

SENSE AMPLIFIERS

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 μ s. MC1440 and MC1540 are identical circuits specified over different temperature ranges.

- Differential Threshold Characteristics:
 - Adjustable Threshold — 10-25 mV
 - Nominal Threshold — 17 mV @ $V_6 = -6$ 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^+ V^-	+10 -10	Vdc Vdc
Differential Input Signal	V_{in}	± 5.0	Volts
Common Mode Input Swing	CMV_{in}	± 5.0	Volts
Peak Load Current	I_L	25	mA
Power Dissipation (Package Limitation)	P_D		
Metal Can		680	mW
Derate above 25°C		4.6	mW/°C
Flat Package		500	mW
Derate above 25°C		3.3	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 -55 to +100 -55 to +125	°C
Storage Temperature Range		T_{stg}	-65 to +150
			°C

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

TYPE	V^+ (Vdc)	V^- (Vdc)	V_{in}^* (mV)	A_V (V/V)	V_{OH} (Vdc)	V_{OL} (Vdc)	t_{pd} (ns)	t_r (ns)	CMV_{in} (Vpk)	TCV_{th} (μ V/°C)
MC1540	+6.0	-6.0	17	85	5.9	0.35	10	20	± 5.0	10
MC1440	+6.0	-6.0	17	85	5.8	0.4	10	20	± 5.0	10

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

