MODEL IA-16 JFET INTEGRATOR

PRODUCT DESCRIPTION

The IA-16 is a sixteen channel integrating amplifier module designed for use with infrared detectors operating in the temperature range from 1 to 45 K. It consists of a hybrid circuit containing balanced JFET integrating amplifiers with a voltage gain of 0.80, an input capacitance of 4 pf and a read noise of less than 40 electrons. The charge compensated JFET reset switch provides for rapid and accurate reset of the input to ground potential and the device is designed for continuous non-destructive read-out by sampling the output. Power dissipation, including heater power, is less than 1.6mW at a temperature of 4K.

An internal heater maintains the operating temperature of the JFETs independently of the environmental temperature. Thermal isolation is achieved by supporting the hybrid assembly on metalized low conductivity rods. The suspended mass is low which leads to short thermal equilibrium times and a high strength-to-weight ratio.

SPECIFICATIONS

NO. OF CHANNELS	16
PACKAGE	MSI3R44M1 44 lead flatpack Weepage path: 0.0135 inch diam baffled hole in top surface of the flatpack.
NO. OF ACTIVE LEADS	39
OPERATING TEMPERATURE	1.2K to 45K
TOTAL POWER DISSIPATION	<1.6mW
SUPPLY VOLTAGES	± 1.5 V (nominal)
OFFSET VOLTAGE	- 10 mV to 60 mV
INPUT CAPACITANCE	4pf (nominal)
GATE CURRENT	<10 electrons/sec
READ NOISE	<30 electrons typical, 40 electrons worst case for integrations times of 2 to 10 seconds.
RESET PULSE AMPLITUDE	1.2 - 1.9 V (nominal: exact values provided for each unit) 5 V (max for device safety)
COMP. PULSE AMPLITUDE	-10 V (max for device safety)
SOLDERABILITY	Wires can be soldered to pins using a low temperature iron with low temperature indium solder.
STORAGE CONDITIONS	Vacuum of <500 Torr Backfill with dry nitrogen gas before removing from vacuum.
BAKE-OUT CONDITIONS	Vacuum bake-out at 80 °C