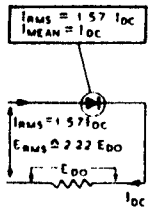
Rectifier Circuits

Single Phase

HALF WAVE

Resistive Load

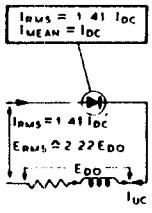
Figure 26



$\beta = 180^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 1\ F_S$

Inductive Load

Figure 27

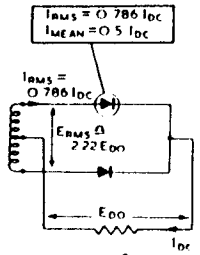


$\beta = 180^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 1\ F_S$

FULL WAVE CENTRE TAP

Resistive Load

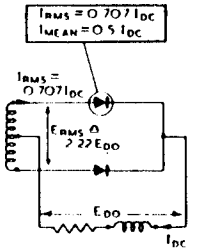
Figure 28



$\beta = 180^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 2\ F_S$

Inductive Load

Figure 29

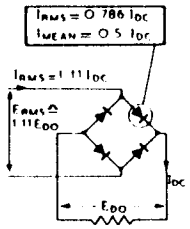


$\beta = 180^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 2\ F_S$

FULL WAVE BRIDGE

Resistive Load

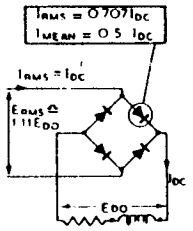
Figure 30



$\beta = 180^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 2\ F_S$

Inductive Load

Figure 31



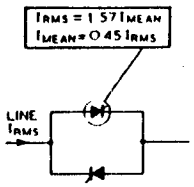
$\beta = 180^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 2\ F_S$

Three Phase

A.C. REGULATOR

Resistive or Inductive Load

Figure 32



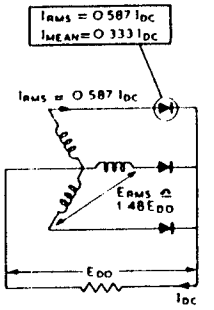
$\beta = 180^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 1\ F_S$

Above diagram represents single phase regulator. For three phase applications a similar arrangement is used in each line.

STAR

Resistive Load

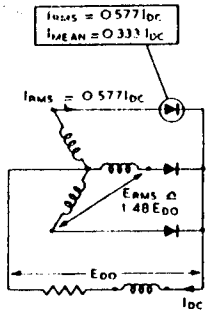
Figure 33



$\beta = 120^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 3\ F_S$

Inductive Load

Figure 34

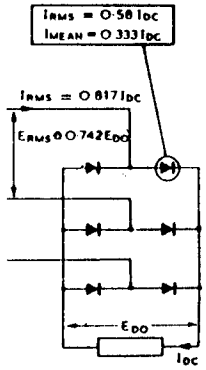


$\beta = 120^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 3\ F_S$

BRIDGE

Resistive or Inductive Load

Figure 35



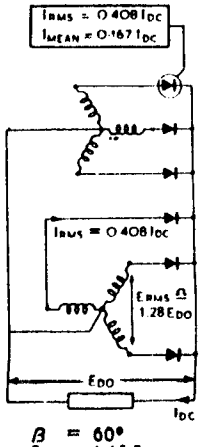
$\beta = 120^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 6\ F_S$

Six Phase

Double Star (without I.P.T.)

Resistive or Inductive Load

Figure 36

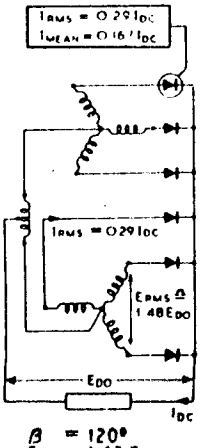


$\beta = 60^0$
$E_{PR} = 1.63\ E_{RMS}$
$F_D = 6\ F_S$

Double Star (with I.P.T.)

Resistive or Inductive Load

Figure 37

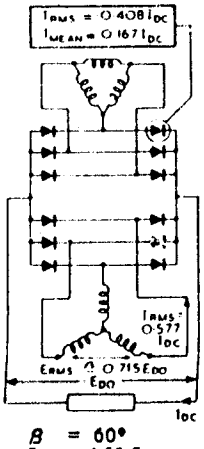


$\beta = 120^0$
$E_{PR} = 1.63\ E_{RMS}$
$F_D = 6\ F_S$

Parallel Bridge (without I.P.T.)

Resistive or Inductive Load

Figure 38

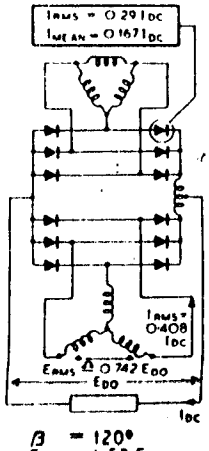


$\beta = 60^0$
$E_{PR} = 1.52\ E_{RMS}$
$F_D = 12\ F_S$

Parallel Bridge (with I.P.T.)

Resistive or Inductive Load

Figure 39

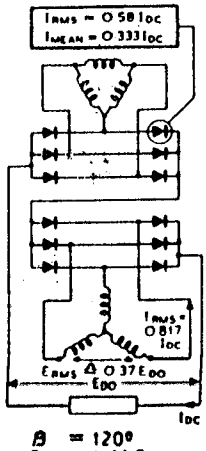


$\beta = 120^0$
$E_{PR} = 1.52\ E_{RMS}$
$F_D = 12\ F_S$

Series Bridge

Resistive or Inductive Load

Figure 40



$\beta = 120^0$
$E_{PR} = 1.41\ E_{RMS}$
$F_D = 12\ F_S$

ß Maximum Device Conduction Period (Degrees)
E_{PR} Maximum Peak Repetitive Voltage appearing across device
F_D D.C. Ripple Frequency (Hz.)
F_S Line Frequency (Hz.)