.7V = 20uA max.
	5.5V = 1mA max.
Logic 0 Input:	
Voltage	.8V max.
Current	–.6mA max.
Logic 1 Voltage out:	2.7V min.
Logic 0 Voltage out:	.5V max.
Fan out	8 T^2L loads
Operating temperature range:	0 to +70°C
Storage temperature:	–55 to +125°C.

Pulse width suppression times increase or decrease approximately 2% for a respective increase or decrease of 5% in supply voltage.

PART NUMBER TABLE

* **Suffix Part Number with G (for Gull Wing Lead), J (for J Lead), F (for Thru-hole Lead) or T (for Tucked Lead). Examples: FNFM-TTL-10G (Gull Wing), FNFM-TTL-25J (J Lead), FNFM-TTL-75F (Thru-hole Lead) or FNFM-TTL-80T (Tucked Lead)**

TIMES AND TOLERANCES (in ns)

PART NO.	Ø Pulse Widths		
	Nominal	Suppress	Pass
FNFM-TTL-5	5	≤4	≥6
FNFM-TTL-10	10	≤9	≥11
FNFM-TTL-15	15	≤14	≥16
FNFM-TTL-20	20	≤19	≥21
FNFM-TTL-25	25	≤24	≥26
FNFM-TTL-30	30	≤29	≥31
FNFM-TTL-35	35	≤34	≥36
FNFM-TTL-40	40	≤39	≥41
FNFM-TTL-45	45	≤43.5	≥46.5
FNFM-TTL-50	50	≤48.5	≥51.5
FNFM-TTL-60	60	≤58	≥62
FNFM-TTL-70	70	≤68	≥72
FNFM-TTL-75	75	≤73	≥77
FNFM-TTL-80	80	≤78	≥82
FNFM-TTL-90	90	≤88	≥92
FNFM-TTL-100	100	≤98	≥102
FNFM-TTL-125	125	≤123	≥127
FNFM-TTL-150	150	≤147	≥153
FNFM-TTL-175	175	≤172	≥178
FNFM-TTL-200	200	≤196	≥204

The output of the module will remain at state "0" for any transient input pulses shorter than suppress times and will change to state "1" for pulses longer than pass times. Input pulse width is measure at the +1.5 level.

Special modules can be readily manufactured to provide customer specified times for specific applications.