CTS®

Sample and Hold Circuit

CTS 0023ZB

GENERAL DESCRIPTION

The CTS 0023ZB is a high performance sample and hold circuit that exhibits an extremely low drift rate. Some typical applications include: Sampled Data Systems, D/A Deglitchers, Analog De-Multiplexers and A/D inputs.

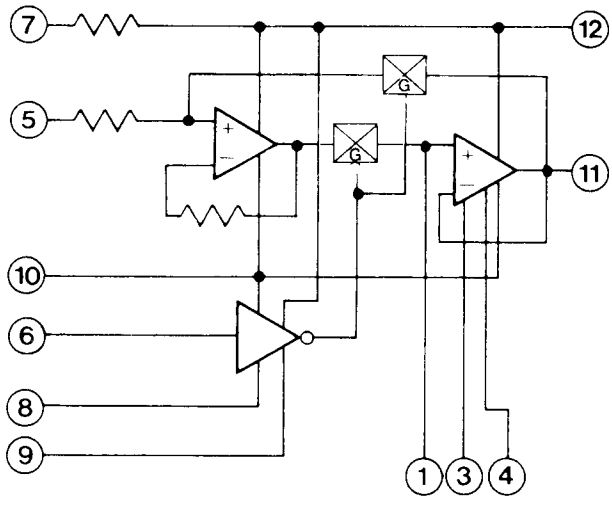
FEATURES

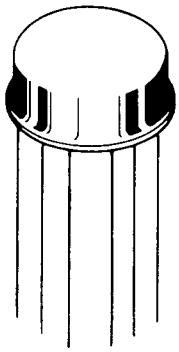
- Output Short Circuit Protected.
- Extremely low Drift Rate: .5 mV/sec typ. with .01 μF Teflon Capacitor.
- TTL or DTL compatible Logic Input.
- Operates with just ±15V or with ±15V and a separate +5V logic supply for improved noise immunity.
- Voltage offset adjustable to zero using a 10K pot with wiper at V^-.
- Military Grade processing per MIL-STD-883.
- Pin for Pin replacement for LH0023.

PIN CONFIGURATION

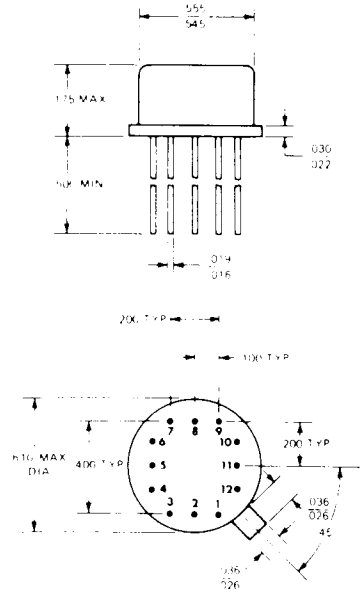
1. Storage Capacitor
2. NC
3. Null Adj.
4. Null Adj.
5. Analog Input
6. Logic Input
7. Tie to pin 8 to avoid using a separate 5V supply
8. Vcc
9. GND
10. V^-
11. Output
12. V+

FUNCTIONAL DIAGRAM





12 PIN TO-8 METAL CAN PACKAGE.



BOTTOM VIEW

MAXIMUM RATINGS

Supply Voltage (V+)	+20V
Supply Voltage (V-)	-20V
Logic Supply Voltage (V_{cc})	+20V
Logic Input Voltage (V_6)	+20V
Analog Input Voltage (V_5)	±15V
Output Short Circuit Duration	Continuous
Operating Temperature Range	-55° C to +125° C
Storage Temperature Range	-65° C to +150° C
Lead Soldering (10 sec.)	300° C

CTS Corporation

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ELECTRICAL CHARACTERISTICS:

Unless otherwise noted: $V^+_{=}+15V$, $V_{cc=}+5V$, $V^-_{=}-15V$, pin 9 grounded, a .01μF capicitor connected between pin 1 and ground, and $-55°C \leq T_A \leq +125°C$.

Parameter	Conditions	CTS 0023ZB LIMITS Min.	Max.	Units
Sample (Logic "1")				
Input Voltage	$V_{cc}=4.5V$	2.0		V
Input Current	$V_{cc}=5.5V$, $V_6=2.4V$		5.0	μA
Hold (Logic "0")				
Input Voltage	$V_{cc}=4.5V$		.7	V
Input Current	$V_{cc}=5.5V$, $V_6=.4V$		.5	mA
Analog Input and Output Voltage Range	$R_L \geq 2K\Omega$	±10		V
Supply Current				
+15V Supply (pin 12)	$V_5=OV$, $V_6=2V$, $V_{cc}=5V$		6.8	mA
-15V Supply (pin 10)	$V_5=OV$, $V_6=2V$, $V_{cc}=5V$		6.8	mA
+5V Supply (pin 8)	$V_{cc}=5V$, $V_6=OV$		1.2	mA
DC Input Resistance				
Sample Mode		500		KΩ
Hold Mode		20		KΩ
Leakage Current (pin 1)	$V_{out}=\pm 10V$, $T_A=25°C$		200	pA
Drift Rate	$V_{out}=\pm 10V$, $C_s=.01\mu F$, $T_A=25°C$ and $-55°C$		20	mV/S
Drift Rate	$V_{out}=\pm 10V$, $C_s=.01\mu F$, $T_A=125°C$		.50	mV/mS
Sample Acquisition Time	$\Delta V_{out}=20V$, $C_s=.01\mu F$		100	μS
Sample Accuracy	$V_{out}=\pm 10V$ (Full Scale)		.03	%
Output Offset Voltage (without null)			±20	mV

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