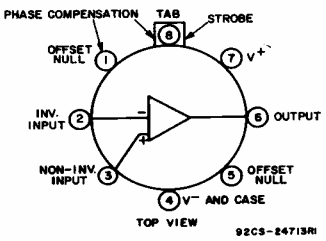
High-Reliability BiMOS Operational Amplifiers

With MOSFET Input, CMOS Output

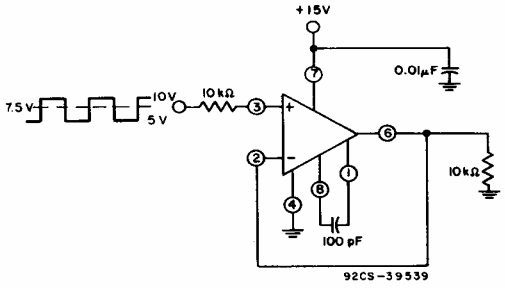
The CA3130 and CA3130A Slash (/) Series types are supplied in the 8-lead TO-5 style package.

TABLE A. POST BURN-IN, FINAL ELECTRICAL AND GROUP A SAMPLING TESTS

CHARACTERISTIC	SYMBOL	TEST CONDITIONS V^+=+15 V, V^-= 0 V Unless Otherwise Specified	LIMITS MINIMUM –55	MINIMUM +25	MINIMUM +125	MAXIMUM –55	MAXIMUM +25	MAXIMUM +125	UNITS
Input Offset Voltage:									
CA3130	V_{IO}	$V^{\pm}$ = ±7.5 V	–	–	–	40	25	40	mV
CA3130A			–	–	–	20	12	20	
Input Offset Current:									
CA3130	I_{IO}	$V^{\pm}$ = ±7.5 V	–	–	–	500	30	5000	pA
CA3130A			–	–	–	300	20	3000	
Input Current:									
CA3130	I_I	$V^{\pm}$ = ±7.5 V	–	–	–	50	0.05	50	nA
CA3130A			–	–	–	40	0.03	40	
Large Signal Voltage Gain:									
CA3130	A_{OL}	V_O = 8 V_{p-p} (–55, +125°C)	86	94	86	–	–	–	dB
CA3130A		V_O = 10 V_{p-p} (25°C)	88	94	88	–	–	–	
Common-Mode Rejection Ratio:									
CA3130	CMRR		64	70	64	–	–	–	dB
CA3130A			74	80	74	–	–	–	
Common-Mode Input Voltage Range	V_{ICR}		0	0	0	10	10	10	V
Power Supply Rejection Ratio:									
CA3130	PSRR	$V^{\pm}$ = ± 7.5 V	–	–	–	400	320	400	μV/V
CA3130A			–	–	–	200	150	200	
Maximum Output Voltage	V_{OM}^+	R_L = 2 kΩ	10	12	10	–	–	–	V
	V_{OM}^-		–	–	–	0.05	0.01	0.05	
Maximum Output Voltage	V_{OM}^+	R_L = ∞	14.95	14.99	14.95	–	–	–	V
	V_{OM}^-		–	–	–	0.05	0.01	0.05	
Maximum Output Current	I_{OM}^+	V_O = 0 V	–	12	–	–	45	–	mA
	I_{OM}^-	V_O = 15 V	–	12	–	–	45	–	
Supply Current	I^+	V_O = 7.5V, R_L=∞	–	–	–	–	15	–	mA
		V_O = 0V, R_L=∞	–	–	–	–	3	–	



Functional diagram of the CA3130 Series.



Burn-In and Life Test Circuit.

CA3130/..., CA3130A/...

TABLE B. DELTA LIMITS *at T_A = 25°C, V^+ = 7.5 V, V^- = -7.5 V (/1 only)*

CHARACTERISTIC		SYMBOL	LIMITS MAX.Δ	UNITS
Input Offset Voltage	CA3130	V_{IO}	±8	mV
	CA3130A		±3	
Input Offset Current	CA3130	I_{IO}	±15	pA
	CA3130A		±8	
Input Current	CA3130	I_I	±0.01	nA
	CA3130A		±0.01	

TABLE C. GROUPS AND D END-POINT TESTS *at T_A = 25°C, V^+ = +15 V, V^- = -15 V*

CHARACTERISTIC		SYMBOL	LIMITS MIN.	LIMITS MAX.	UNITS
Input Offset Voltage	CA3130	V_{IO}	–	30	mV
	CA3130A		–	17	
Input Offset Current	CA3130	I_{IO}	–	30	pA
	CA3130A		–	20	
Input Current	CA3130	I_I	–	0.05	nA
	CA3130A		–	0.03	
Large Signal Voltage Gain	CA3130	A_{OL}	91	–	dB
	CA3130A		91	–	