

MCCF1558 MCCF1458

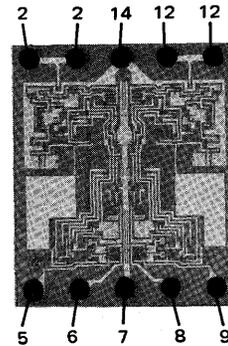
**DUAL MC1741
INTERNALLY COMPENSATED, HIGH PERFORMANCE
MONOLITHIC OPERATIONAL AMPLIFIER FLIP-CHIP**

... designed for use as a summing amplifier, integrator, or amplifier with operating characteristics as a function of the external feedback components.

The MCCF1558 and MCCF1458 employ phosphosilicate passivation that protects the entire die surface area, including metalization interconnects. The bumps are 95-5 solder on a chrome-copper-gold base. The interconnecting metalization is evaporated aluminum.

- No Frequency Compensation Required
- Short-Circuit Protection
- Wide Common-Mode and Differential Voltage Ranges
- Low-Power Consumption
- No Latch Up

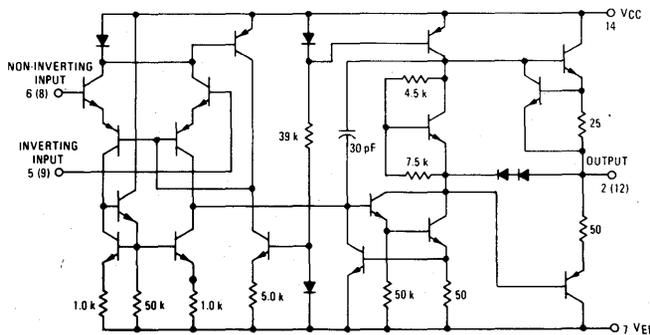
**FLIP-CHIP
(DUAL MC1741)
DUAL
OPERATIONAL AMPLIFIER
MONOLITHIC SILICON
INTEGRATED CIRCUIT**



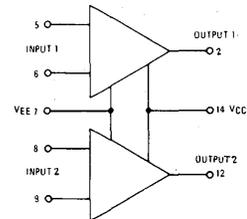
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MAXIMUM RATINGS ($T_A = +25^\circ\text{C}$ unless otherwise noted.)

Rating	Symbol	MCCF1558	MCCF1458	Unit
Power Supply Voltage	V_{CC} V_{EE}	+22 -22	+18 -18	Vdc
Differential Input Signal	V_{ID}	± 30		Volts
Common-Mode Input Swing	V_{IC}	± 15		Volts
Output Short Circuit Duration	t_S	Continuous		
Operating Temperature Range	MCCF1558	T_A		$^\circ\text{C}$
	MCCF1458	-55 to +125 0 to +75		
Junction Temperature Range	T_J	-65 to +150		$^\circ\text{C}$



The letters without parenthesis represent the pin numbers for 1/2 of the dual circuit, letters in parenthesis represent the pin numbers for the other half.

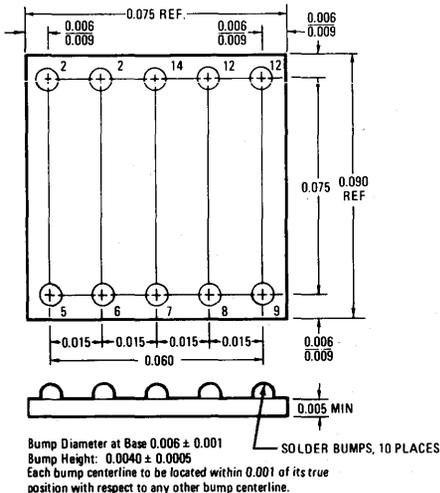


MCCF1558, MCCF1458 (continued)

ELECTRICAL CHARACTERISTICS ($V_{CC} = +15$ Vdc, $V_{EE} = -15$ Vdc, $T_A = +25^{\circ}\text{C}$ unless otherwise noted.)

Characteristic	Symbol	MCCF1558			MCCF1458			Unit
		Min	Typ	Max	Min	Typ	Max	
Input Bias Current	I_{IB}	—	0.2	0.5	—	0.2	0.5	μAdc
Input Offset Current	$ I_{IO} $	—	0.03	0.2	—	0.03	0.2	μAdc
Input Offset Voltage ($R_S \leq 10$ k ohms)	$ V_{IO} $	—	1.0	5.0	—	2.0	6.0	mVdc
Differential Input Impedance (Open-Loop, $f = 20$ Hz)								
Parallel Input Resistance	R_p	—	1.0	—	—	1.0	—	Megohm
Parallel Input Capacitance	C_p	—	6.0	—	—	6.0	—	pF
Common-Mode Input Impedance ($f = 20$ Hz)	z_{in}	—	200	—	—	200	—	Megohms
Common-Mode Input Voltage Swing	V_{IC}	—	± 13	—	—	± 13	—	Vpk
Common-Mode Rejection Ratio ($f = 100$ Hz)	CMRR	—	90	—	—	90	—	dB
Open-Loop Voltage Gain ($V_O = \pm 10$ V, $R_L = 2.0$ k ohms)	A_{VOL}	50,000	200,000	—	20,000	100,000	—	V/V
Power Bandwidth ($A_V = 1$, $R_L = 2.0$ k ohms, THD $\leq 5\%$, $v_O = 20$ Vp-p)	PBW	—	14	—	—	14	—	kHz
Unity Gain Crossover Frequency (open-loop)		—	1.1	—	—	1.1	—	MHz
Phase Margin (open-loop, unity gain)		—	65	—	—	65	—	degrees
Gain Margin		—	11	—	—	11	—	dB
Slew Rate (Unity Gain)	dV_O/dt	—	0.8	—	—	0.8	—	V/ μs
Output Impedance ($f = 20$ Hz)	z_O	—	75	—	—	75	—	ohms
Short-Circuit Output Current	I_S	—	20	—	—	20	—	mAdc
Output Voltage Swing ($R_L = 10 \times$ ohms)	V_O	± 12	± 14	—	± 12	± 14	—	Vpk
Power Supply Sensitivity $V_{EE} = \text{constant}$, $R_S \leq 10$ k ohms $V_{CC} = \text{constant}$, $R_S \leq 10$ k ohms	S^+ S^-	— —	30 30	150 150	— —	30 30	150 150	$\mu\text{V/V}$
Power Supply Current	I_{DCC} I_{DEE}	— —	2.3 2.3	5.0 5.0	— —	2.3 2.3	5.6 5.6	mAdc
DC Quiescent Power Dissipation ($V_O = 0$)	P_D	—	70	150	—	70	170	mW

See current MC1558/MC1458 data sheet for additional information.



The popular 1558 type dual operational amplifier is now available in three chip forms: 1) conventional chips, 2) beam-lead chips and 3) flip-chips, as well as in a variety of plastic and hermetic packages. The flip-chip consists of a silicon chip with solder bumps on the geometry surface to provide easy mechanical mounting and electrical connection. These devices are protected by a thin layer of phosphosilicate passivation which covers the interconnect metalization and active areas of the die.

Care must be exercised when removing the dice from the shipping carrier to avoid scratching the solder bumps. A vacuum pickup is useful for the handling of dice. Tweezers are not recommended for this purpose.

The non-spill type shipping carrier consists of a compartmentalized tray and fitted cover. Die are placed in the carrier with geometry side up.