COMMON CIRCUIT SYMBOLS

PASSIVE COMPONENTS:

- Fixed Capacitor (Polarized)
- Variable Capacitor
- Fixed Resistor
- Variable Resistor
- Transformer

DIODES AND THYRISTORS:

- Rectifier/Diode
- Zener Diode
- SCR
- TRIAC
- Trigger Diode
- Bridge Rectifier

TRANSISTORS:

- NPN
- PNP
- N-JFET
- P-JFET
- N-MOSFET
- P-MOSFET

PHOTONIC COMPONENTS:

- LED
- Photodiode
- Photo-Transistor
- Solar Cell
- LASCR
- Photo-Resistor

LOGIC GATES:

- AND
- NAND
- INVERTER
- OR
- NOR
- EX-OR
COMMON CIRCUIT SYMBOLS

WIRING:

- (or) | | (or) (or)
  UNCONNECTED

CONNECTED

POSITIVE SUPPLY

GROUND

SWITCHES:

SPST TOGGLE

NORMALLY OPEN PUSHBUTTON

NORMALLY CLOSED PUSHBUTTON

MISCELLANEOUS:

+ -

METER

MICROPHONE

LAMP

CRystal

BATTERY

POWER PLUG

OUTPUT DEVICES:

RELAY

SPEAKER

PIEZOELECTRIC BUZZER

ABBREVIATIONS:

A = AMPERE

F = FARAD

I = CURRENT

P = POWER

M (MEG-) = \( \times 1,000,000 \)

K (Kilo-) = \( \times 1,000 \)

m (MILLI-) = .001

\( \mu \) (MICRO-) = .000001

n (Nano-) = .000000001

P (Pico-) = .000000000001

\( \Omega \) = OHM

MILLI-amps

\( \mu \) (MICRO-) = .000000000001

OHM'S LAW:

\( V = IR \)

\( R = \frac{V}{I} \)

\( I = \frac{V}{R} \)

\( P = VI \) (or) \( I^2 R \)

RESISTOR COLOR CODE:

BLACK 0 0 0 0 1

BROWN 1 1 1 0 10

RED 2 2 1 0 100

ORANGE 3 3 1 0 1000

YELLOW 4 4 1 0 10000

GREEN 5 5 1 0 100000

BLUE 6 6 1 0 1000000

VIOLET 7 7 1 0 10000000

GRAY 8 8 1 0 100000000

WHITE 9 9 1 0 1000000000

FOURTH BAND INDICATES ACCURACY

(GOLD = \( \pm 5 \% \), SILVER = \( \pm 10 \% \),
NO FOURTH BAND = \( \pm 20 \% \).)