

ARCHER[®]

TECHNICAL DATA

AN EXCLUSIVE RADIO SHACK SERVICE TO THE EXPERIMENTER

CALCULATOR CHIP CT5005 MOS-IC

#276-1753

Your Radio Shack #276-1753 is a single MOS chip with all the logic necessary for a twelve digit four function calculator with extra storage register for memory or constant application. Multiplexed seven segment outputs enable operation with LED, incandescent, fluorescent or gas discharge displays. The only other circuit necessary is a two-phase oscillator and a power supply which varies depending on the type of display used. The basic arithmetic in the 276-1753 is done with two, fifty two bit, or 13 digit registers. This results in capacity for 13 digits of which 12 are used. Timing for register circulation is arranged in 13 groups of four, each one representing time for one BCD digit. At a clock rate of 25 kHz, this results in a circulation or "word time" of 2 ms.

Functions include add, subtract, multiply, divide, 12 digit display and calculate, chain calculations, fixed decimal point to five places, true credit balance, and automatic overflow indication.

CAUTION

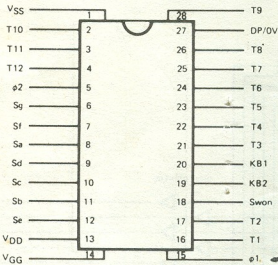
These devices are extremely susceptible to damage from static charge. We recommend that you handle them by the ends. DO NOT TOUCH THE PINS.

ABSOLUTE MAXIMUM RATINGS

Voltage on any Pin Relative to V_{SS}	+0.3 to -27V
Operating Temperature (Ambient).....	0°C to 70°C
Storage Temperature (Ambient).....	-55°C to 150°C

RECOMMENDED OPERATING CONDITIONS

PARAMETER	LIMITS			UNIT
	MIN	TYP	MAX	
Supply Voltage		-12.5		V
Supply Voltage		-22.5		V
Input Voltage, Logic 1, any input	V_{GG}		$V_{DD}+1$	V
Input Voltage, Logic 0, any input	$V_{SS}-2$		V_{SS}	V
Clock Frequency	10	25	30	kHz



$V+ - V_{SS}$
 $\frac{1}{2} - V_{DD}$

$V_{SS} +$
 V_{DD}
 V_{GG}
- 12
- 22

ELECTRICAL CHARACTERISTICS

PARAMETER	LIMITS			UNIT
	MIN	TYP	MAX	
Supply Current, V_{DD}		25	50	mA
Supply Current, V_{GG}		3	10	mA
Input Current, (leakage), Clock Inputs All other Inputs		25 KHZ	100	μA
Output Current, Logic 0	1			mA
Output Current, Logic 1 (leakage)			50	μA

PIN ASSIGNMENTS

T-1 T-12

Sa-Sg
DP/OV

SWON

$\phi 1$

$\phi 2$

1, 13, 14

FUNCTIONS

Digit driver signals which are fed back to KB-1 and KB-2 via the keyboard.

Segment driver signals encoded.

Decimal point display drivers. On permanently for an overflow condition.

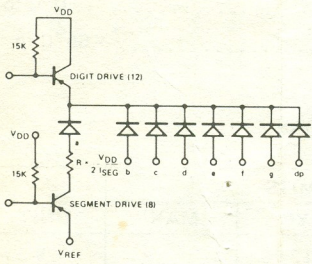
Used to initialize the chip at power turn on.

Two phase clock signal.

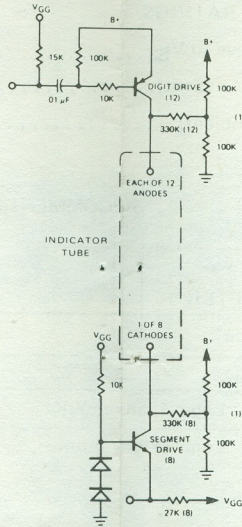
Two phase clock signal.

Power supply.

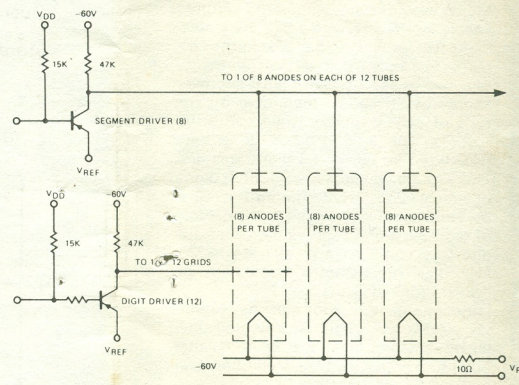
LED - COMMON CATHODE (USUAL TYPE)



INTERFACE WITH GAS DISCHARGE INDICATOR TUBE

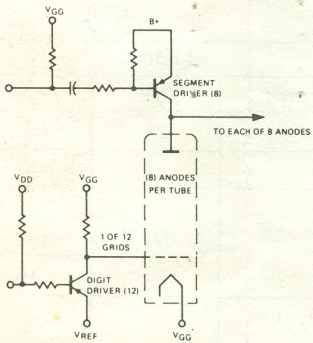


INTERFACE WITH LOW VOLTAGE VACUUM FLUORESCENT INDICATOR TUBES



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INTERFACE WITH HIGH VOLTAGE VACUUM READOUT



BLOCK DIAGRAM

