Avantek Products

Threshold Detector 10 to 2000 MHz

Technical Data

UTD-2002

Features

- **Externally Set Threshold**
- **TTL Output**
- **Low VSWR**
- **20 dB Threshold Range**

Applications

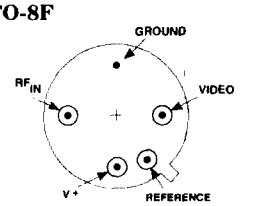
- **Specifically Designed for System Built-in Test**
- **Built for Retrofitting**
- **Channel RF Activity Monitoring**

Description

The UTD-2002 is a sensitive microwave threshold detector which provides efficient and accurate RF level measurement at critical system points. It contains a Schottky diode detector, comparator, and a temperature compensated voltage reference assembly. The unit is built with chip and wire construction, on a thin-film substrate for small size and ruggedness.

Pin Configuration

TO-8F



(See Section 5 for detailed case drawings.)

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Maximum Ratings

Parameter	Maximum
DC Voltage	+17 V
Continuous RF Input Power	+15.0 dBm
Operating Case Temperature	–55°C to +125°C
Storage Temperature	–62°C to +150°C
"R" Series Burn-In Temperature	+125°C
DC Voltage Reference	+12 V

Weight: (typical) 2.1 grams

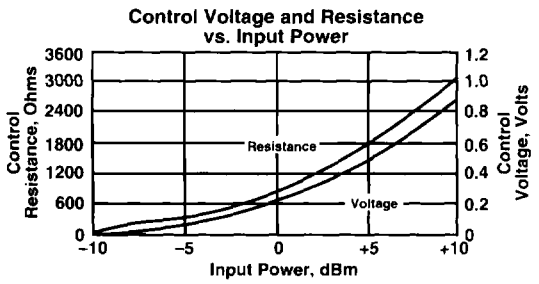
Electrical Specifications

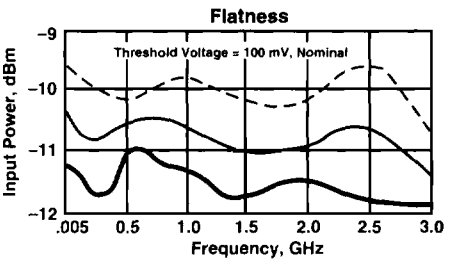
(Measured in 50 Ω system @ +15 VDC nominal unless otherwise noted)

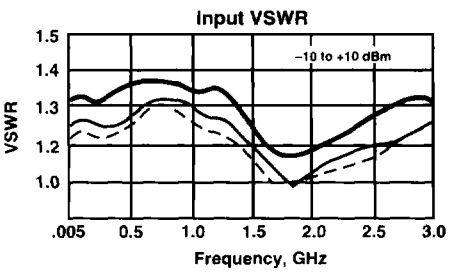
Symbol	Characteristic	Typical	Guaranteed Specifications		Unit
		T_C = 25°C	T_C = 0 to 50°C	T_C = −55 to +85°C	
—	Frequency (Min.)	10-2000	10-2000	10-2000	MHz
—	Input Flatness (Max.), P_{IN} = −10 to +10 dBm	±0.5	±0.7	±1.0	dB
—	Input Operating Range	−10 to +10	−10 to +10	−10 to +10	dBm
—	Input VSWR (Max.)	1.3:1	1.7:1	2.0:1	—
—	Threshold Temperature Stability (Max.)				
	@ −10 dBm Input Power	—	±1.0	±1.5	dB
	@ 0 dBm Input Power	—	±0.7	±1.0	dB
	@ +10 dBm Input Power	—	±0.5	±0.7	dB
—	Threshold Control Voltage/Resistance				
	@ −10 dBm Input Power	90 mV/300 Ω	—	—	Ω
	@ 0 dBm Input Power	280 mV/900 Ω	—	—	Ω
	@ +10 dBm Input Power	900 mV/2900 Ω	—	—	Ω
—	Threshold Hysteresis (Max.)				
	Resistance Control	1.0	—	—	dB
	Voltage Control	0.1	—	—	dB
—	Control Terminal Current	0.3	—	—	mA
—	Output Compatibility	TTL	TTL	TTL	—
—	Output at P_{IN} Threshold (Min.)	2.7	2.7	2.7	V
—	Output Short Circuit Current (Min.)	3.0	3.0	3.0	mA
—	Output Sink Current (Min.), V_0 = 0.7 V	2.0	2.0	2.0	mA
—	Output for Input Power Change > 3 dB above CW Threshold				
	C_L = 15 pF	—	—	—	—
	Rise Time	30	—	—	ns
	Fall Time	80	—	—	ns
	Propagation Delay	1000	—	—	ns
—	Supply Voltage				
	As Specified	+15	—	—	VDC
	Operational	+11 to +16	—	—	VDC
—	Supply Current @ +15 Volts	12	15	15	mA

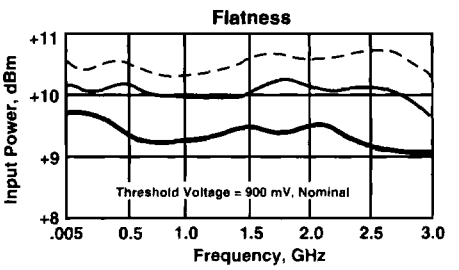
Typical Performance @ 25°C

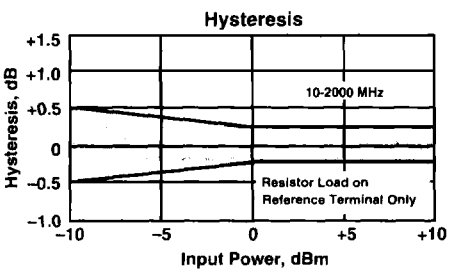
Key: +25°C ——
+85°C – – –
-55°C ——

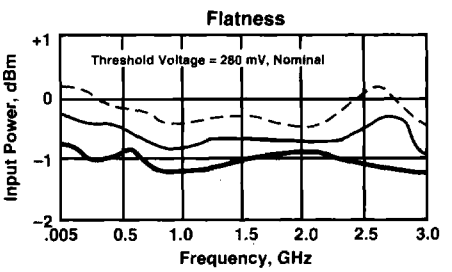












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