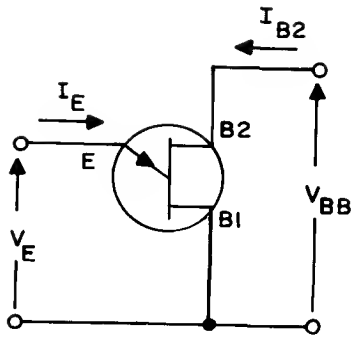

FIG. 1

Unijunction Transistor Symbol with Nomenclature used for voltage and currents.

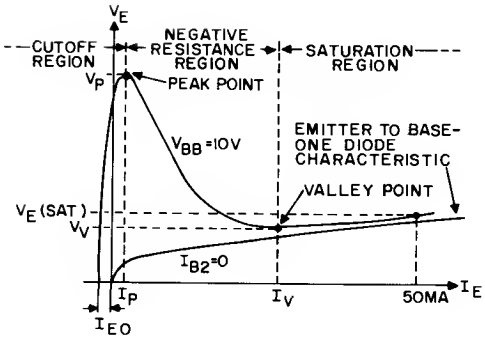

FIG. 2

Static Emitter Characteristic curves showing important parameters and measurement points (exaggerated to show details).

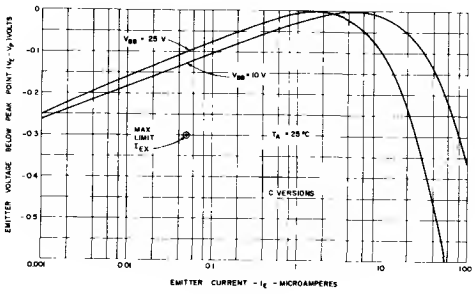

FIG. 3

Static Emitter Characteristics at Peak Point.

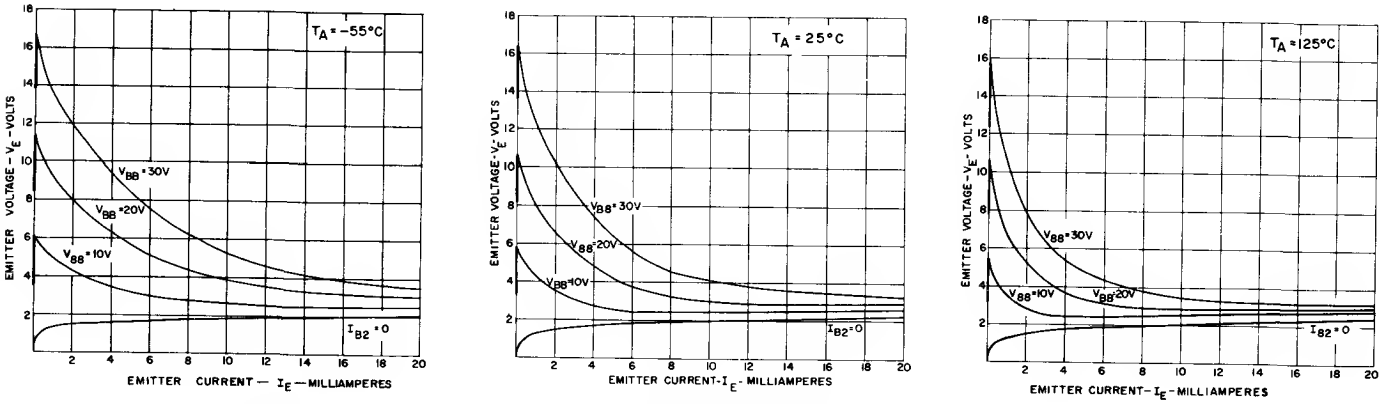

FIG. 4

Static emitter characteristics for a typical 2N1671 unijunction transistor at three different ambient temperatures.

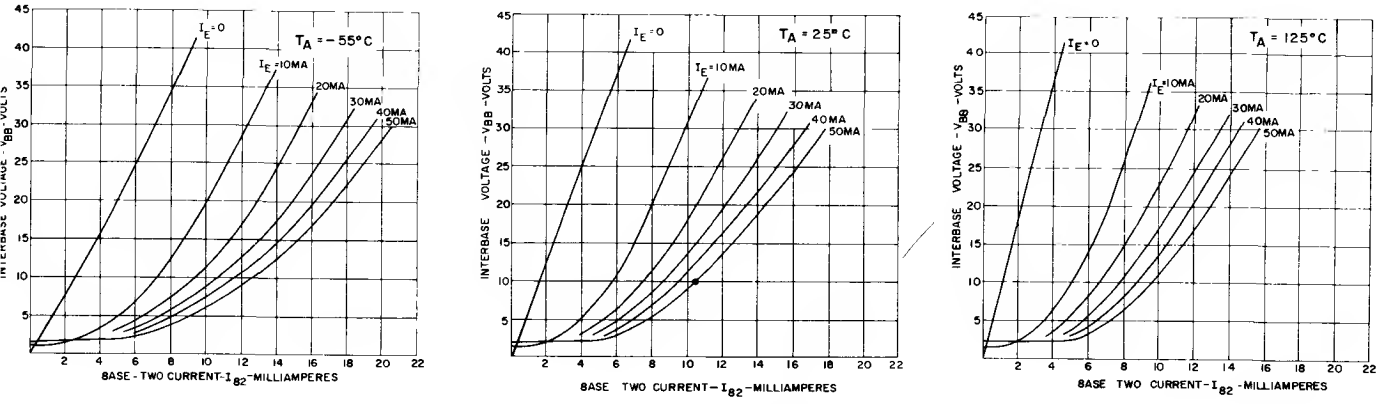

FIG. 5

Static interbase characteristics for a typical 2N1671 unijunction transistor at three different ambient temperatures.

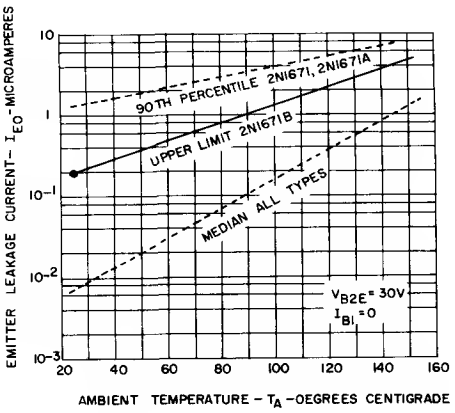

FIG. 6

Emitter reverse current vs. temperature.

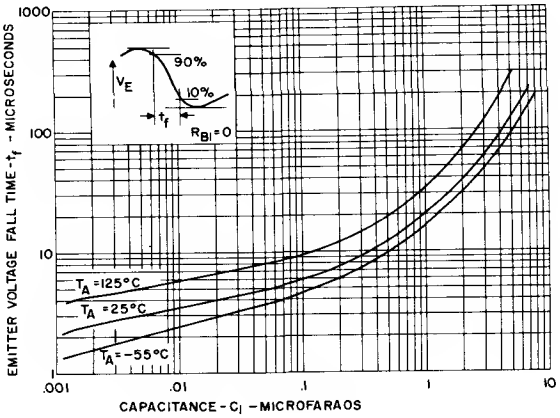

FIG. 7

Emitter valtage fall time vs. capacitance and ambient temperature far a typical unit in relaxation ascillator circuit.

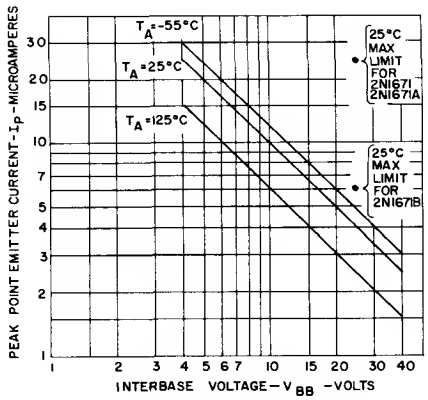

FIG. 8

Peak Point Emitter Current vs. interbase valtage and ambient temperature far a typical unit.

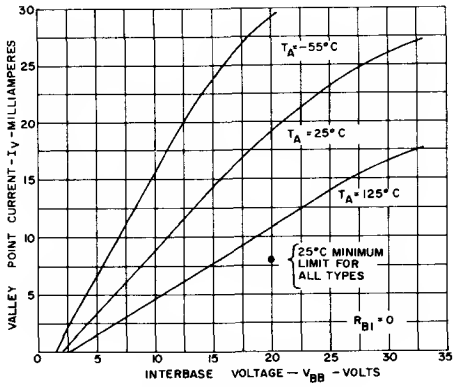

FIG. 9

Valley Paint Current vs. interbase voltage and ambient temperature for a typical unit.

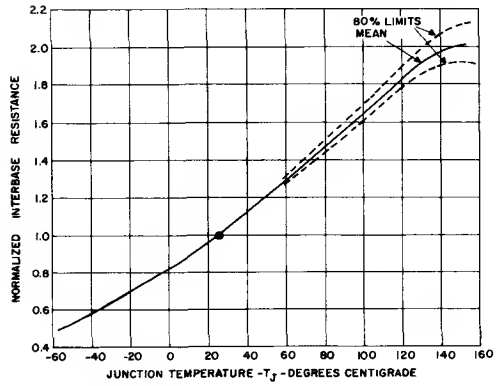

FIG. 10

Normalized interbase resistance vs. junctian temperature.

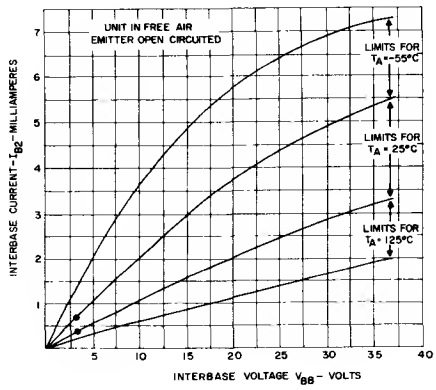

FIG. 11

Limit values af static interbase characteristics with zera emitter current.

GENERAL PURPOSE PULSE CIRCUITS AND FIRING CIRCUITS FOR SILICON CONTROLLED RECTIFIERS

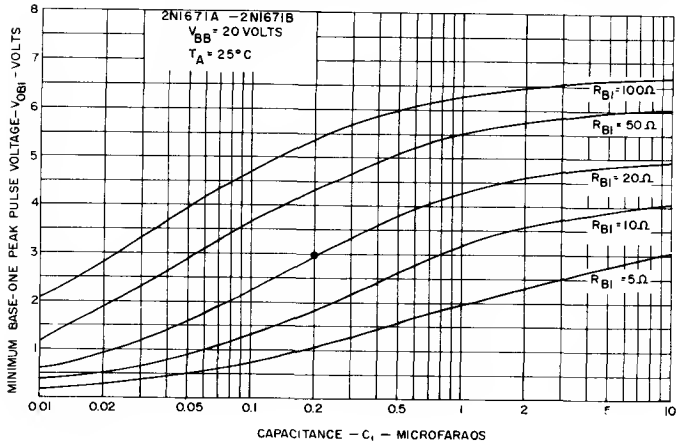

FIG. 12

Minimum bose-one peak pulse voltage vs. capacitance and base-one resistance in relaxation oscillator circuit.

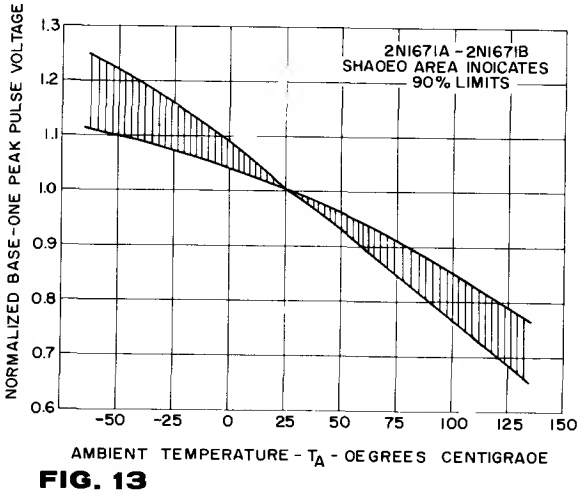

FIG. 13

Normalized base-one peak pulse voltage vs. temperature in relaxation oscillator circuit.

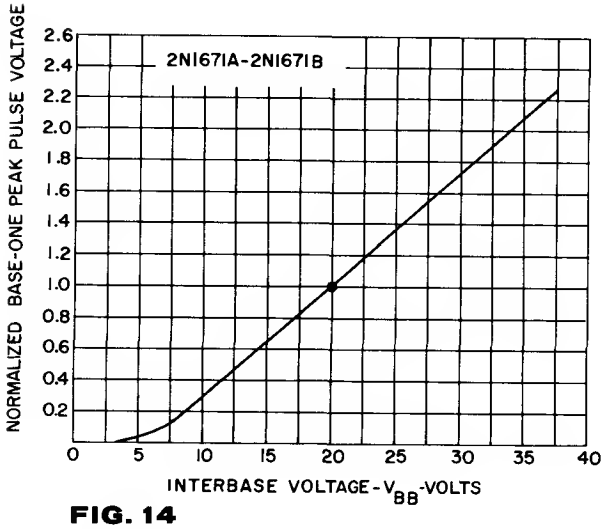

FIG. 14

Normalized base-one peak pulse voltage vs. interbase voltage in relaxation oscillator circuit.

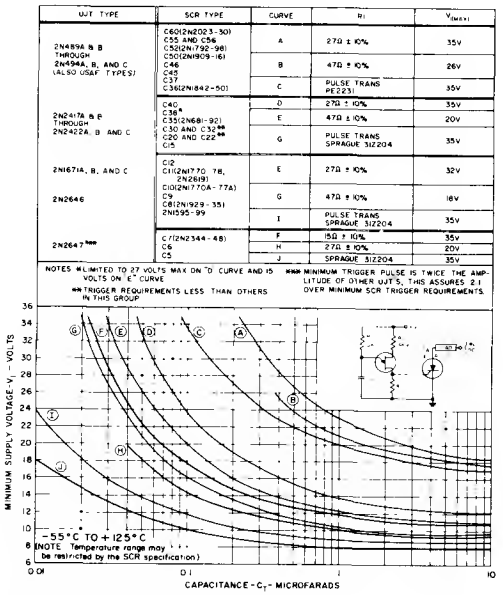

FIG. 15

Minimum supply voltage required to fire standard types of silicon controlled rectifiers vs. capacitance in circuit below.

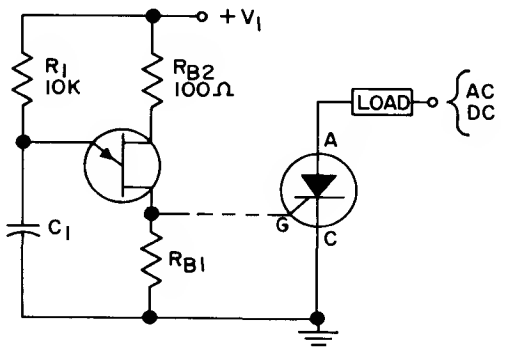

FIG. 16

Basic unijunction transistor firing circuit for silicon controlled rectifiers.

Period of Relaxation Oscillator

$\tau = 0.80\ R_1C_1\ (\pm\ 0.21\ R_1C_1)$

Maximum Value of R_1 for oscillation (−55°C to +140°C)

R_1 (max) = $430\ V_1^2$ (2N1671-2N1671A)

R_1 (max) = $1800\ V_1^2$ (2N1671B)

τ = Period in Seconds

C_1 = Capacitance in Farads

R_1 = Resistance in ohms

V_1 = Supply voltage in volts

REFERENCES:

1. "Notes on the Application of the Silicon Unijunction Transistor," 90.10.
2. "General Electric Controlled Rectifier Manual," Fifth Edition.