

DAQ6101 0.1 TO 6.0 GHz ANALOG DETECTOR

Typical Values @ +25° C	DAQ6101
Wide Frequency Range	0.1 to 8.0 GHz
Wide Power Range	-30.0 to 5.0 dBm
Temperature Stability	± 0.25 dB
Flatness	± 0.5 dB
Low VSWR	1.5:1
Single or Dual Power Supply	
Cougar Q Package	

SPECIFICATIONS

Parameter	Typical	Guaranteed*	
		0 to 50° C	-55 to +85° C
Frequency (Min.)	0.1-8.0 GHz	0.1-6.0 GHz	0.1-6.0 GHz
Input Power Range (Min.)	-30 to 5 dBm	-25 to 0 dBm	-25 to 0 dBm
VSWR (Max.)	1.5:1†	2.0:1†	2.0:1†
Sensitivity, Vout (Min.)	120 mV†	90 mV†	90 mV†
Power Flatness (Max.)	±0.5 dB^	±0.75 dB^	±0.75 dB^
Temperature Stability (Max.)	±0.25 dB†	±0.5 dB†	±0.5 dB†
Output Offset Voltage, no RF (Max.)	±0.5 mV	±2.0 mV	±2.0 mV
1 dB Square Law Departure	-10 dBm	—	—
Tangential Sensitivity	-45 dBm^	—	—
Pulse Response, Pin = -15 dBm	1.5 µsec‡	—	—
Pulse Response, Pin = 0 dBm	3.0 µsec‡	—	—
Supply Current, no RF	2 +mA, 2 -mA	—	—
Supply Current, Pin = +5 dBm	10 +mA, 2 -mA	—	—

* Measured in a 50-ohm system at ±5 Vdc, 2 KΩ/150 pF unless otherwise specified.
 † Pin = -15 dBm. ^ Vout = 100 mV. ^ 3 dB NF, 1 MHz Bandwidth. ‡ 50% RF to 10 or 90% Video.

MAXIMUM RATINGS

DC Voltage (no RF)	±18 V
Continuous RF Input Power	+14.0 dBm (±5 Vdc)
Operating Case Temperature	-55° C to +100° C
Storage Temperature	-65° C to +125° C
Burn-In Temperature	100° C
Detector Thermal Resistance ¹ (θjc)	3500° C/Watt
Temperature Rise @ 0 dBm (Tjc)	3.5° C
Temperature Rise @ +5 dBm (Tjc)	35° C

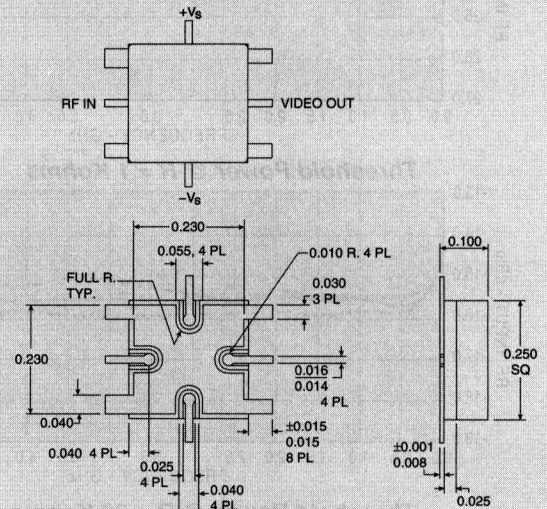
¹ Thermal resistance is based on total power dissipation. Ratings based on +25° C.

APPLICATIONS

- This unit is DC coupled and employs a RF choke at the input (DC short). If the application calls for the input to sink current there will approximately be an additional 1 mV of output offset voltage for each 3 mA of current. Sink current should be limited to 100 mA max to avoid choke burnout.
- For higher supply voltages, up to ±15 volts, the positive supply pin must include a series current limiting resistor, $R_s = (V_s - 5)/0.01$. (e.g.: $V_s = 15V$, $R_s = 1K$)
- Average power detection is obtained at power levels below approximately -13 dBm.
- For best pulse response both supply pins should be bypassed with an additional 1.0 µF capacitor. The unit contains 0.01 µF internal capacitors.

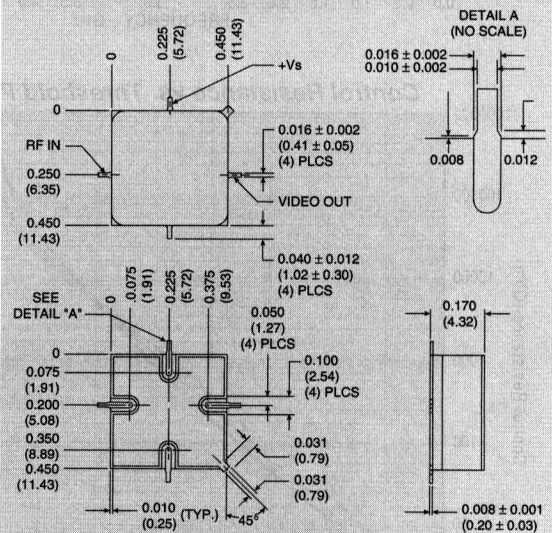
DAQ6101

1/4 Inch SMT0-8 for Detectors



DAS6101

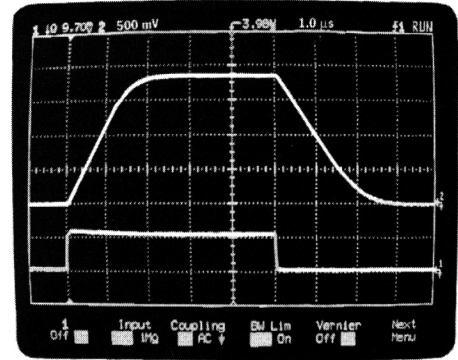
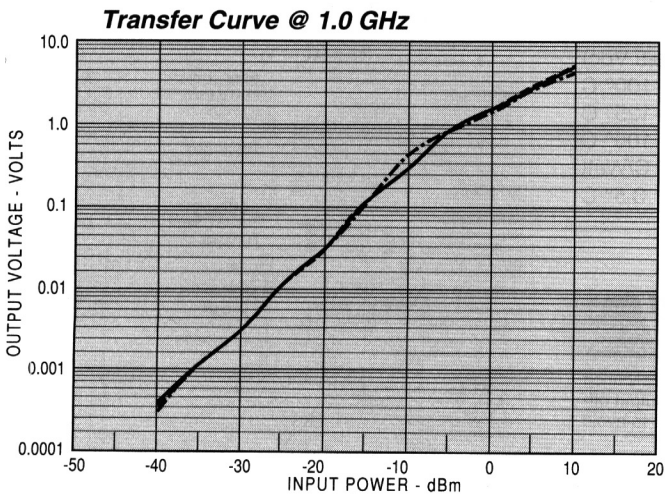
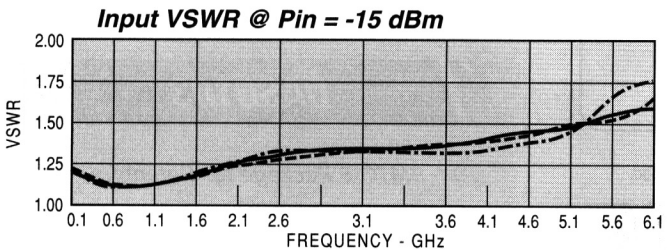
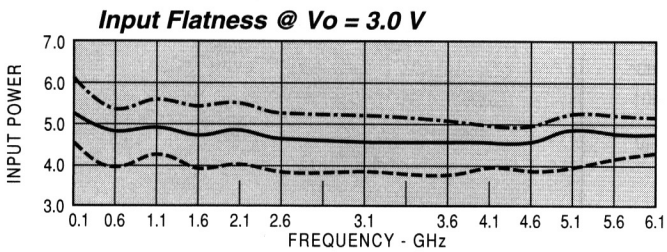
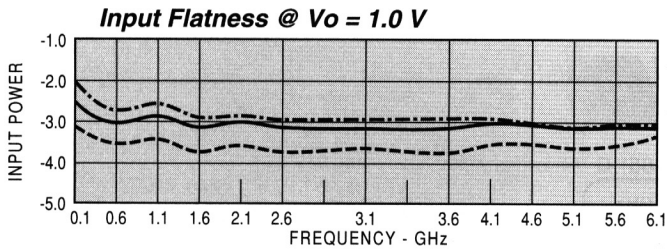
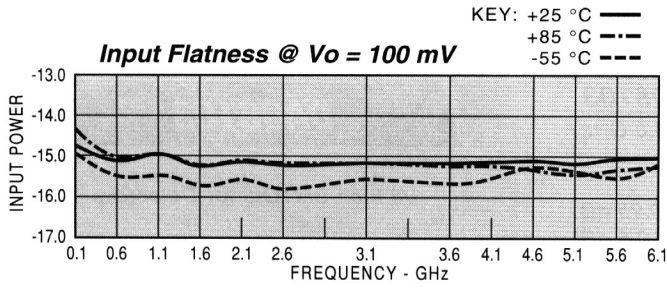
SMT0-8 Package for Detectors



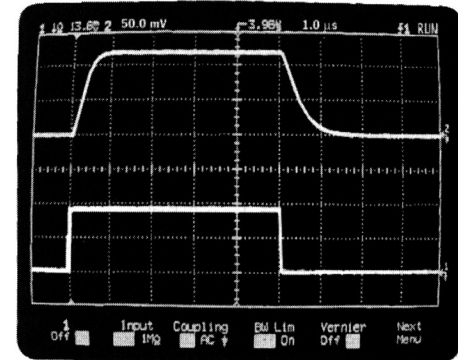
DIMENSIONS ARE IN INCHES (MILLIMETERS)

TYPICAL PERFORMANCE

TYPICAL PERFORMANCE



Pulse Response @ $P_{in} = 0\text{ dBm}$



Pulse Response @ $P_{in} = -15\text{ dBm}$