WIDE RANGE, TUNABLE FUNCTION GENERATOR

TRIANGLE WAVE ---10V ---5V

SQUARE WAVE

t_1* t_2*

T*

TIMING DIAGRAM

D1 1N756

LED1 MV5020

Q1 2N3906

R7 1K

R8 5MEG

I_{ABC}*

R5 1K

C2 10 µF

+15V

C3 0.1µF

R1 10K

$f = \frac{1}{T} \cong \frac{0.1}{R_{ABC}C_1}$

(AS SHOWN, f IS VARIABLE FROM 10 Hz TO 50 kHz.)

R3 4.7K

R2 1.5K

R4 1.5K

U2 3080A

I_t*

C_t* 0.002µF

U3 3140

R6 4.7K

R TH

TR

DIS GND

V+

OUT

U1 555 V_c

C1 0.1µF

TRIANGLE WAVE OUTPUT

SQUARE WAVE OUTPUT 1

SQUARE WAVE OUTPUT 2

*$t_1 = t_2 \cong 5R_{ABC}C_t$

$T = t_1 + t_2 \cong 10R_{ABC}C_1$