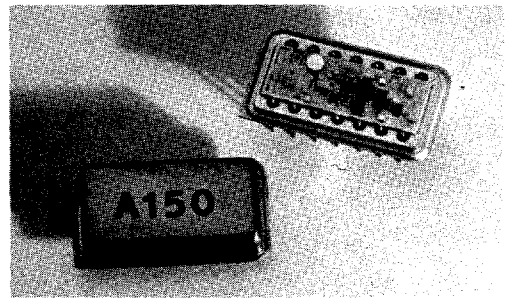
PULSE AMPLITUDE DISCRIMINATOR

A150



FEATURES

- Low Power 17mW
- Repetition Rate >4 MHz
- Tunnel Diode, Snap Action Switching
- Radiation Hard (10^6 Rads Si)
- High Reliability Screening

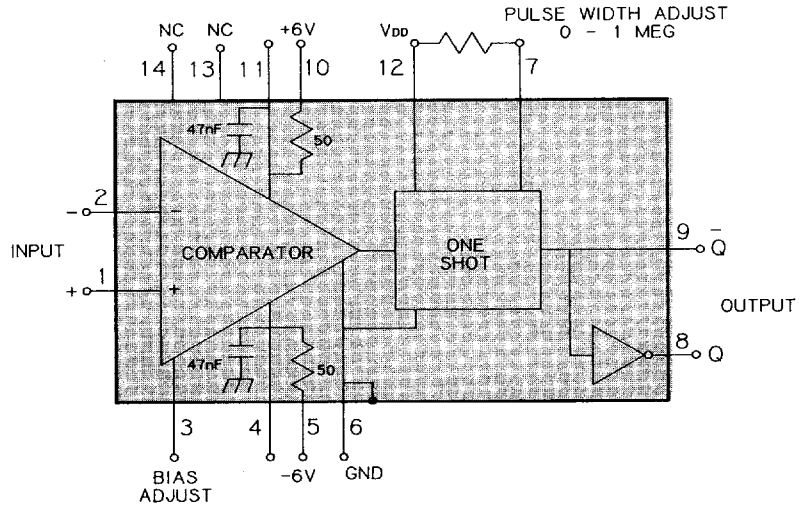
APPLICATIONS

- Space Instrumentation
- Portable Instrumentation
- Nuclear Instrumentation

The A150 is a high performance hybrid pulse amplitude discriminator developed for use in precision pulse spectroscopy.

Its low power dissipation (17mW), high speed (>4 MHz), and radiation hardness (10^6 Rads), make it ideal for space flight use. The A150 is packaged in a standard 14-pin hybrid DIP.

A150 CONNECTION DIAGRAM



PIN	FUNCTION
1	Non-Inverting Input
2	Inverting Input
3	Bias Adjust (Resistance to Pin 4 reduces operating current)
4	– Vs Direct
5	– Vs through 50 ohms
6	Case and Ground
7	Pulse Width Adjust (must be connected to pin 12 either directly for minimum pulse width, or through a resistor).

PIN	FUNCTION
8	Output (positive)
9	Output (negative)
10	+ Vs through 50 ohms
11	+ Vs Direct
12	VDD bias for output CMOS one-shot
13	N.C.
14	N.C.

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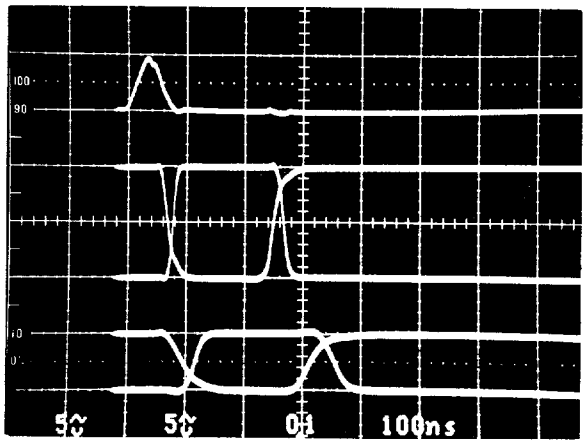
Absolute Maximum Ratings	
Supply Voltage V_S	± 8V
CMOS Supply V_{DD}	+ 18V
Input Voltage	± V_S
Operating Temperature Range	– 55°C to + 110°C
Storage Temperature	– 65°C to + 110°C
Lead Temperature Range (Soldering, 10 sec.)	300°C

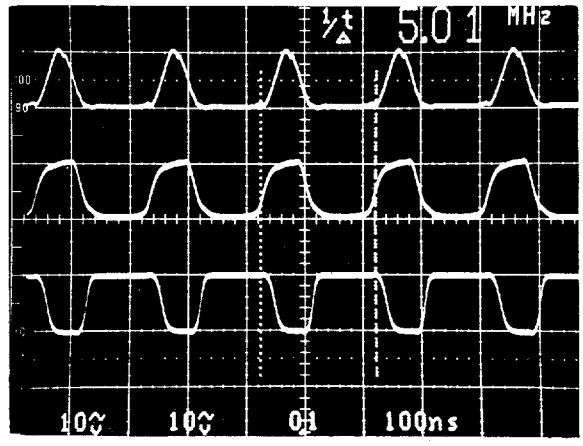
Electrical Characteristics V_S = ± 6V, V_{DD} = + 10V, T_A = + 25°C

Parameter	Symbol	Min	Typ	Max	Units
Output Pulse Width — Positive	T_{WP}	160	195	210	ns
Output Pulse Width — Negative	T_{WN}	150	185	200	ns
Output Pulse Delay — Positive	T_{DP}		70	120	ns
Output Pulse Delay — Negative	T_{DN}		60	80	ns
Input Threshold Offset	V_{OS}		± 1	± 5	mV
Supply Voltage	V_S	± 4.5	± 6	± 8	V
Supply Current	I_S	± 1.3	± 1.5	± 1.7	mA
CMOS Supply	V_{DD}	+ 4	+ 10	+ 18	V
Power Consumption	P_D		17		mW
Input Offset Drift	TCVos		– 30	± 10	µV/°C
Minimum Pulse Detected	VTmin		15		mV

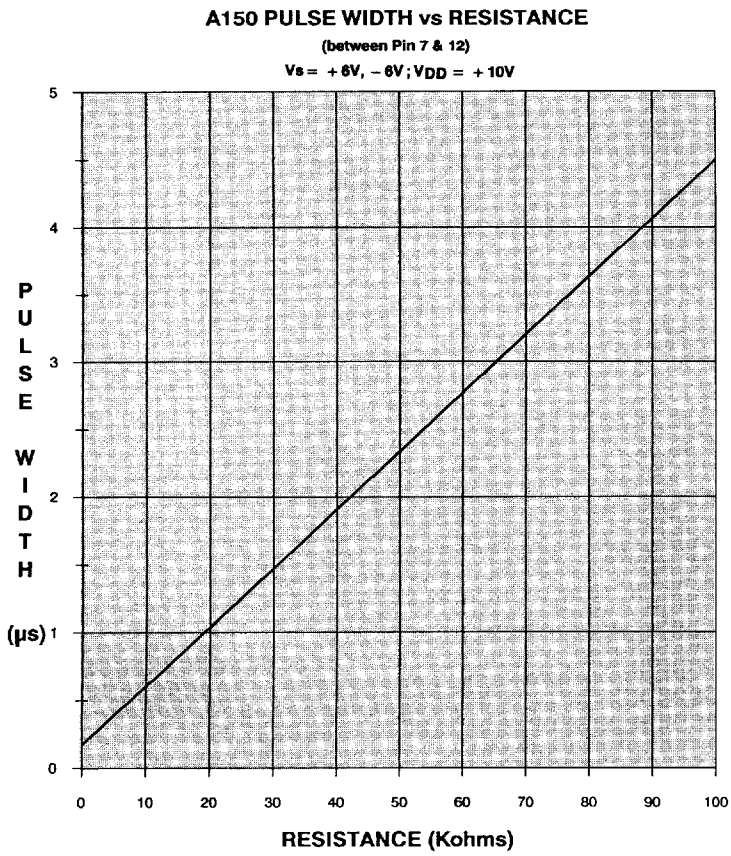
A-150 OUTPUT WAVEFORMS

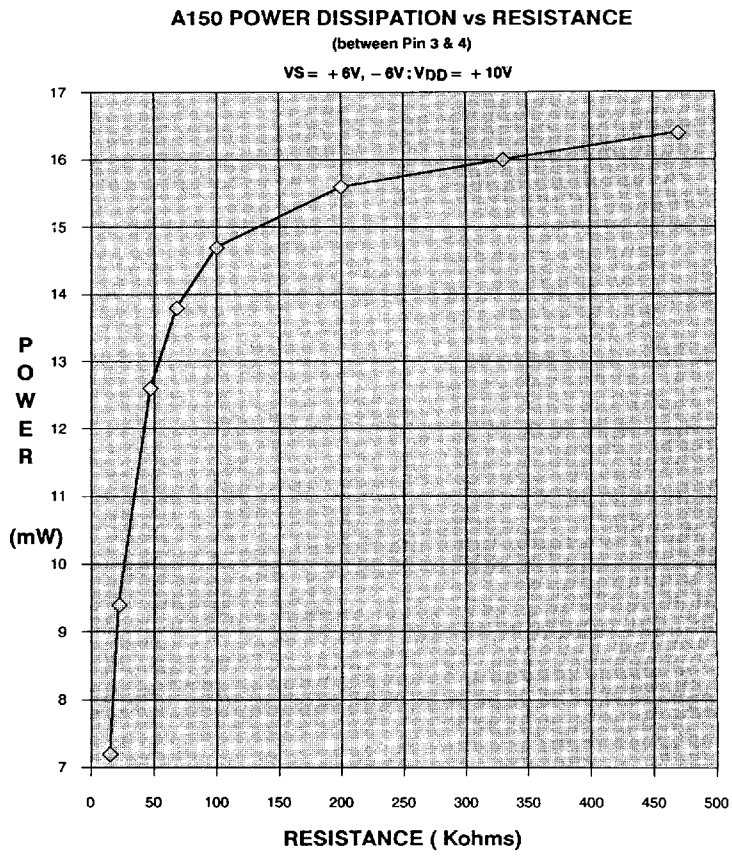


Upper: Input Pulse
Middle: Outputs at V_{DD} = + 10V
Lower: Outputs at V_{DD} = + 5V

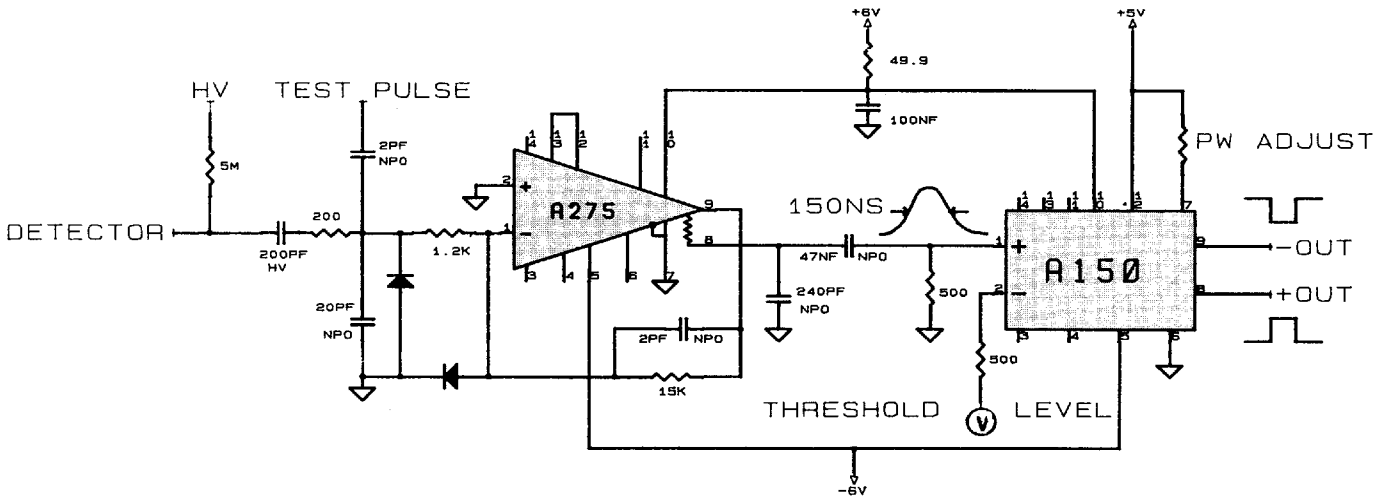


Upper: Input Pulse at 5 MHz
Middle: Pin 9 Output at V_{DD} = + 10V
Lower: Pin 8 Output at V_{DD} = + 10V





APPLICATION NOTES



LOW LEVEL DISCRIMINATOR WITH VOLTAGE CONTROLLED THRESHOLD

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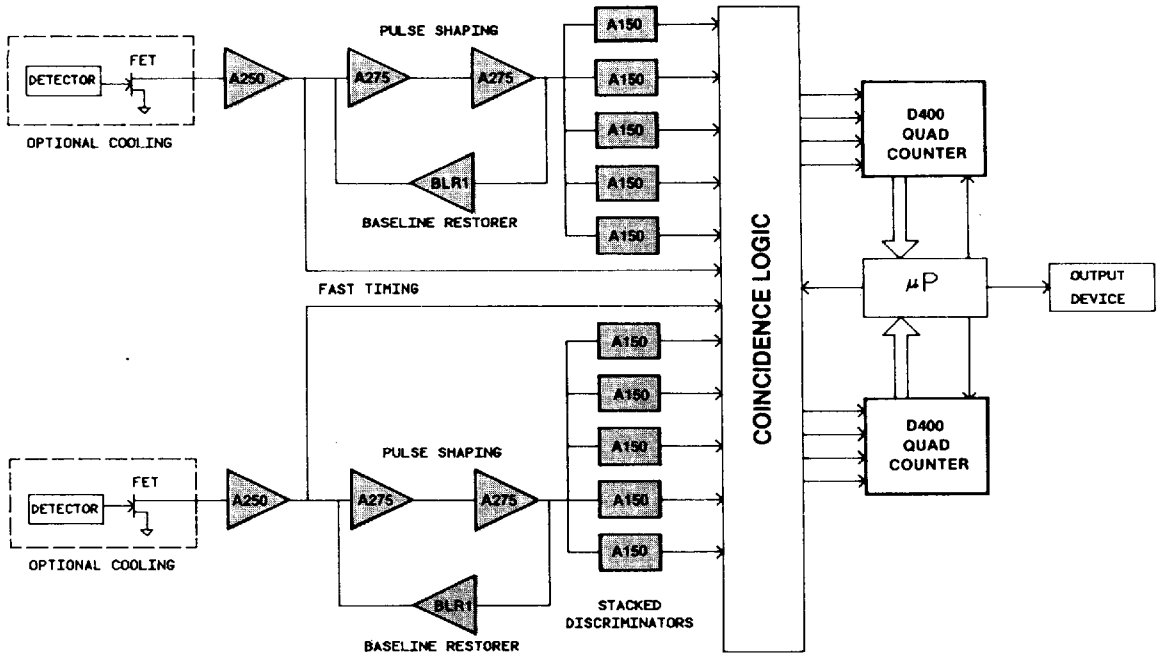
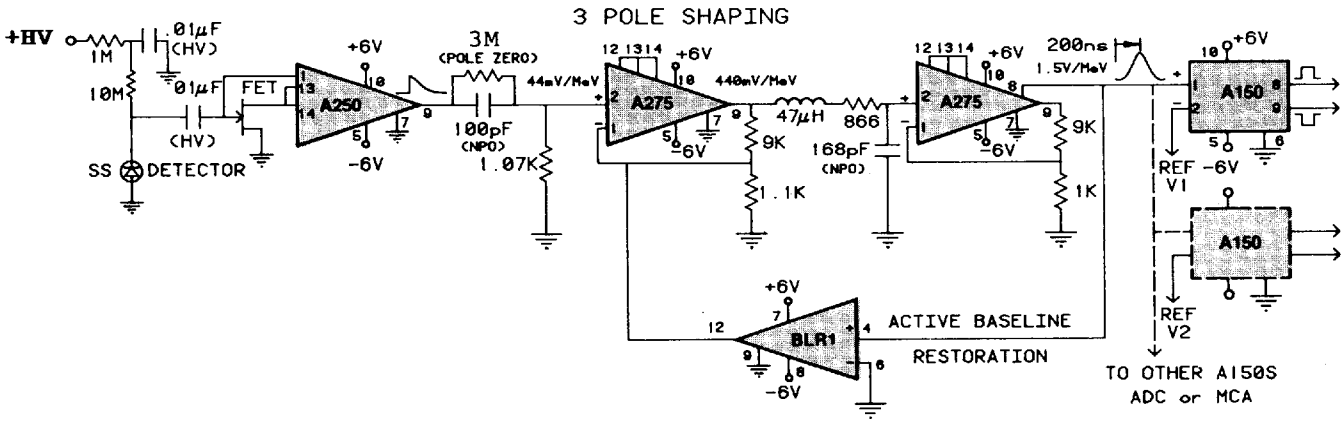
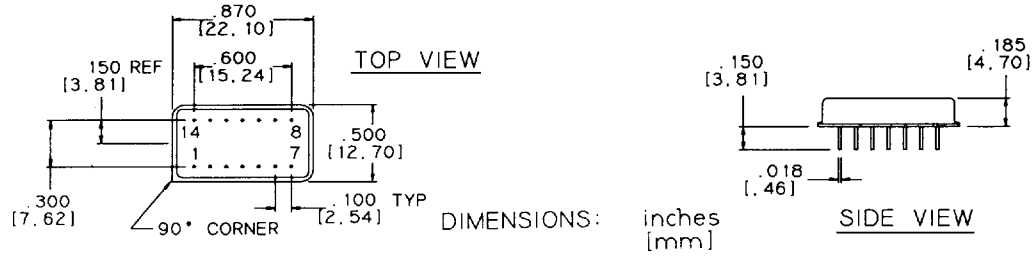
APPLICATION NOTES



A TWO DETECTOR TELESCOPE SYSTEM



A COMPLETE STATE-OF-THE-ART PULSE PROCESSING SYSTEM



14 PIN DUAL IN-LINE HYBRID PACKAGE

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