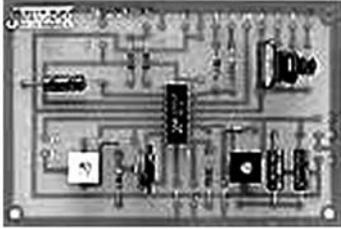




20685 (JE2206) FUNCTION GENERATOR KIT



GENERAL DESCRIPTION:

The 20685 (JE2206 Function Generator kit is a single-board assembly incorporating the basic circuit necessary for a sine, square and triangle wave generator, of high stability and accuracy that may be amplitude and frequency modulated. The kit is intended to be incorporated into a higher assembly of the user's own design that adds power supply, controls and housing.

- Operation from either +12VDC or +/- 6VDC @ 15mA
- Frequency capability: +1-100K Hz in 4 ranges
- Frequency variability: 1:100 within each range
- Frequency accuracy dependent upon timing capacitors and user's potentiometer: calibration by user
- Sine triangle output amplitudes variable, 0-6VPP for sine and 0 to V +/- for triangle, with 600Ω source impedance.
- Maximum sinewave distortion: 1% 10-10K Hz and 3% 10K-100K Hz
- Linear frequency modulation capability: range dependent on center frequency
- Linear amplitude modulation capability, range 55dB
- Other criteria as determined by Exar XR2206 function generator IC

PARTS LIST:

Component Reference	Part Number	Product Description	Quantity
IC1	34972	IC Function Gen XR2206	1
C1, C2, C7	10882	Capacitor, Axial, Elec 10μF, 50V	3
C3	27001	Capacitor, non-polar, Mylar, 1μF, 100V (1K)	1
C4	26956	Capacitor, non-polar, Mylar, 1μF, 100V (104)	1
C5	26884	Capacitor, non-polar, Mylar, .01μF, 100V (.01)	1
C6	26833	Capacitor, non-polar, Mylar, .001μF, 100V (102)	1
R1	691219	Resistor, 1/4W, 30K (ORN-BLK-ORN)	1
R2	691340	Resistor, 1/4W, 100K (BRN-BLK-YRL)	1
R3, R7	690865	Resistor, 1/4W, 1K (BRN-BLK-RED)	2
R4	691091	Resistor, 1/4W, 9.1K (WHT-BRN-RED)	1
R5, R6	691032	Resistor, 1/4W, 5.1K (GRN-BRN-RED)	2
R8	690734	Resistor, 1/4W, 300Ω (ORN-BLK-ORN)	1
R9	42981	Resistor, Pot, 1Meg (105)	1
R10	42964	Resistor, Pot, 1K (102)	1
R11	35511	Resistor, Pot, 25K (253)	1
R12	255434	Resistor, Pot, P50K, 50K, Panel Mount (503)	1
R13	255469	Resistor, Pot, 1Meg, Panel Mount (105)	1
S1	101574	Switch, Rotary, 1-LYR, 2P6P	1
S2	22833	Switch, MTS-102-F1	1
	134341	Wire, Hookup, Black, 22AWG	1
	20706	JE2206-1 PC Board	1
		Kit assembly instructins for 20685 (JE2206)	1

The following components are externally mounted from the JE2206 board and are *not* included with this kit. They are available from Jameco Electronics at www.Jameco.com

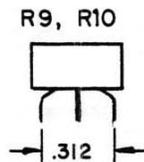
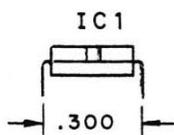
Component Reference	Part Number	Product Description	Quantity
PS	20626	Power Supply JE215	1

All of the above components may be purchased separately from Jameco using the listed part number.

ASSEMBLY PREPARATION AND PROCEDURES:

1. Important Identify all parts on parts list before proceeding
2. Suggestion Simulate board assembly by placing the components in their actual place on the picture assembly, then transfer components to the actual board during assembly
3. Tools Required
 - Small soldering iron, 27W to 35W
 - Resin core solder, .03" Dia. SN60 or SN63. Do not use acid core type 50/50 solder
 - Small sponge (water dampened) for cleaning solder tip)
 - Small wire cutter/stripper
 - Small long nose plier
 - Screw driver
 - DC meter 0 to 18VDC range

Component lead bending for IC1, R9 and R10



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SOLDERING TIPS:

1. Feed the solder to the crack between the iron tip and the solder pad next to the component lead.
2. Leaving the iron tip too long on a pad will cause the pad to lift, as well as damage the component. Allow approx. 2 seconds per solder joint.
3. Using too much solder can cause the solder to bridge across traces and pads.
4. Keep iron tip clean by wiping the tip across a water dampened sponge —frequently.

ASSEMBLY INSTRUCTIONS:

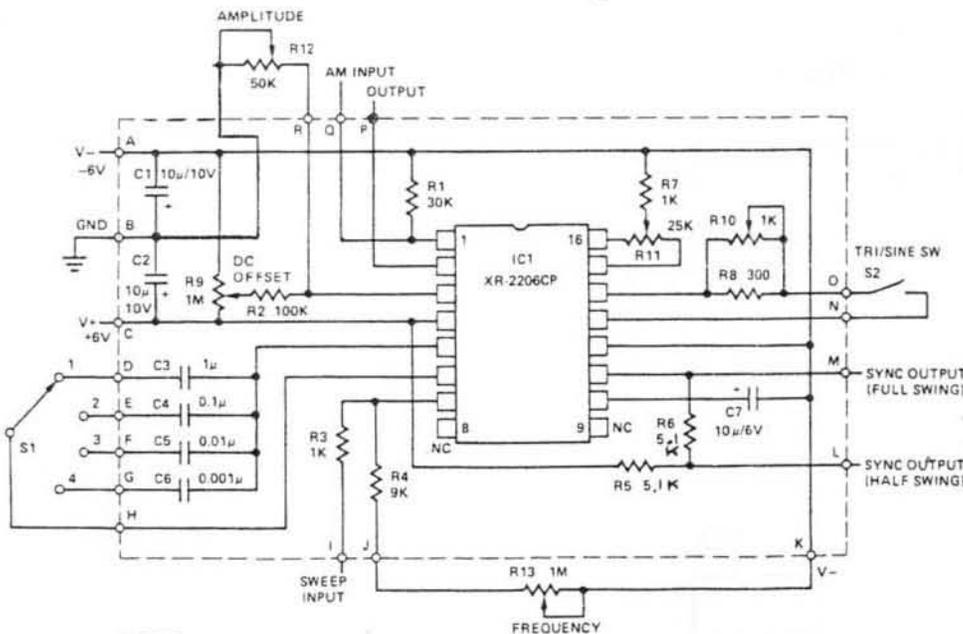
READ ALL THE INSTRUCTIONS BEFORE STARTING.

Before assembly determine if a split supply or a single supply will be used as the placement of C1, C2 and R12 will change (with an addition of a jumper wire).

1. Printed wiring board assembly.
 - 1.1 Start the board assembly by placing the PW board to the position shown on the assembly picture.
 - 1.2 Insert resistors R1 through R8 into board. Observe the color code of each resistor as you install them. Bend resistors leads under the board to contain the components. Solder and clip leads.
 - 1.3 Insert IC1 into board. Be sure that the notch at the end is located properly as shown for number 1 pin identification. Solder leads.
 - 1.4 Insert resistors (pot) R9, R10 and R11 as shown. Resistors R9 and R10 will require spreading of the leads to match the hole spacing on the board. Solder leads.
 - 1.5 Insert capacitors C1, C2 and C7 into the board. Note that the leads are polarized and must be placed as shown. Clip and solder leads.
 - 1.6 Insert capacitors C3, C4, C5 and C6. The capacitance values are marked on the components as shown in parenthesis. C3, 1 μ f (1K). C4, 0.1 μ f (104). C5, .01 μ f (.01). C6, .001 μ f (102). Solder and clip leads.
2. Final assembly check-out:

Do not attempt to apply power to the board until a final check has been made to verify the correctness of all assembled components. Component IC1 will be damaged if placement is turned around. Board will malfunction if capacitors C1, C2 and C7 are not properly placed. Capacitors will be damaged after short usage. Erratic signal patterns will result from incorrect placement of resistors.

Schematic Diagram



NOTE:

1. For single supply operation lift GND connection. Keeping R12 across terminals R and B intact, and connect terminal A to GND.
2. Omit GND (\perp) with single supply operation.

Figure 1

Board assembly guide for single supply

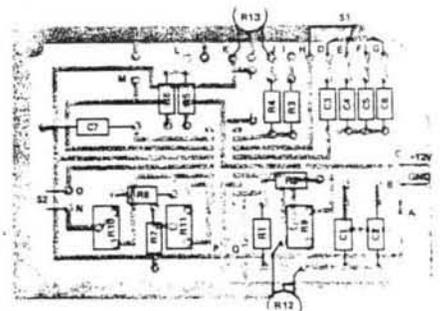


Figure 2