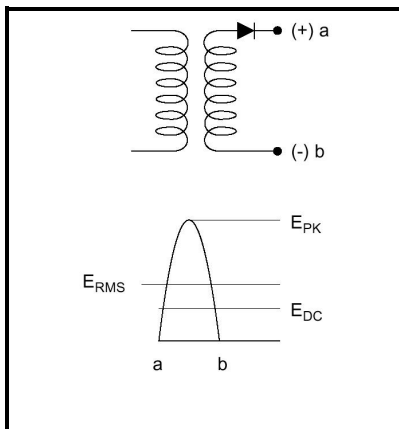
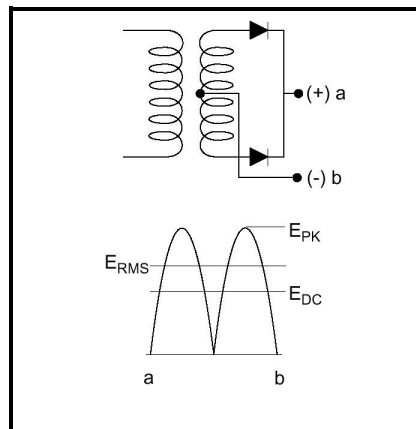
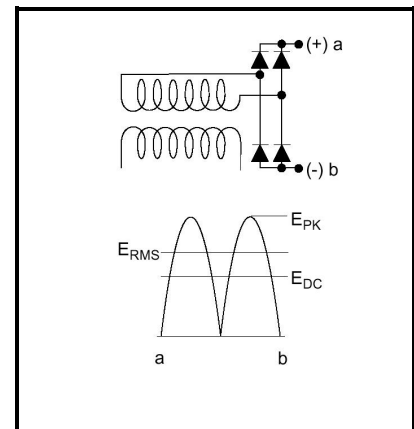


SINGLE PHASE

Circuit and output voltage waveform across a - b


Fig. 1 : Half wave

Fig. 2 : Full wave centre tap

Fig. 3 : Full wave bridge

| | Fundamental Ripple Frequency | Current Ratios | | | | | | | Voltage Ratios | | |
|----------------------|------------------------------|-------------------|----------------------|-------|---------------------|-----|---------------------|-------|----------------------|----------------------|---------------------|
| | | I_{AV} / I_{DC} | I_{RMS} / I_{DC}^A | | I_{PK} / I_{DC}^B | | I_{PK} / I_{DC}^C | | E_{RMS} / E_{DC}^D | E_{RMS} / E_{DC}^E | E_{PK} / E_{DC}^F |
| | | | R | L | R | L | R | L | | | |
| Half Wave | 1f | 1.0 | 1.57 | - | 3.14 | - | 1.57 | - | 2.22 | 1.57 | 3.14 |
| Half Wave Centre Tap | 2f | 0.5 | 0.785 | 0.707 | 1.57 | 1.0 | 0.785 | 0.707 | 1.11 | 2.22 | 1.57 |
| Full Wave Bridge | 2f | 0.5 | 0.785 | 0.707 | 1.57 | 1.0 | 1.11 | 1.0 | 1.11 | 1.11 | 1.57 |

NOTES

R = Resistive load.

L = Inductive load.

A = Ratio of RMS current to DC output current. Arm fuses are rated for this RMS current.

B = Ratio of peak device current to DC output current.

C = Ratio of secondary RMS line current from supply to DC output current. Line fuses are rated for this RMS current.

D = Ratio of no load RMS line to line voltage to no load DC voltage.

E = Ratio of RMS phase voltage to DC voltage.

F = Ratio of peak phase voltage to DC voltage.

THREE PHASE

Circuit and output voltage waveform across a - b

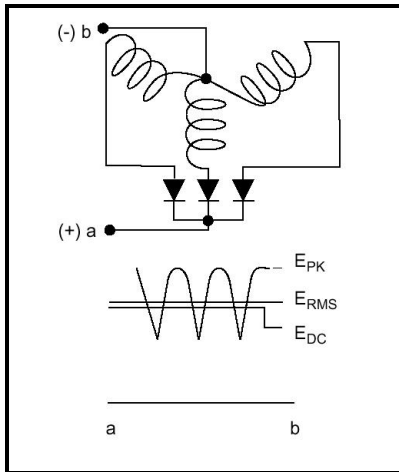


Fig. 4 : Half wave

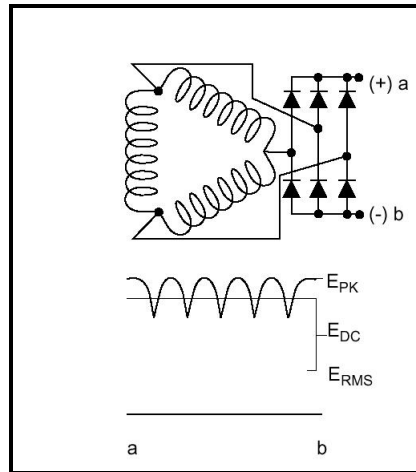


Fig. 5 : Bridge

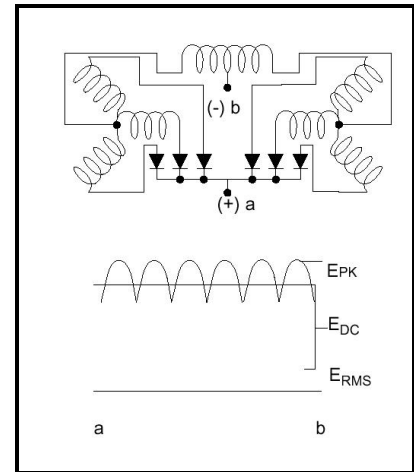


Fig. 6: Double star

| | Fundamental Ripple Frequency | Current Ratios | | | | | | Voltage Ratios | | | |
|-------------|------------------------------|-----------------|--------------------|-------|-------------------|-----|-------------------|----------------|--------------------|--------------------|-------------------|
| | | I_{AV}/I_{DC} | I_{RMS}/I_{DC}^A | | I_{PK}/I_{DC}^B | | I_{PK}/I_{DC}^C | | E_{RMS}/E_{DC}^D | E_{RMS}/E_{DC}^E | E_{PK}/E_{DC}^F |
| | | | R | L | R | L | R | L | | | |
| Half Wave | 3f | 0.33 | 0.588 | 0.577 | 1.21 | 1.0 | 0.588 | 0.577 | 1.48 | 0.855 | 2.1 |
| Bridge | 6f | 0.33 | 0.588 | 0.577 | 1.05 | 1.0 | 0.816 | 0.816 | 0.74 | 0.427 | 1.05 |
| Double Star | 6f | 0.167 | 0.293 | 0.289 | 0.525 | 0.5 | 0.293 | 0.289 | 1.48 | 0.855 | 2.42 |

NOTES

R = Resistive load.

L = Inductive load.

A = Ratio of RMS current to DC output current. Arm fuses are rated for this RMS current.

B = Ratio of peak device current to DC output current.

C = Ratio of secondary RMS line current from supply to DC output current. Line fuses are rated for this RMS current.

D = Ratio of no load RMS line to line voltage to no load DC voltage.

E = Ratio of RMS phase voltage to DC voltage.

F = Ratio of peak phase voltage to DC voltage.

SIX PHASE

Circuit and output voltage waveform across a - b

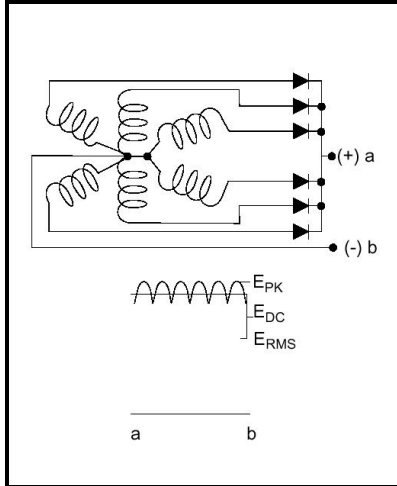


Fig. 7 : 5 Star limb core

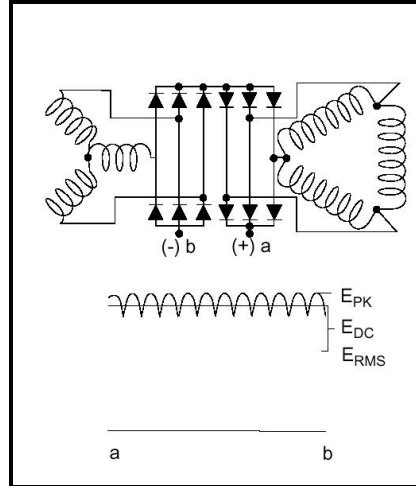


Fig. 8 : Series bridges

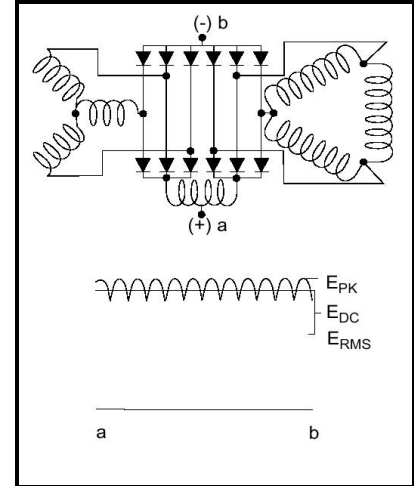


Fig. 9 : Star delta with IPT

| | Fundamental Ripple Frequency | Current Ratios | | | | | | Voltage Ratios | | | |
|---------------------|------------------------------|-------------------|----------------------|-------|---------------------|-----|---------------------|----------------|----------------------|----------------------|---------------------|
| | | I_{AV} / I_{DC} | I_{RMS} / I_{DC}^A | | I_{PK} / I_{DC}^B | | I_{PK} / I_{DC}^C | | E_{RMS} / E_{DC}^D | E_{RMS} / E_{DC}^E | E_{PK} / E_{DC}^F |
| | | | R | L | R | L | R | L | | | |
| 5 Star Limb Core | 6f | 0.167 | 0.408 | 0.408 | 1.05 | 0.5 | 0.408 | 0.408 | 1.48 | 0.74 | 2.1 |
| Series Bridges | 12f | 0.33 | 0.588 | 0.577 | 1.05 | 1.0 | 0.816 | 0.816 | 0.37 | - | 1.05 |
| Star Delta with IPT | 12f | 0.167 | 0.293 | 0.289 | 0.525 | 0.5 | 0.408 | 0.408 | 0.74 | - | 1.05 |

NOTES

R = Resistive load.

L = Inductive load.

A = Ratio of RMS current to DC output current. Arm fuses are rated for this RMS current.

B = Ratio of peak device current to DC output current.

C = Ratio of secondary RMS line current from supply to DC output current. Line fuses are rated for this RMS current.

D = Ratio of no load RMS line to line voltage to no load DC voltage.

E = Ratio of RMS phase voltage to DC voltage.

F = Ratio of peak phase voltage to DC voltage.

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Using the latest CAD methods our team of design and applications engineers aim to provide the Power Assembly Complete Solution (PACs).

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