

**MC1440F,G,L,P (0 to +75°C)**  
**MC1540F,G,L (-55 to +125°C)**

... consisting of a wideband differential amplifier, a dc restoration circuit which also incorporates facilities to externally adjust the threshold, and an output gate which is strobed from saturated logic. It is designed to detect bipolar differential signals derived by a core memory with cycle times as low as 0.5  $\mu$ s. MC1440 and MC1540 are identical circuits specified over different temperature ranges.

- **Differential Threshold Characteristics:**  
 Adjustable Threshold — 10-25 mV  
 Nominal Threshold — 17 mV @  $V_b = -6$  V  
 Input Offset Voltage — 1 mV  
 Threshold Drift — +10 V/°C
- **Fast Response Time — 20 ns**
- **Short Recovery Time**  
 50 ns @  $e_{in} = 1.8$  V Common Mode  
 50 ns @  $e_{in} = 400$  mV Differential Mode

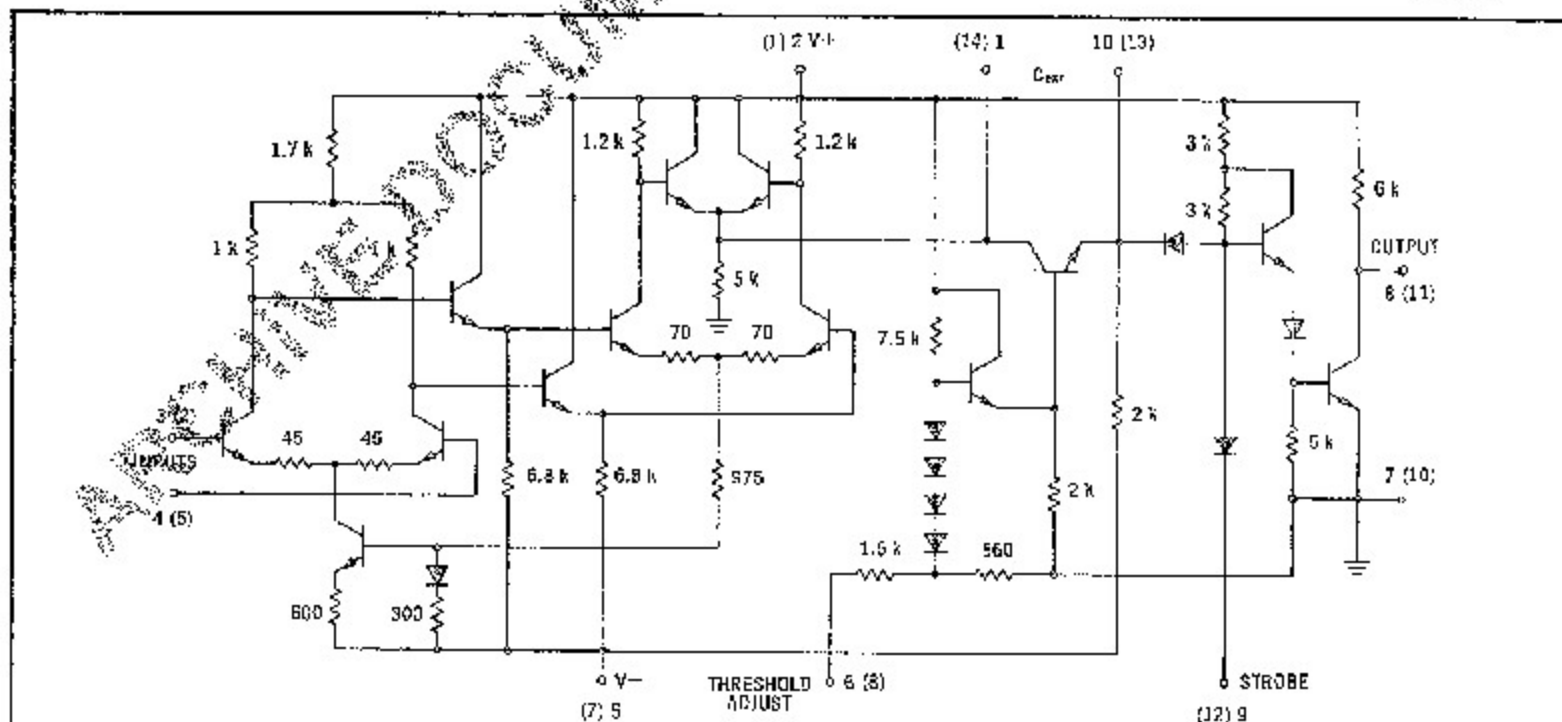
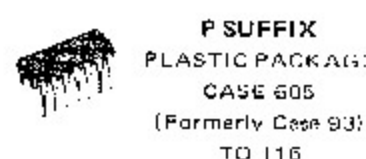
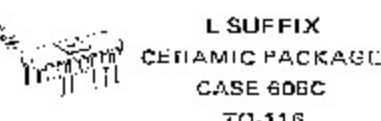
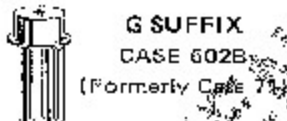
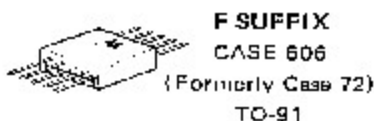
**MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$  UNLESS OTHERWISE NOTED)

RATING	SYMBOL	VALUE	UNIT	
Power Supply Voltage	$V^+$	-10	Vdc	
	$V^-$	-10	Vdc	
Differential Input Signal	$V_{in}$	$\pm 5.0$	Volts	
Common Mode Input Swing	CMV <sub>r</sub>	$\pm 5.0$	Volts	
Peak Load Current	I <sub>L</sub>	25	mA	
Power Dissipation (Package Limitation)	P <sub>b</sub>	Metal Can	600	mW
		Derate above 25°C	4.0	mW/°C
		Flat Package	500	mW
		Derate above 25°C	8.3	mW/°C
		Ceramic Dual In-Line Pkg.	625	mW
Derate above 25°C	5.0	mW/°C		
Plastic Package	415	mW		
Derate above 25°C	3.3	mW/°C		
Operating Temperature Range	MC1440G, F, P, L MC1540F MC1540G, L	$T_A$	0 to +75	°C
			-55 to -100	
			-55 to +125	
Storage Temperature Range	$T_{stg}$	-65 to +150	°C	

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$ )

TYPE	$V^-$ (Vdc)	$V^+$ (Vdc)	$V_{th}$ (mV)	$V_{th}$ (V/V)	$V_{OH}$ (Vdc)	$V_{OL}$ (Vdc)	$t_{pd}$ (ns)	$t_r$ (ns)	CMV <sub>in</sub> (Vpk)	TCV <sub>th</sub> ( $\mu$ V/°C)
MC1540	+6.0	-6.0	17	85	5.9	0.35	10	20	$\pm 5.0$	10
MC1440	+6.0	-6.0	17	85	5.8	0.4	10	20	$\pm 5.0$	10

\*Input Offset Voltage = 1.0 mV;  $V_{th}$  is adjustable.



Number of terminal ends represents pin number for devices in flat package and metal can. Number in parenthesis represents pin number for dual in-line ceramic and plastic packages.