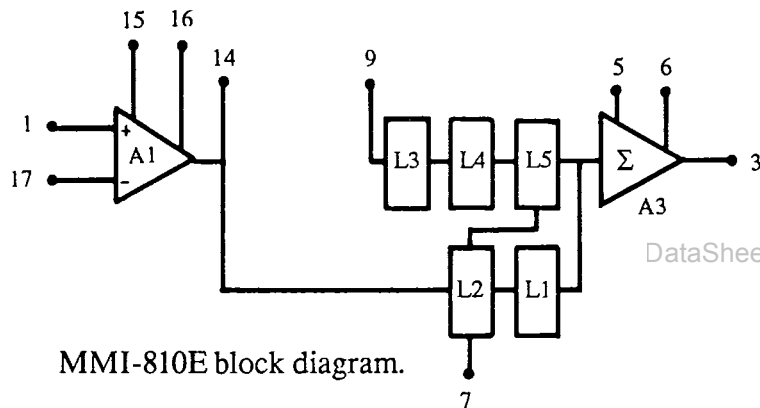
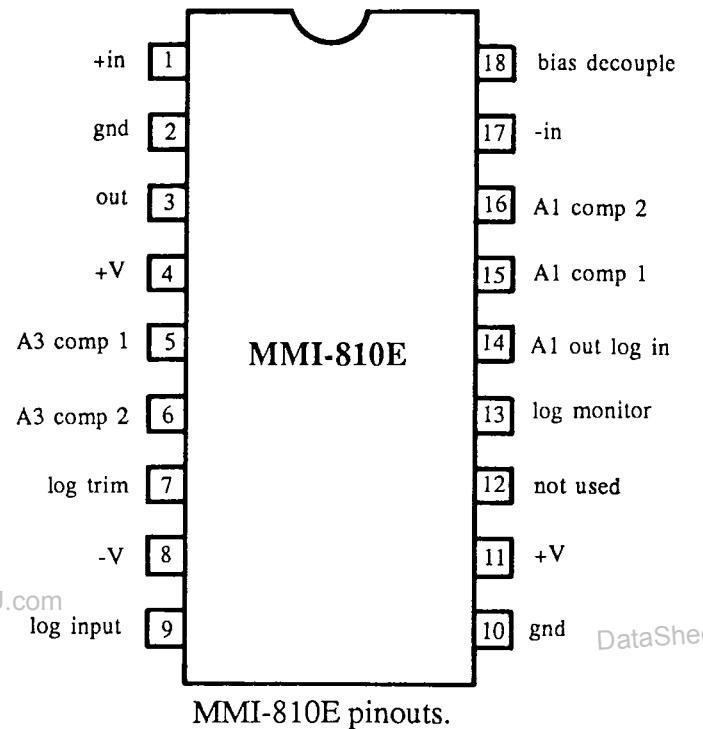


MMI-810E LOG VIDEO AMPLIFIER INTEGRATED CIRCUIT

The MMI-810E is a monolithic, wide band, low noise log amplifier intended to be utilized for frequencies ranging from DC to 10 MHz. It provides both linear and log outputs over a large dynamic range, and has a 10 MHz bandwidth over its entire dynamic range. It is available in either an 18 pin dual in line package or unpackaged for hybrid applications.

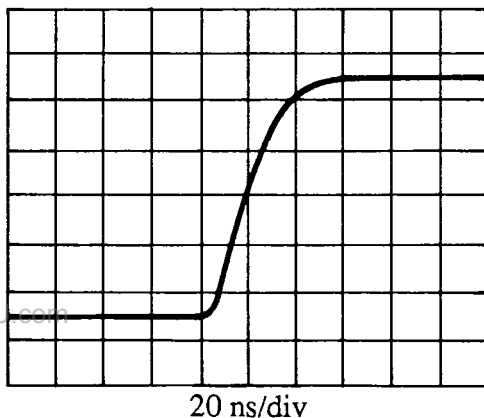


MMI-810E block diagram.

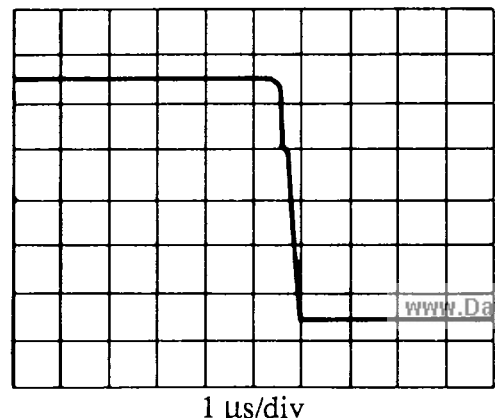


MMI-810E pinouts.

MMI-810E rise time in a typical system configuration.



MMI-810E recovery time in a typical system configuration.



MMI-810E SPECIFICATIONS

Description	Value	Unit
Video Bandwidth	DC to 10	MHz
Rise Time	<35	ns
Video Dynamic Range	105	dB
Logging Range (1)	0.6 to 6000	mV
Linearity	80	dB
Logging Slope (2)	±1	dB
Delay Time	25	mV/dB
Recovery Time	<40	ns
Tangential Signal Sensitivity	<500	ns
Output Voltage Range	30	μV
Output Load (min) (3)	0 to 4	V
Duty Cycle (4)	93	ohms
Operating Temperature (5)	100	%
Output Drift over Temperature (6)	-54 to +125	°C
Input Drift over Temperature (7)	0.04	dB/°C
Power Supply Required	8	μV/°C
+ Voltage at 70mA	+7.5	V
- Voltage at 40mA	-6.5	V

Due to the square law characteristics of the detector, when used with an RF detector each dB at RF is equivalent to 2 dB of video.

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The MMI-810E is also available screened to MIL-STD-883 requirements.

Notes:

- (1) When used with a detector, the logging range can be increased to approximately 45 dB (at RF) by adding the detector signal directly to the output amplifier.
- (2) The logging slope is adjustable.
- (3) The MMI-810E can use an outboard NPN transistor to drive lower loads or for higher output swing.
- (4) The duty cycle is 100% for DC coupled applications: there is a negligible output amplitude shift (less than 0.2 dB) at any duty cycle.
- (5) The MMI-810E must have a heat sink for operation at high temperature.
- (6) This drift can easily be compensated in two ways:
 - a) On a DC coupled unit, using a sensistor to change the DC offset versus temperature; or
 - b) A change in gain preceding the chip.
- (7) The input drift can be compensated by applying an opposite drift to the input. This can be accomplished by using a sensistor network or a diode.
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 - a) On a DC coupled unit, using a sensistor to change the DC offset versus temperature; or
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