1d.1 • **Transmitted bandwidth** • `000` • `nanoid`

What do the Licence Conditions say about requirements for transmission?

2a.1 • **Tolerance** • `000` • `xBH0y2JT`

What difference does a component's tolerance make?

2a.1 • Tolerance • 010 • RzYcCfgi

What does a 10MHz crystal with 10ppm tolerance mean?

2a.1 • Tolerance • 020 • PoFykgkR

What do the colours brown, red, gold and silver mean on a resistor as the last band, in terms of tolerance?

2a.1 • Tolerance • 030 • Bb7MwMw9

Think about some of the ways that the effects of tolerance can be adjusted.

2d.1 • Capacitor • 000 • kEyJnEIw

What factors influence the capacitance of a capacitor, and what is the formula?

2d.1 • Capacitor • 010 • WUxQUz1C

What happens to capacitance if distance between plates doubles?

2d.1 • Capacitor • 020 • iOXUtAs9

What happens to capacitance if plate area doubles?

2d.1 • Capacitor • 030 • snGJZdyD

Is the formula for Capacitance on the EX309 sheet, and do you know how to decode its incorrect printing?

2d.1 • Coulomb • 000 • erA72lhb

What is the unit for the quantity of electricity called, and how is it defined?

2d.1 • Coulomb • 000 • PzSmDiD6

What is the formula for stored charge on a capacitor?

2d.1 • Coulomb • 000 • UHIISN1F

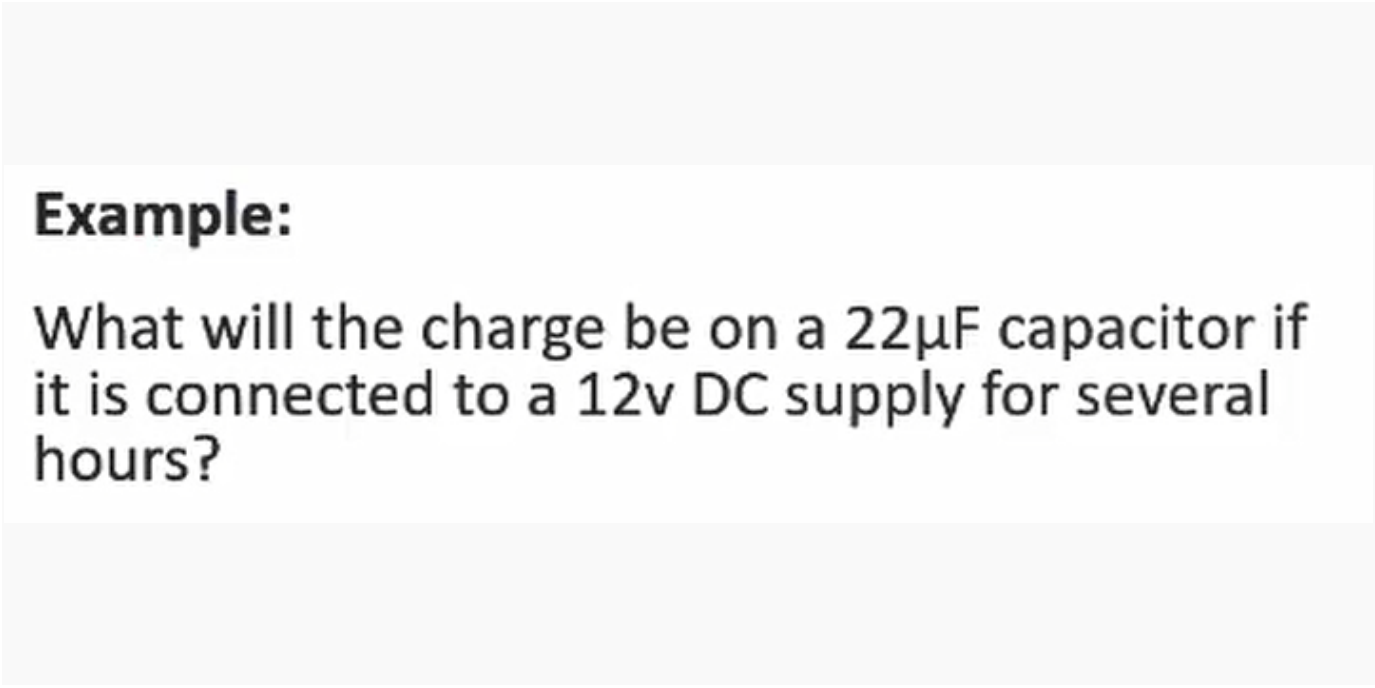
REVISION: Q as a measure of CHARGE, the COULOMB

What is the definition of Q both in a wire, and on a capacitor?

- Measure of charge

2d.1 • Coulomb • 000 • BHYJT6GX

REVISION: What will the charge be on a $22\mu F$ capacitor, if it is connected to a 12 DC supply for several hours?



2d.2 • Dielectrics • 000 • jP8IiNpC

What sort of materials are used to make dielectrics, which ones tend to be lossy, and what causes losses to increase?

2d.2 • Dielectrics • 000 • 8t67KqZJ

Which capacitors are low-loss, stable and good for RF, normally around the low pf range?

2d.3 • Capacitor • 000 • E2bs6PI2

What happens to a capacitor when its safe working voltage, or breakdown voltage, is exceeded?

2d.3 • Capacitor • 000 • xLIq4u_V

How do you identify the safe working voltage of a capacitor?

2d.4 • Inductor • 000 • FOUzLyD4

Revision mode: the inductor. Give a brief summary of what it does, what affects its value and the unit. Check formulas for inductors in series and in parallel.

2d.4 • Inductor • 000 • OZVRnz0L

what does self inductance mean and what is back EMF?

2d.4 • Inductor • • Djmqkm8X

In what direction are the magnetic force when current flows through a wire?

2d.7 • Time constant • 000 • PDGB_68f

Why is there a time constant for inductors and capacitors

2d.7 • Time constant • 000 • DGnw4qzj

What happens after one time constant has elapsed in an RL circuit, and also 5 time constants?

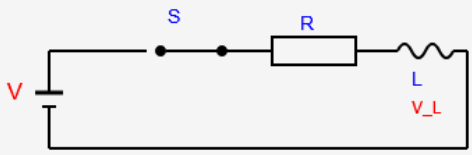
2d.7 • Time constant • 000 • jJL0xDVW

What happens after one time constant has elapsed in an RC circuit, and also 5 time constants?

2d.7 • Voltage across Inductor in DC circuit • 000 • WGZZCNQP

What does the graph of Voltage over time look like as the switch is closed?

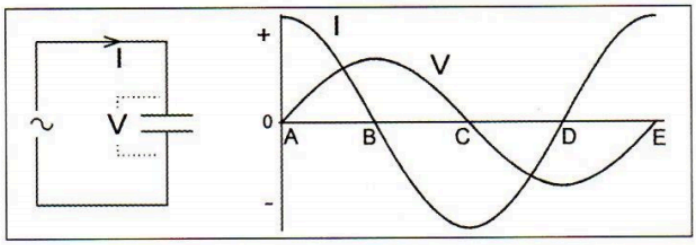
RL Circuit: Voltage Across Inductor

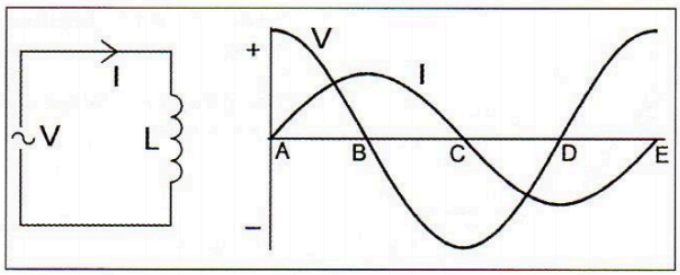


Key Principle: When the switch closes, the inductor opposes the sudden change in current by generating a back-EMF (voltage). Watch how the voltage across the inductor (V_L) changes over time!

2e.3 • Phase difference • 000 • K3f1UiBo

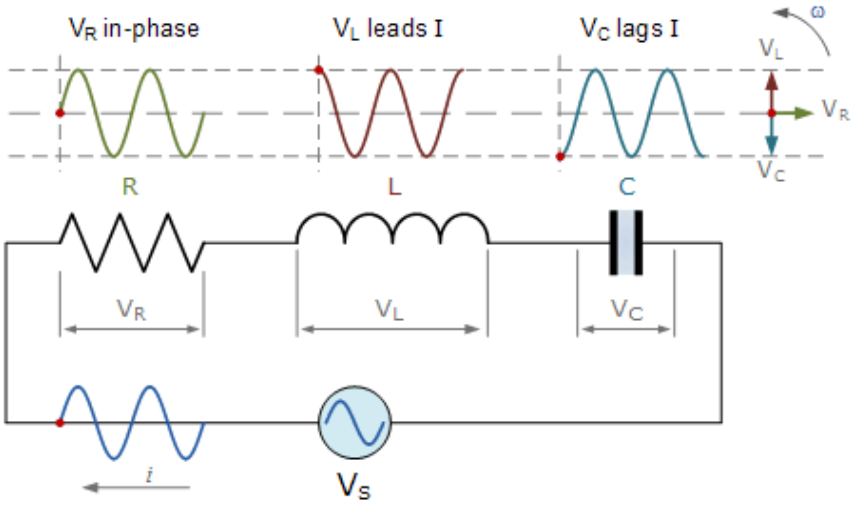
From the intermediate course, we know that in circuits with pure Capacitance or pure Inductance, there is a 90 degree phase difference between voltage and current. Now we need to know which leads which...





2e.3 • Phase difference • 010 • UHcSkdoI

What is the phasor diagram for voltage in an AC series circuit consisting of a resistor, an inductor and a capacitor?



2e.3 • Capacitive reactance • 000 • OB47yhKe

What is the formula for the reactance of a capacitor, what does the graph of Capacitive Reactance vs frequency look like, and can you find it in EX309?

2e.3 • Inductive reactance • 000 • cFx7kOmd

What is the formula for the reactance of an inductor, what does the graph of Reactive Reactance vs frequency look like, and can you find it in EX309?

2e.3 • Hints and tips • 900 • BCHjk6FS

How do you get 'pi' to appear on your calculator?

2e.3 • Inductive reactance • 200 • 5lC4HSSk

Calculator practice: calculate the INDUCTIVE REACTANCE of a $10\mu H$ inductor at 7MHz. Hint: use the REPLAY button and its arrows to check the numbers have been entered properly.

2e.3 • Capacitive reactance • 000 • t7V6D5iL

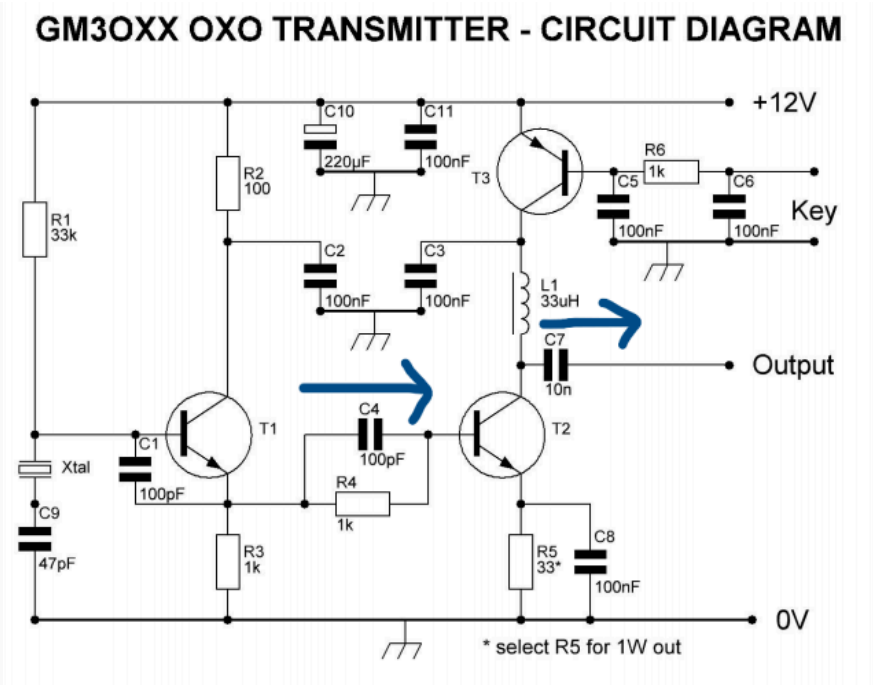
Calculator practice: calculate the CAPACITIVE REACTANCE of a 22pF capacitor at 10MHz. Hint: use the brackets!

2e.3 • Capacitive reactance • 000 • MlZ9XKFh

If the CAPACITIVE REACTANCE of a 22pF capacitor is 723 Ω, what is the frequency?

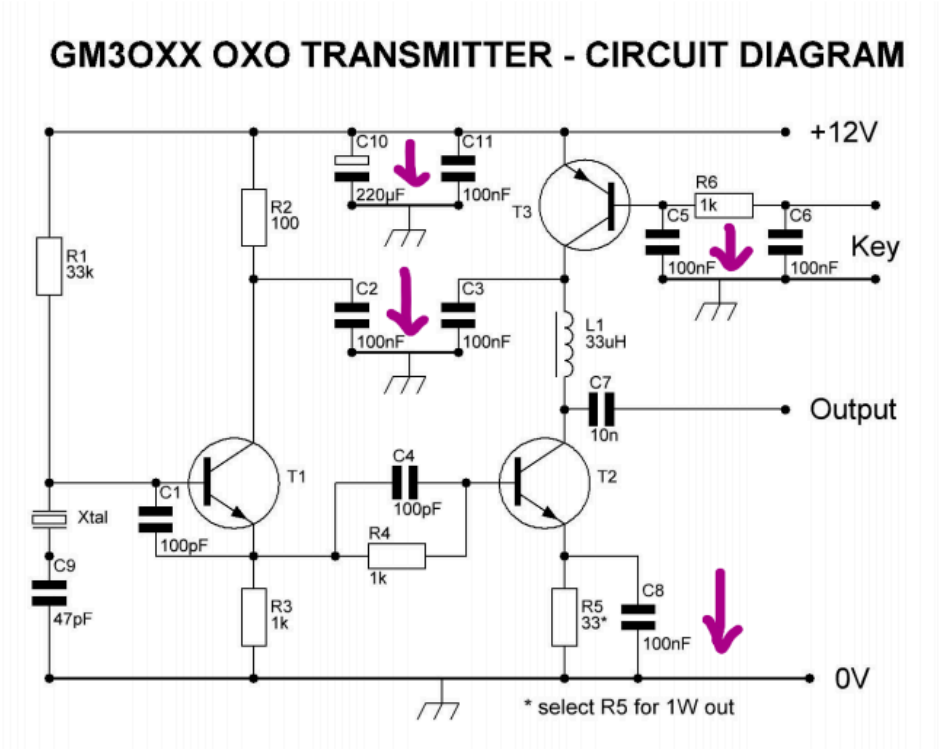
2e.4 • Capacitor uses • 000 • XHrZd8SU

How are capacitors being used in this diagram? Hint: look at the arrows. It won't have the description or the arrows on the real thing.



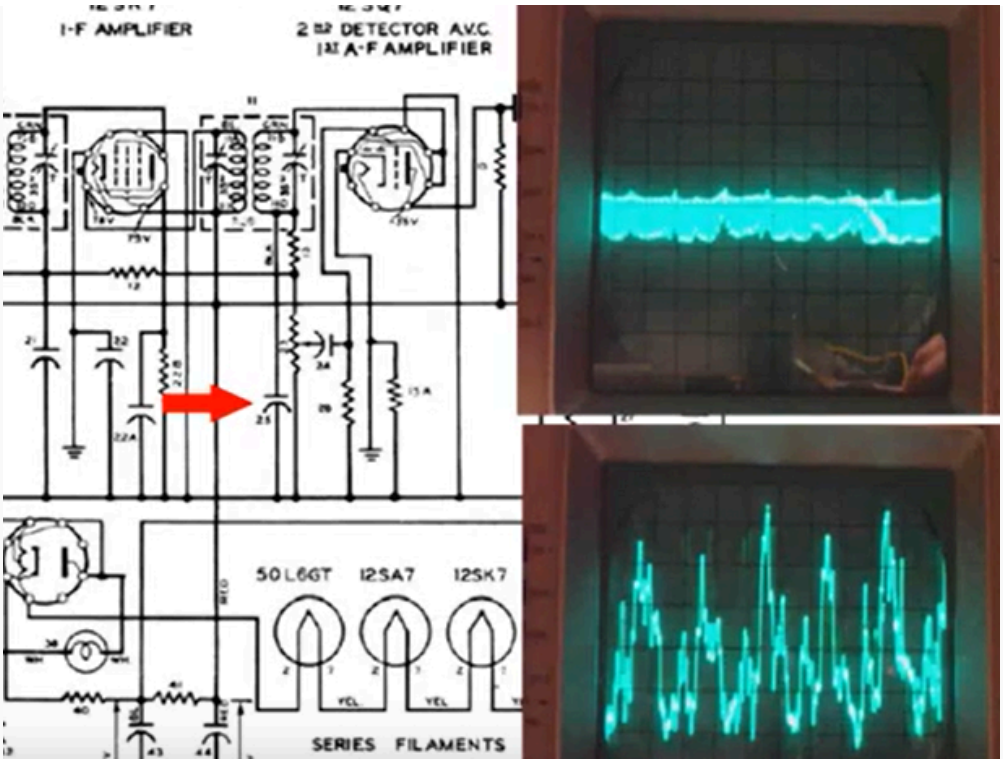
2e.4 • Capacitor uses • 000 • GBtkMjhk

What is happening in this diagram?



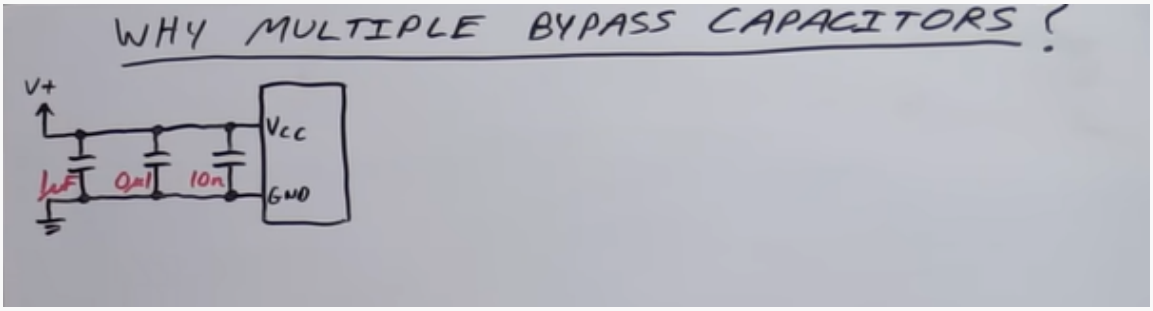
2e.4 • Capacitor uses • 000 • UOpfSJqm

What is RF bypass?



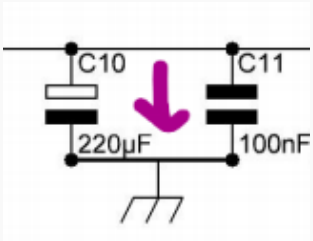
2e.4 • Capacitor uses • 000 • V3fn3Qol

Why do we use multiple bypass capacitors on a power supply? Values like $1\mu F$, 100nF, 10nF and 1nF are common and actually 3-4 may be used to take signals down to earth.



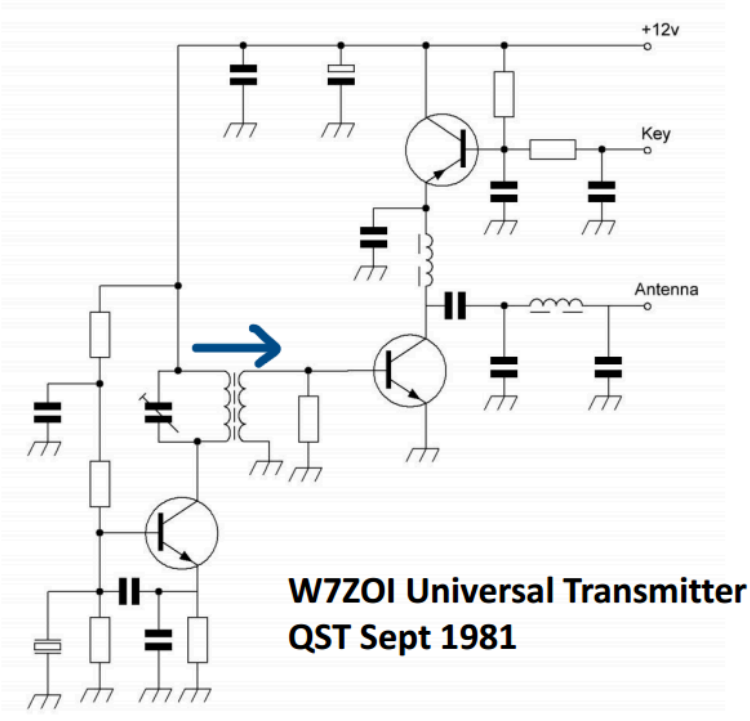
2e.4 • Capacitor uses • 000 • a52zD3NT

Here is a small piece of circuit with the capacitor connected between a 12V DC power supply and earth. Why would it be here?



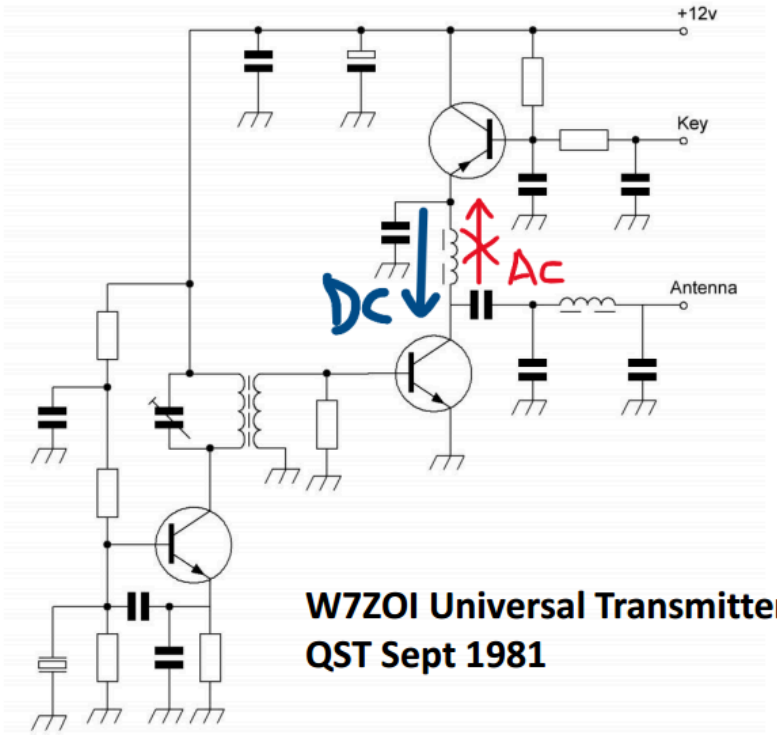
2e.5 • Inductor uses • 000 • x8Fj1aqF

How are inductors used in this diagram?



2e.5 • Inductor uses • 000 • -ybShg7h

How are inductors used in this diagram?



2e.6 • Impedance • 000 • 7YKuHqny

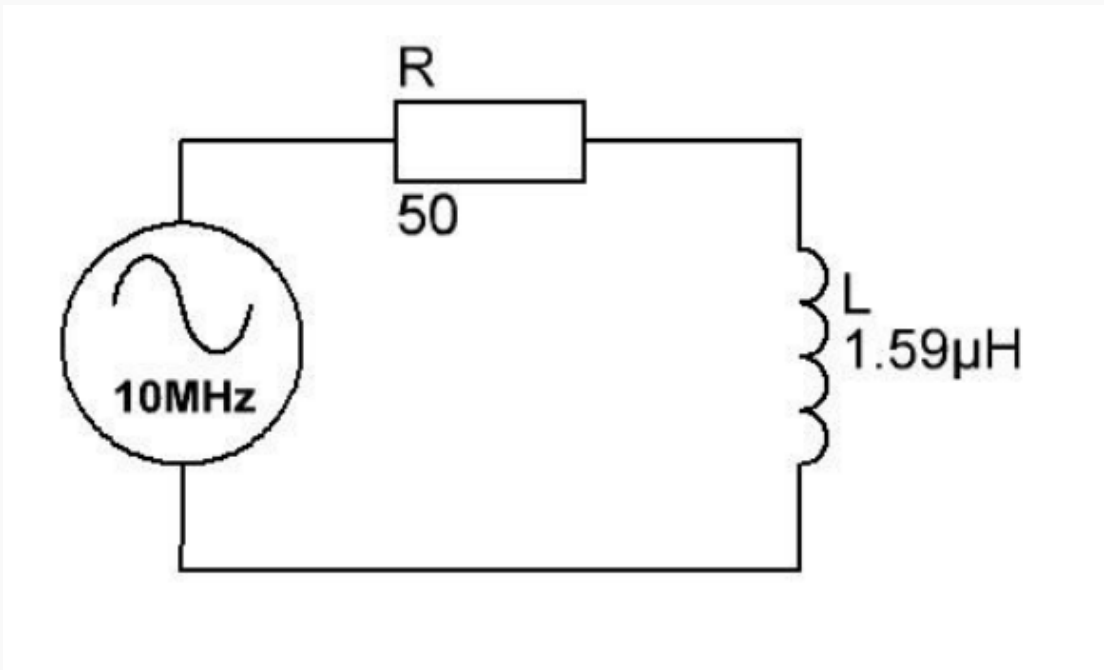
How is Impedance calculated in an RC or RL circuit?

2e.6 • Impedance • 000 • Kd_v9eaD

What is the visual representation of Impedance calculated in an RC or RL circuit?

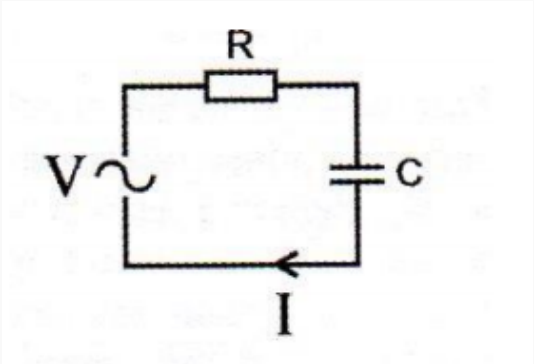
2e.6 • Impedance • 000 • WM6LX6G-

What is the impedance of the circuit in the diagram?



2e.6 • Impedance • 000 • D_qymJnT

What is the impedance of the circuit in the diagram?



2e.6 • Impedance • 000 • nODdsBIO

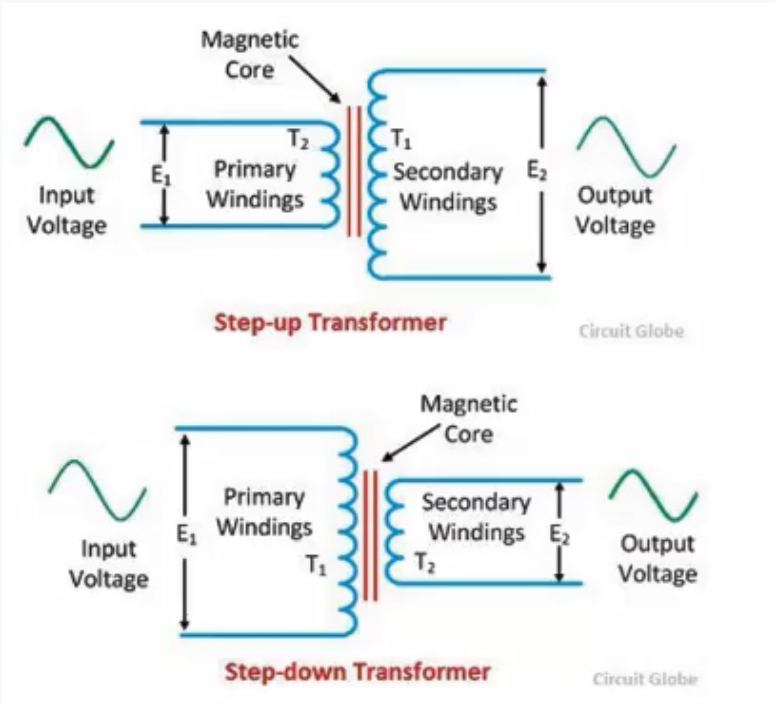
Really nasty question

Really nasty question gives you component values and supply voltage – what is V across C

- Need to work out X
- Use X and R to work out Z
- Use Z to work out I
- Use I and X to work out V
- *Worked example in Weekly Instructions*

2g.1 • Transformers • 010 • VUI7Q7FV

What happens in a step-up or step-down transformer?

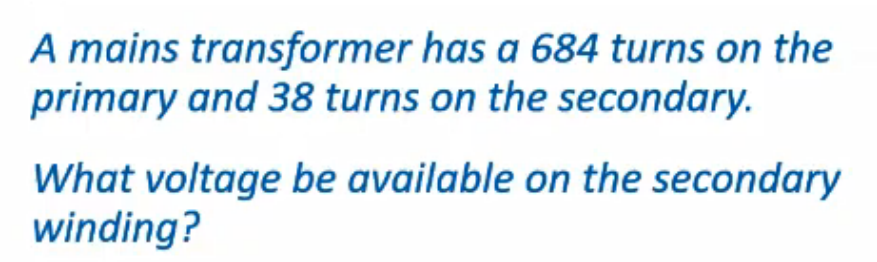


2g.1 • Transformers and the Turns Ratio • 020 • PBPV40R3

How is voltage affected by the transformer's turns ratio?

2g.1 • Transformers and the Turns Ratio • 030 • R7SVGFVD

You can use the 2 step approach using Turns Ratio, or the formula on EX309 C1R10



2g.1 • Transformers and Current • 040 • IF6VCZ6Q

So what happens to current when a transformer is used?

2g.1 • Transformers and Current • 050 • MEAXD722

No question provided

A mains transformer has a 684 turns on the primary and 38 turns on the secondary. If the secondary winding is providing 20A, how much current is flowing in the primary?

2g.1 • Transformers: Summary • 060 • BDXQD8ZN

What are the key points concerning Transformers and the Turns Ratio?

Golden Rule: Power is Conserved

$P_{primary} = P_{secondary}$

(in an ideal transformer)

2g.1 • Transformers: Summary • 070 • 3CZNCDD8

What are the formulae concerning Transformers and the Turns Ratio?

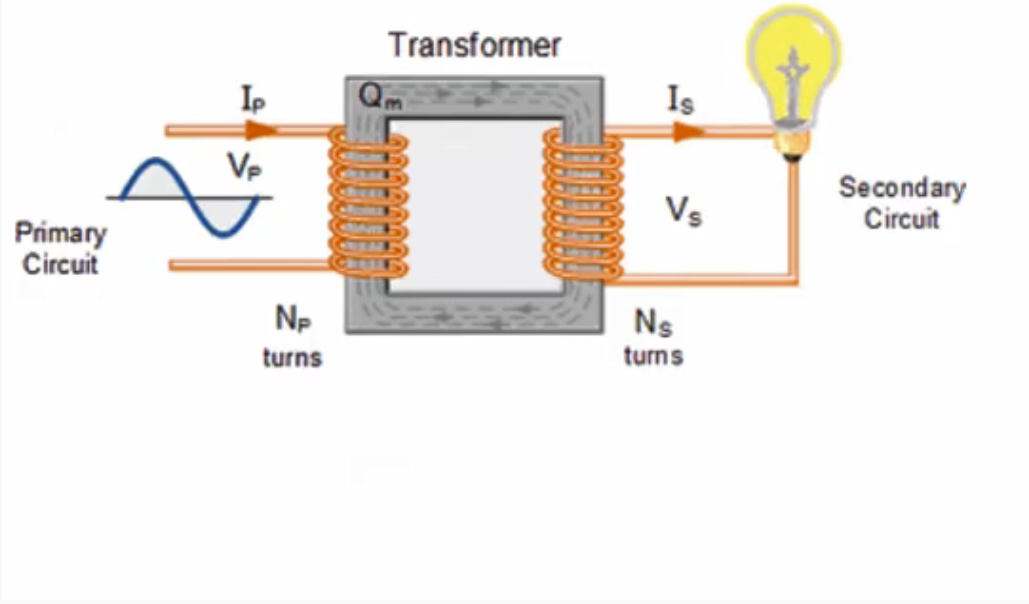
2g.1 • Transformers, Turns Ratio and Impedance • 000 • SPFOCG11

No question provided

You are making a transformer to feed a high impedance antenna. The design shows 2 turns on the primary and 14 turns on the secondary. Assuming you are feeding this with 50Ω coax, what is the antenna's impedance?

2g.1 • Transformer Core • 000 • EH27UN32

What would be the main points associated with the construction of a transformer?

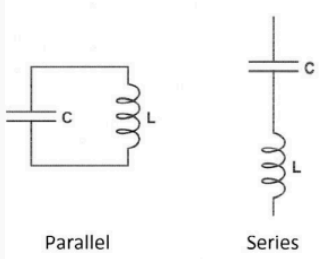


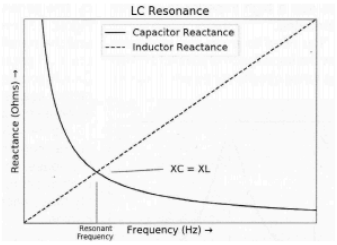
2g.1 • Transformers the last bit • 000 • DF3R60K9

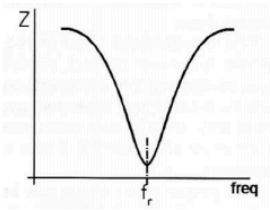
In the full manual the section on transformers is all about the turns ratio, plus this last bit. There are many other references in the text to transformers though, but it isn't collected together.

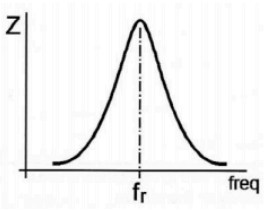
2h.1 • Tuned circuit • 000 • -cve6QhE

Recap on tuned circuits. What do you remember? Which is the acceptor circuit, and which is the rejector circuit? I always remember PARALLEL for PEAK Impedance.



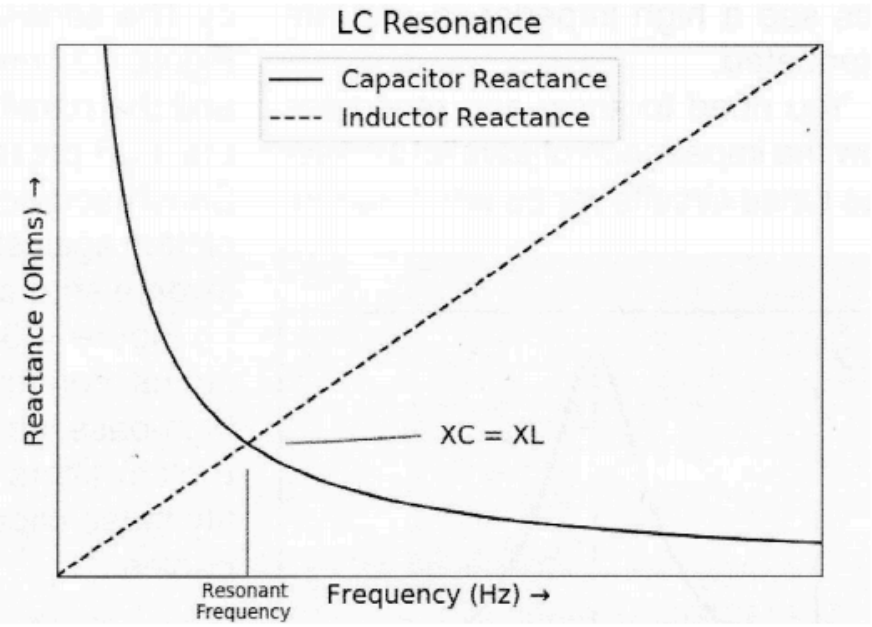






2h.1 • Tuned circuit • 000 • 80kswhtQ

What is the resonant frequency formula that applies to both series and parallel tuned circuits?



2h.1 • Tuned circuit • 000 • Icrs9YHB

How do you transpose the resonant frequency formula to solve for C or L?

2h.1 • Tuned circuit • 000 • YlWQ4xfJ

Calculate resonant freqency of 22pf capacitor with $10\mu H$ inductor

2h.2 • Crystals • 000 • s7y_uZJc

Summarise what you know about crystals and how they're used.

2h.2 • Crystals • 000 • 0S0usOAm

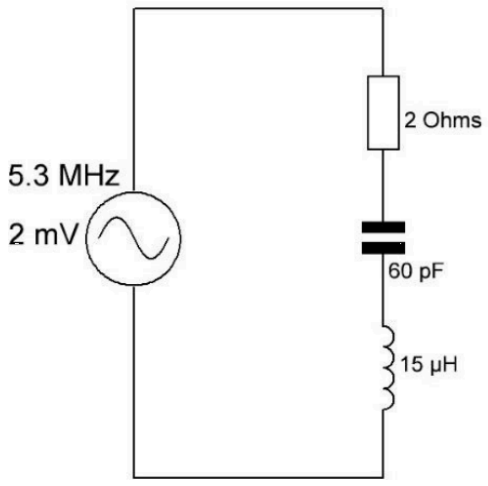
Identify a circuit with crystals in it

2h.2 • Crystals • 000 • knldQzuu

What does the specification of a crystal's performance look like?

2h.4 • Q Magnification • 000 • hQ5vWwHT

In this circuit, the resonant frequency is 5.3MHz and there is an RF supply of just 2mV across the series circuit. Q MAGNIFICATION hinges on the fact that when a series tuned circuit is at resonance, the reactances X_L and X_C are equal and opposite, so they cancel each other.



2h.4 • Q Magnification • 010 • SIT3M950

what is Q-factor?

2h.4 • Tuned circuit • 000 • TuDkF5TC

voltages and circulating currents in tuned circuits can be very high...

2h.4 • Tuned circuit • 000 • ck-ql2VL

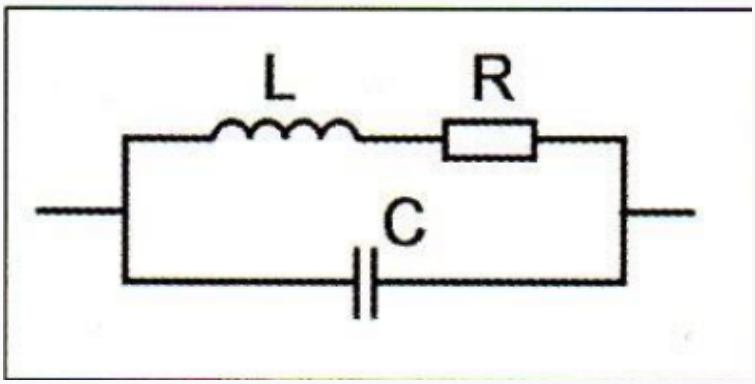
Recall the definition of the half power point of resonance curves...

2h.4 • Tuned circuit • 000 • pnYosChc

Apply the equation for Q given the resonant frequency and the half power points on the resonance curve...

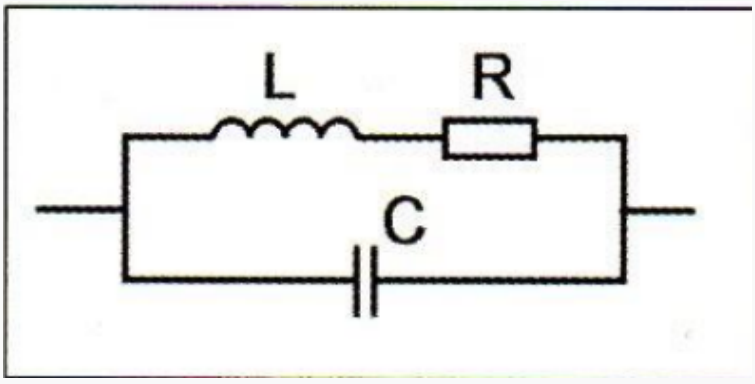
2h.5 • Dynamic resistance • 000 • gsL6QJgR

Understand the meaning of dynamic resistance, R_D...



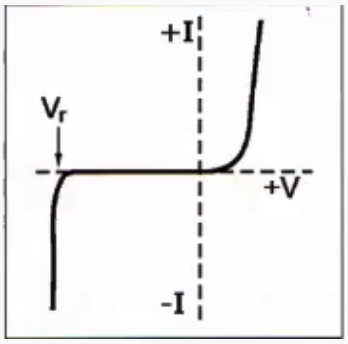
2h.5 • Dynamic resistance • 000 • DLYVIUI7

In this example, the inductor is $5\mu H$, the capacitor is 200pF and the resistor is 0.5Ω. Now calculate R_D, the dynamic resistance:



2i.1 • Zener diode • 000 • W7N9WZD4

What component is this characteristic curve for?



2i.1 • Zener diode • 000 • 88PDHM45

What are the characteristics of the Zener diode?

2i.3 • Transistor biasing • 000 • BVAC1G76

Recap on intermediate work, noting that if in doubt, do not break into a sweat, as it may be up to 1 mark...

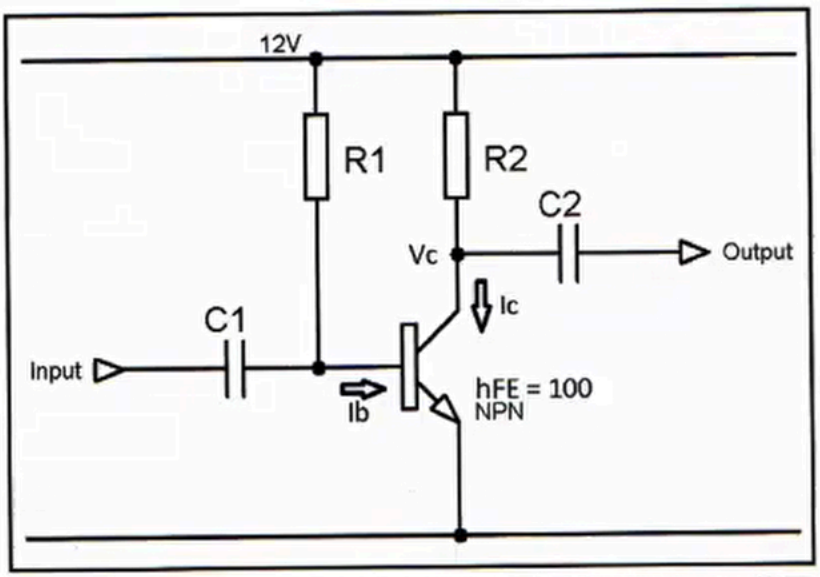
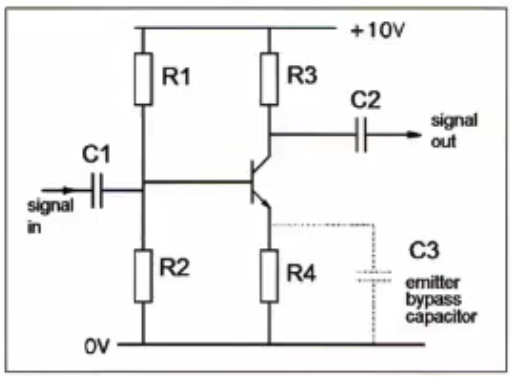


Fig 5.13: A simple single transistor common emitter amplifier

2i.3 • Transistor biasing improvements • 010 • SCNA16XE

Several improvements to biasing over the basic circuit:



2i.4 • Transistor Configurations and Classes • 000 • IZO6I0DM

This is the introduction to transistor configurations and classes. **The golden rule: a transistor has three connections, so one for input, 1 for output and 1 shared (ground?):**

2i.4 • Transistor: COMMON BASE • 010 • 5FEROA4K

This is common base:

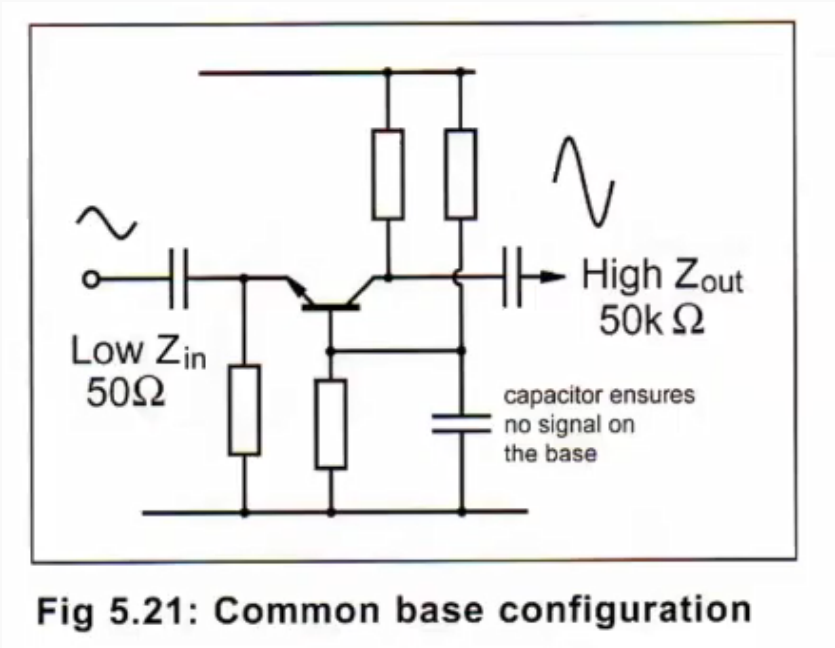
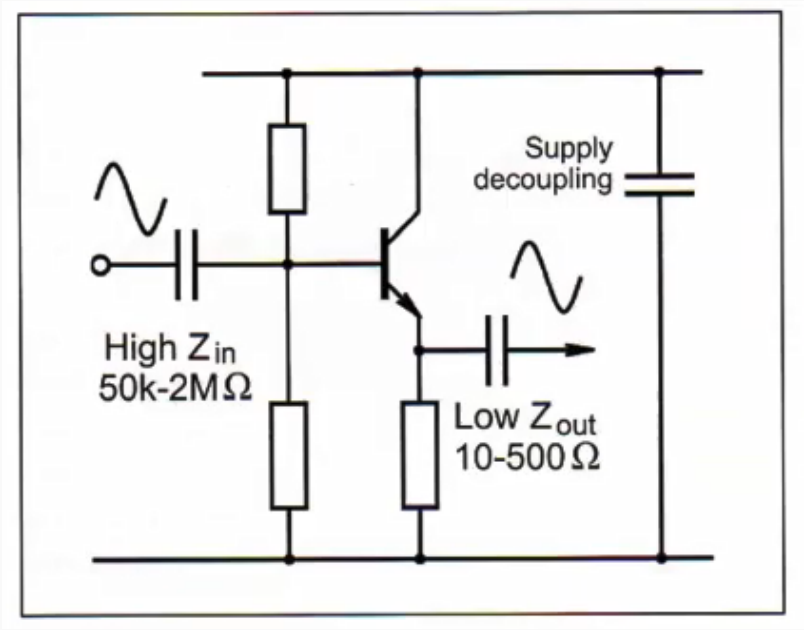


Fig 5.21: Common base configuration

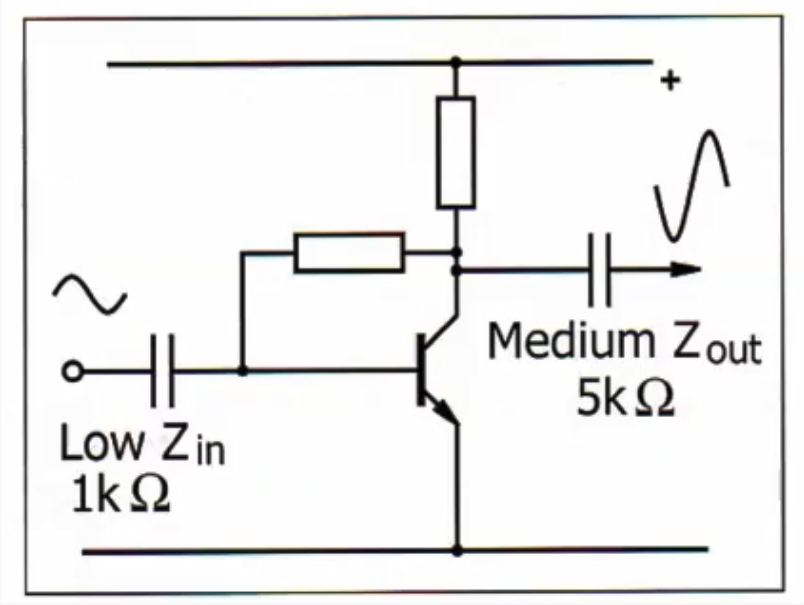
2i.4 • Transistor: COMMON COLLECTOR or EMITTER FOLLOWER • 020 • 9EHET2C4

This is common collector, or emitter follower:



2i.4 • Transistor: COMMON EMITTER • 030 • ML02I9RY

No question provided

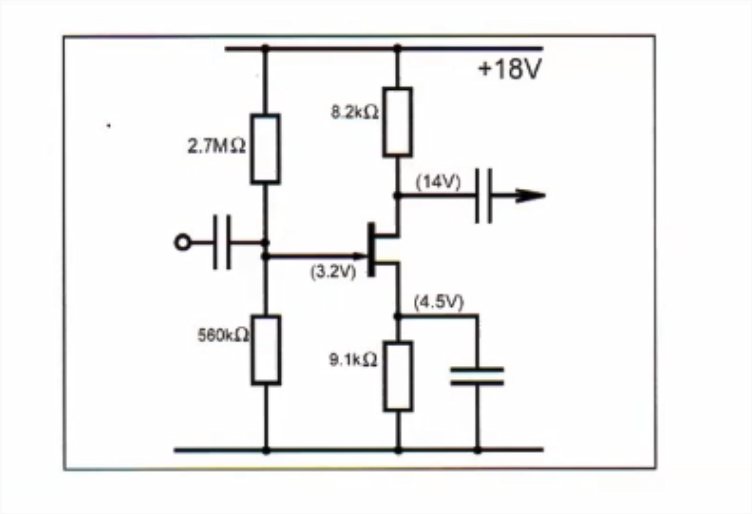


If you can understand this...

Tabular summary:

2i.4 • Field Effect Transistor (FET) • 060 • 8EJYV1JR

No question provided



2i.4 • Field Effect Transistor (FET) biasing • 070 • V9QVF9GP

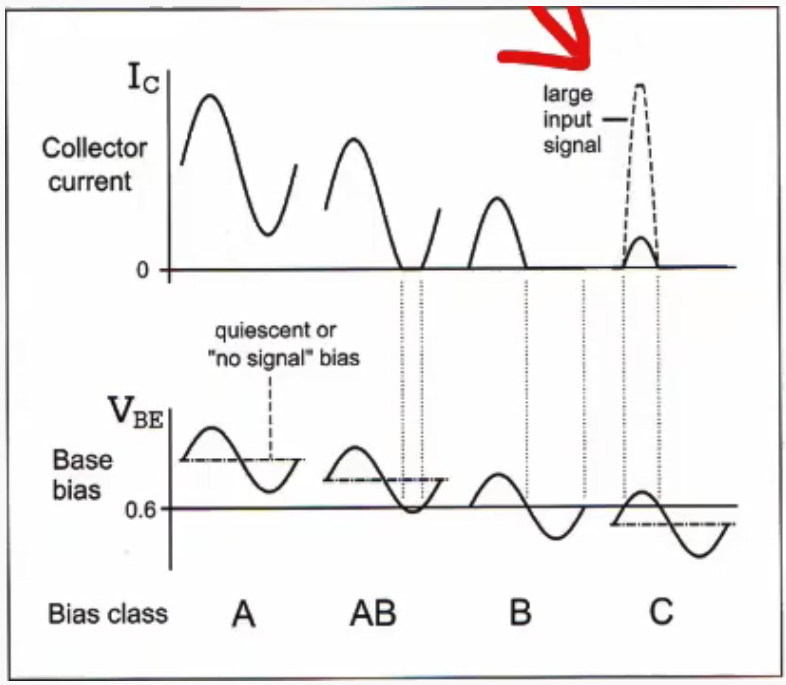
FET biasing:

2i.4 • Field Effect Transistor (FET) biasing • 080 • ARLU7OZF

More on FET biasing:

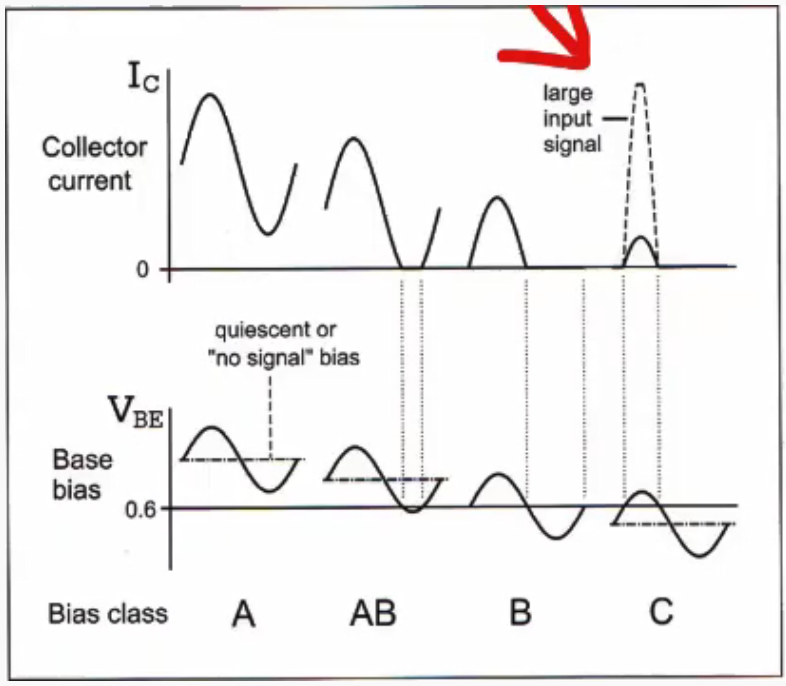
2i.4 • Transistor Class A • 000 • CBSP81G4

What are the characteristics of class A amplifiers?



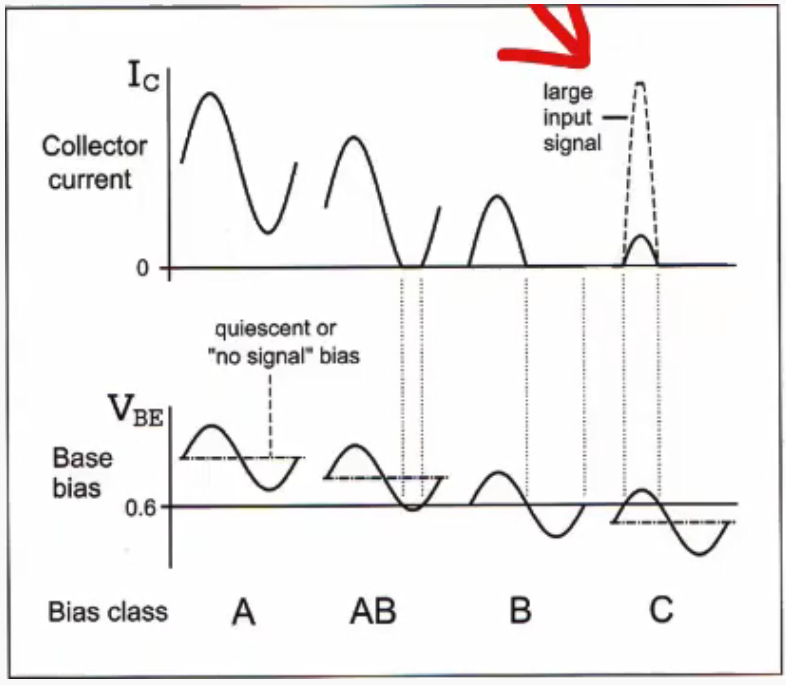
2i.4 • Transistor Class B • 010 • 4OZTWMOE

What are the characteristics of class B amplifiers?



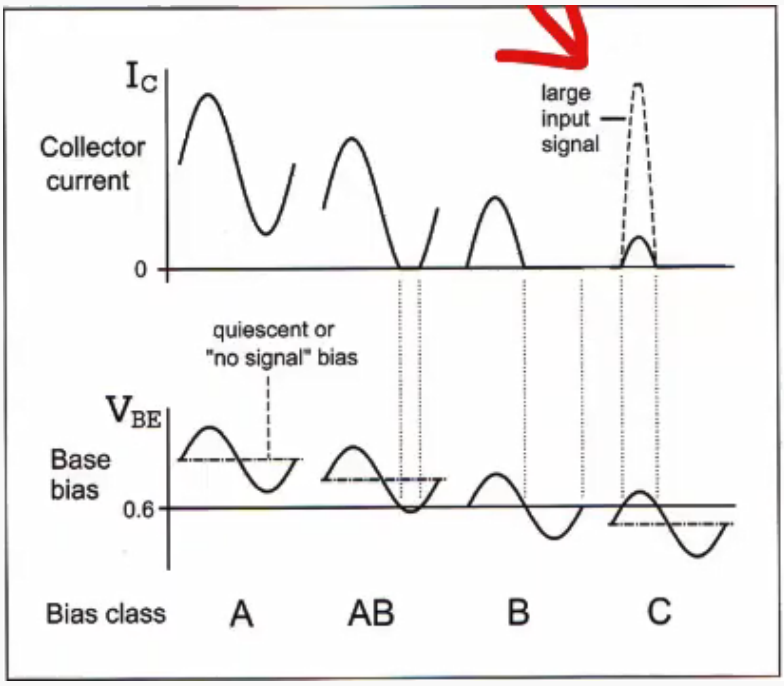
2i.4 • Transistor Class A/B • 020 • 5OQQ9V1J

What are the characteristics of class A/B amplifiers?



2i.4 • Transistor Class C • 030 • 2835LSIX

What are the characteristics of class C amplifiers?



2i.4 • Power amplifier class summary • 040 • BC48WF20

Power amplifier classes and biasing:

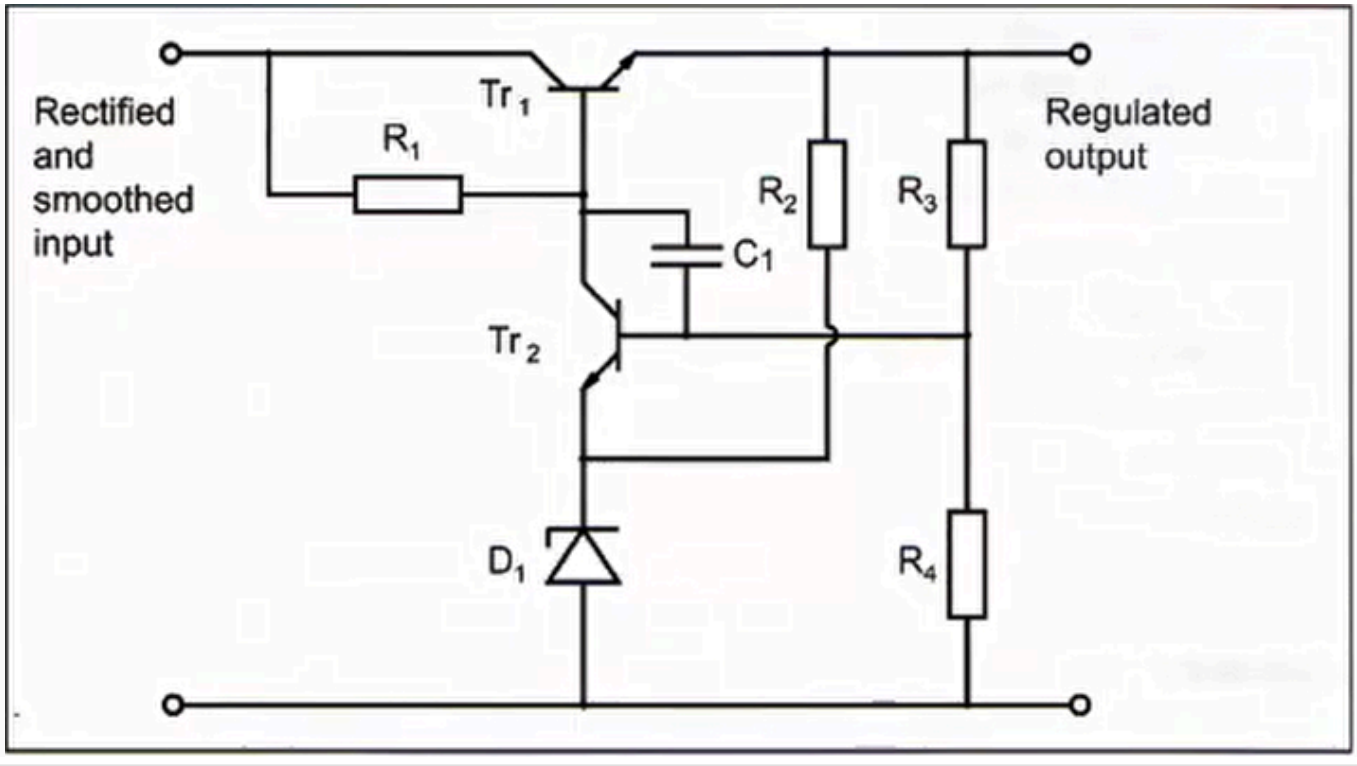
Class	Output waveform	Efficiency	Advantages	Disadvantages
A	Full 	25-30%	No distortion or negligible distortion Simple design Best linearity	Inefficient Generates much heat High cost or low durability
AB	Almost full 	50-60%	Good efficiency Minor harmonic distortion Good linearity	High cost
B	Half 	65%	Good efficiency Low cost Acceptable linearity	Increased distortion may be unacceptable for AF
C	Less than half 	80%	Best efficiency Lowest cost	High distortion Poor linearity

2i.4 • spare • •

No question provided

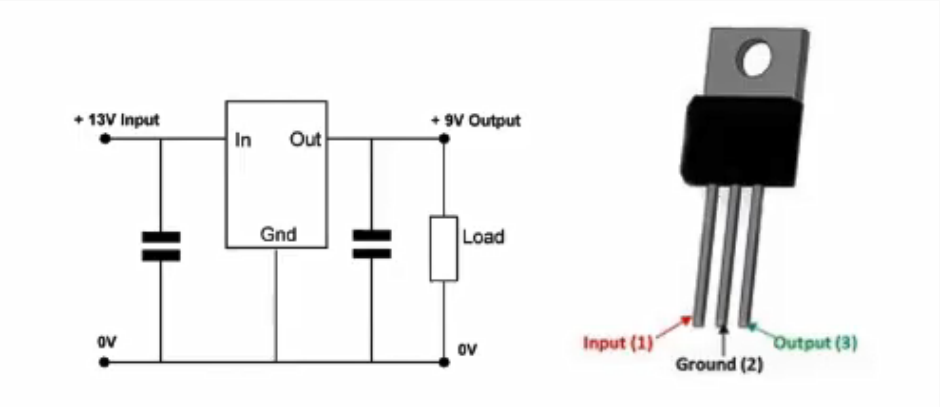
2j.2 • Voltage stabilising circuit • 000 • 9F3Y4PBB

Can you recognise this circuit?



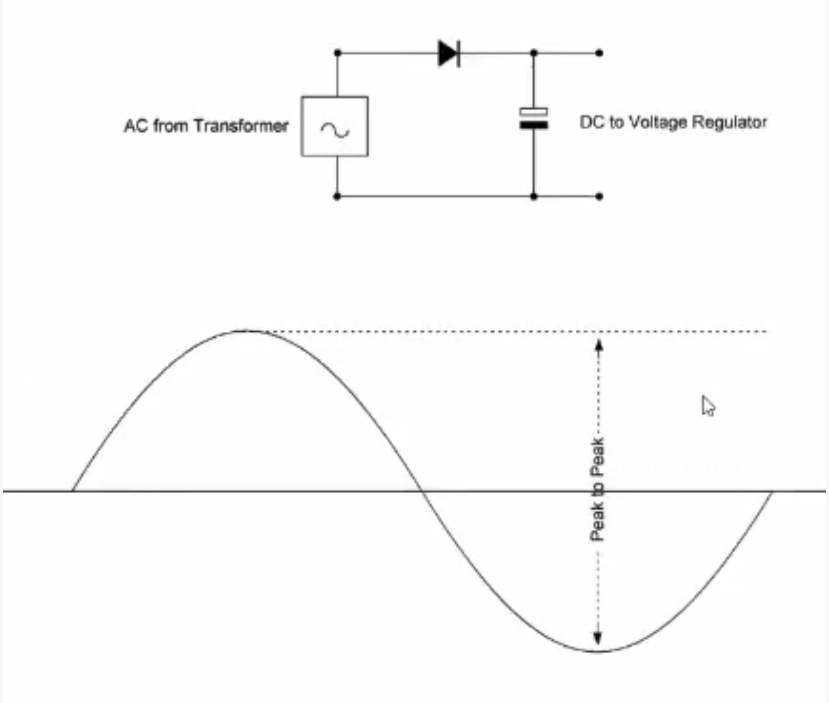
2j.2 • Voltage stabilising circuit • 010 • 7KZW7BKB

What does this circuit do?



2j.3 • Rectifier diodes: Peak Inverse Voltage (PIV) rating • 000 • 7YY7QKOY

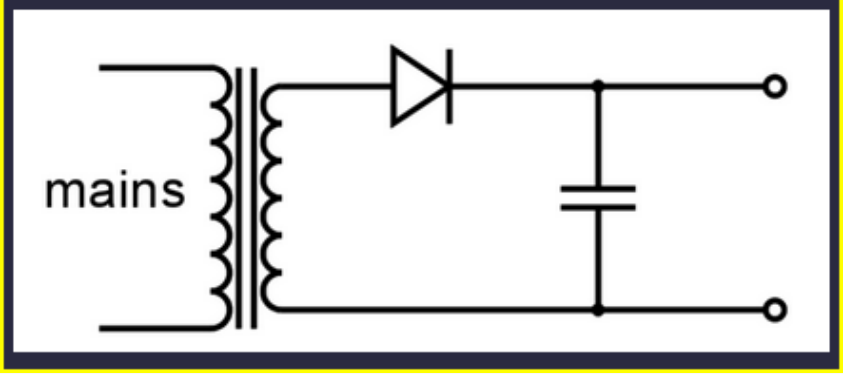
Rectifier diodes must be rated for at least the peak to peak voltage:



2j.3 • Rectifier diodes: Peak Inverse Voltage (PIV) rating • 010 • U8EYY8BA

No question provided

Q1/2 If the secondary voltage from the transformer is 10V rms the peak inverse voltage rating (PIV) of the diode should be at least:



2j.3 • Rectifier diodes: Peak Inverse Voltage (PIV) rating • 020 • AKBBONRS

No question provided

Q1/2 The rectifier diodes in a mains operated 12V stabilised power supply have failed and must be replaced. Which of the following diodes would be chosen to replace them?

Diodes with a PIV rating equal to or greater than the original diodes D [3]

Diodes with a current rating equal to or greater than the original diodes.

Diodes with a PIV rating of 12V

Diodes with a PIV and current rating equal to or greater than the original diodes

2j.4 • linear power supply • 000 • KTOX4MGD

What can you remember about linear power supplies from intermediate?

2j.4 • linear power supply • 010 • ZOL062H9

What can you remember about half wave rectification from intermediate?

2j.4 • linear power supply • 020 • YPCGDC5U

What can you remember about full wave rectification from intermediate?

2j.4 • linear power supply • 050 • U6MKCF4N

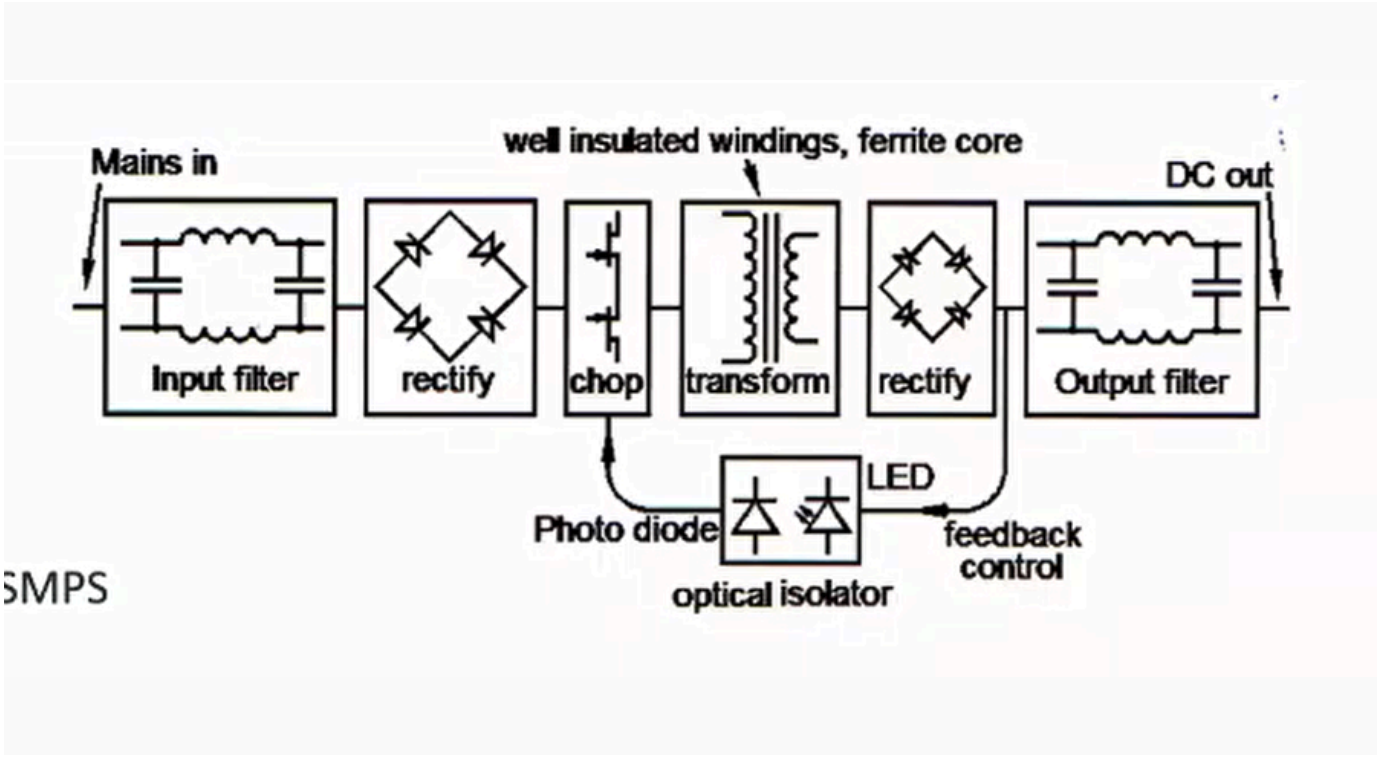
Can you summarise linear power supply stages from intermediate?

2j.4 • switch mode power supply • 060 • ZKFSULI2

This is the revision card. What can you remember from intermediate?

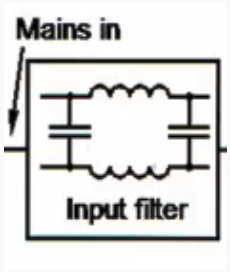
2j.4 • switch mode power supply • 070 • 8H9O1326

What does this block diagram represent?



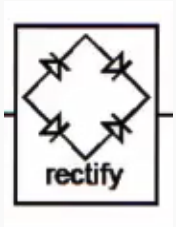
2j.4 • switch mode power supply • 080 • 3JOIANH6

What does this part of the SMPS block diagram represent?



2j.4 • switch mode power supply • 081 • 1M5DTJN3

What does this part of the SMPS block diagram represent?



2j.4 • switch mode power supply • 082 • CAQ7M6XW

What does this part of the SMPS block diagram represent?

2j.4 • switch mode power supply • 083 • 268PL7LC

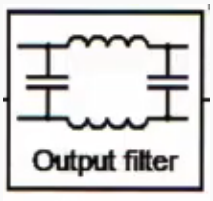
What does this part of the SMPS block diagram represent?

2j.4 • switch mode power supply • 084 • TBAYACBL

What does this part of the SMPS block diagram represent?

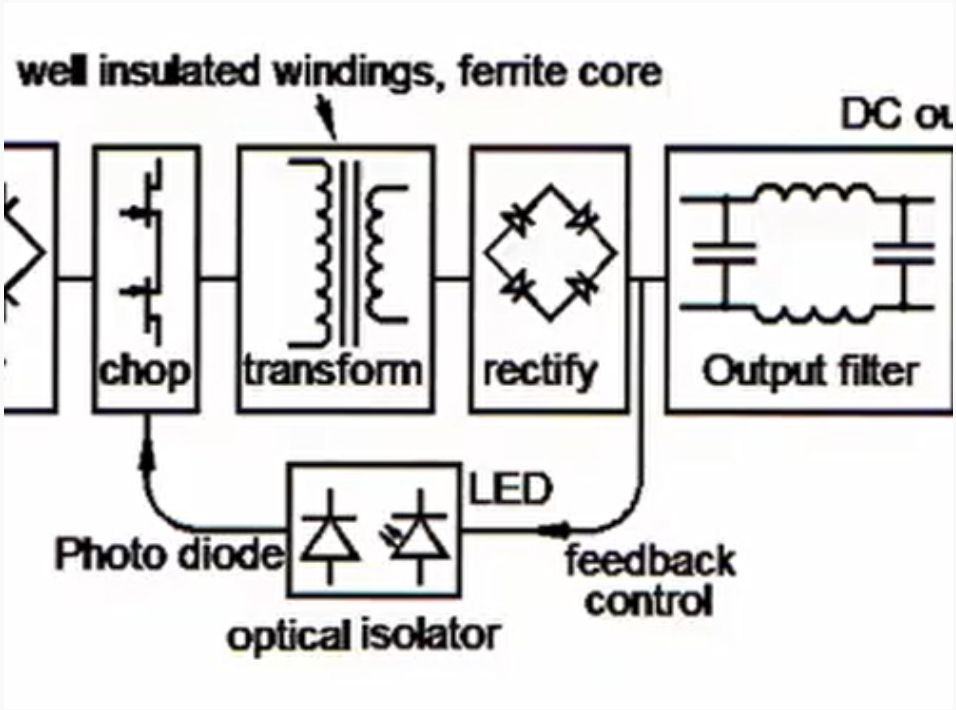
2j.4 • switch mode power supply • 085 • 4FXAKHNF

What does this part of the SMPS block diagram represent?



2j.4 • switch mode power supply • 085 • M57N846D

What does this part of the SMPS block diagram represent?



3a.2 • FM modulation • 000 • 019c4c6e

What do you know about FM modulation, including sidebands? Note the varactor capacitor in the circuit diagram.

Transmitters – FM Modulation

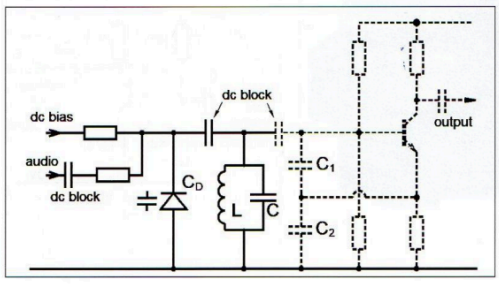
3a.2

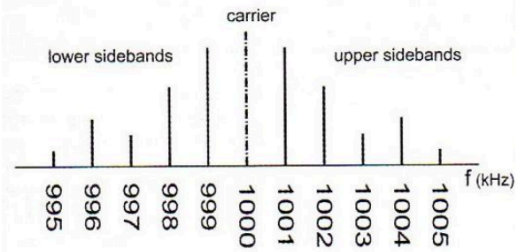
FM Modulator covered in Intermediate
- AF applied to vari-cap (varactor) diode
- Changes capacitance, changes frequency
- Change = deviation
- Maximum Deviation = Peak Deviation = Δf

Modulation Index repeated in Full:
- Peak Deviation ÷ Maximum Audio Frequency
- WBFM example: 75kHz ÷ 15kHz = 5
- NBFM example: 2.5kHz ÷ 3kHz = 0.83

Not obvious but **FM generates sidebands**

Number of sidebands increases with the Modulation Index (Bessel Functions)
- Complexity warning!!!!





3b.1 • Generic transmitter that could be used for SSB • 000 • ec78d5d6

Can you recognise the components of this transmitter?

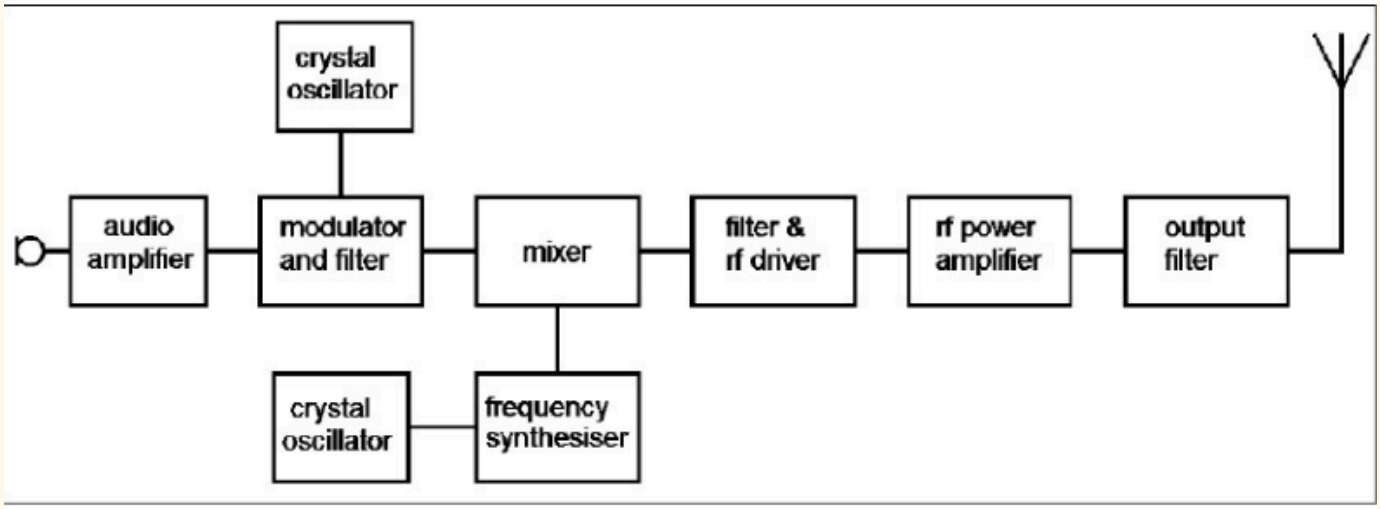


Fig 7.1: Block diagram of a transmitter using a mixer to achieve the final frequency. The modulator stage could be for AM, SSB or FM

3b.1 • FM transmitter with multiplier • 000 • c74fb12f

This FM transmitter uses a multiplier stage to achive the final frequency.

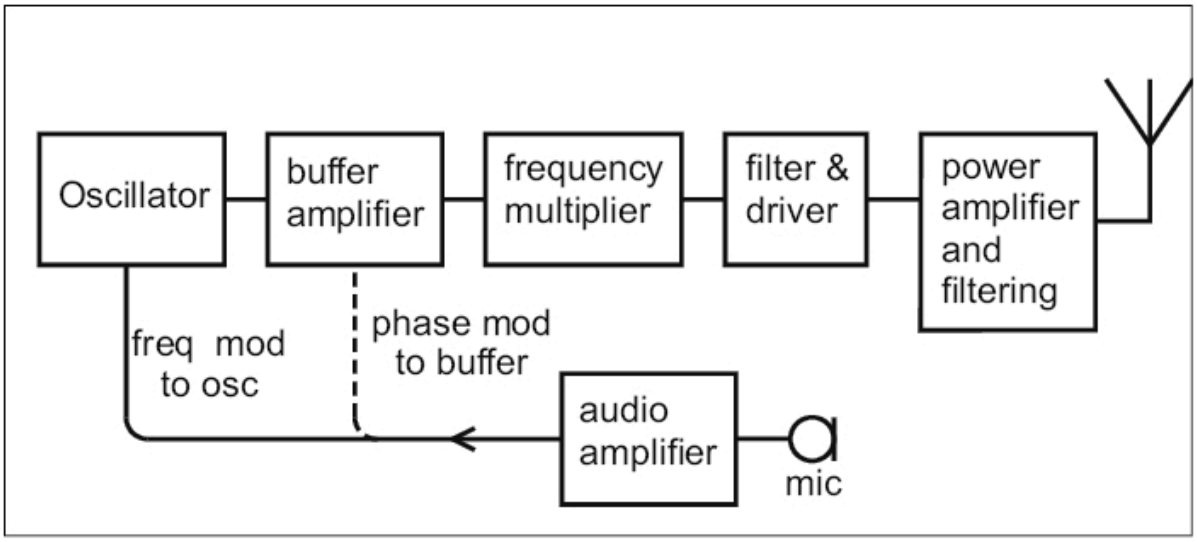


Fig 7.2: Block diagram of an FM transmitter using a multiplier stage to achieve the final frequency

3c.1 • Importance of minimising drift • 000 • 61aa850e

Extra care must be taken with VFOs like the Colpitts Oscillator to minimise frequency drift and maintain calibration accuracy.

- stable voltage supply separated from other stages
- best quality components e.g. tightly wound coil on grooved former of low loss material
- rigidly constructed variable capacitor with insulated coupling to front panel controls
- short rigid wiring between components
- away from heat sources to minimise temperature effects
- a suitable way to check the frequency

Why minimise drift?

- Helps to make contacts!
- Licence requirement to stay in band

3c.1 • More on drift from the Transmitter Interference chapter • 010 • 73be52ff

More on drift...

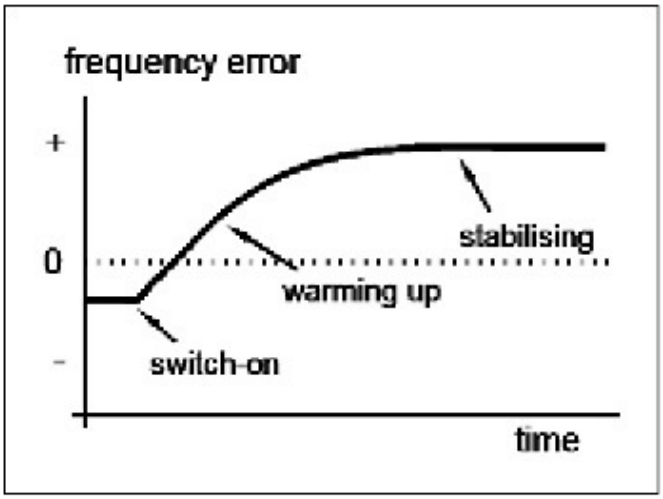
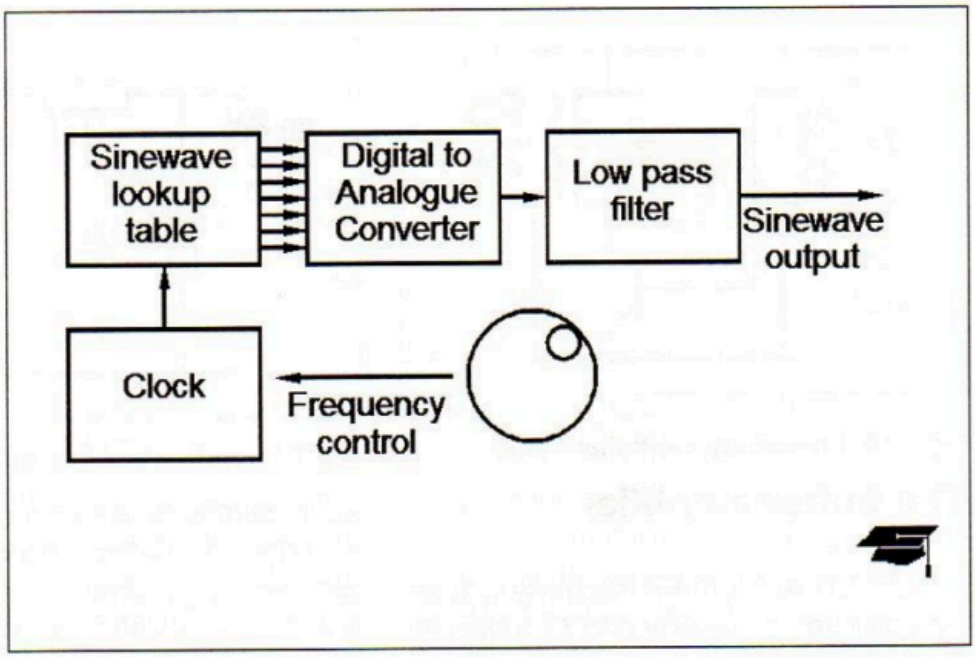


Fig 8.1: Frequency errors and drift in a transmitter oscillator

3c.3 • Direct Digital Synthesiser (DDS) • 000 • 40e18155

What are the components of a DDS?



3d.1 • Multipliers can be used to change frequency • 000 • 3c8de3ed

What do you know about multipliers, including when they can't be used.

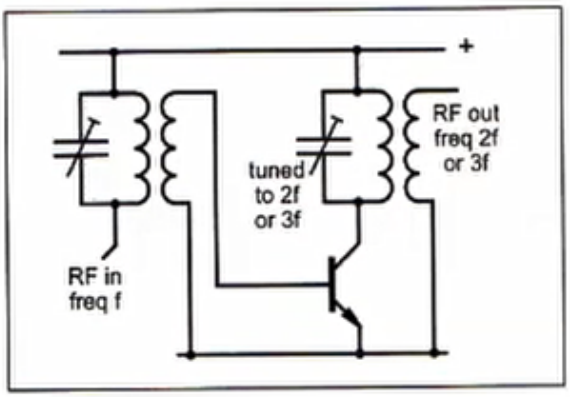


Fig 7.10: Frequency multiplier stage

3d.1 • Why can't multipliers be used for AM and SSB • 000 • 5c9855c6

This slide explains

3f.4 • transmit mode affects average power rating • 000 • 7C9HAAVG

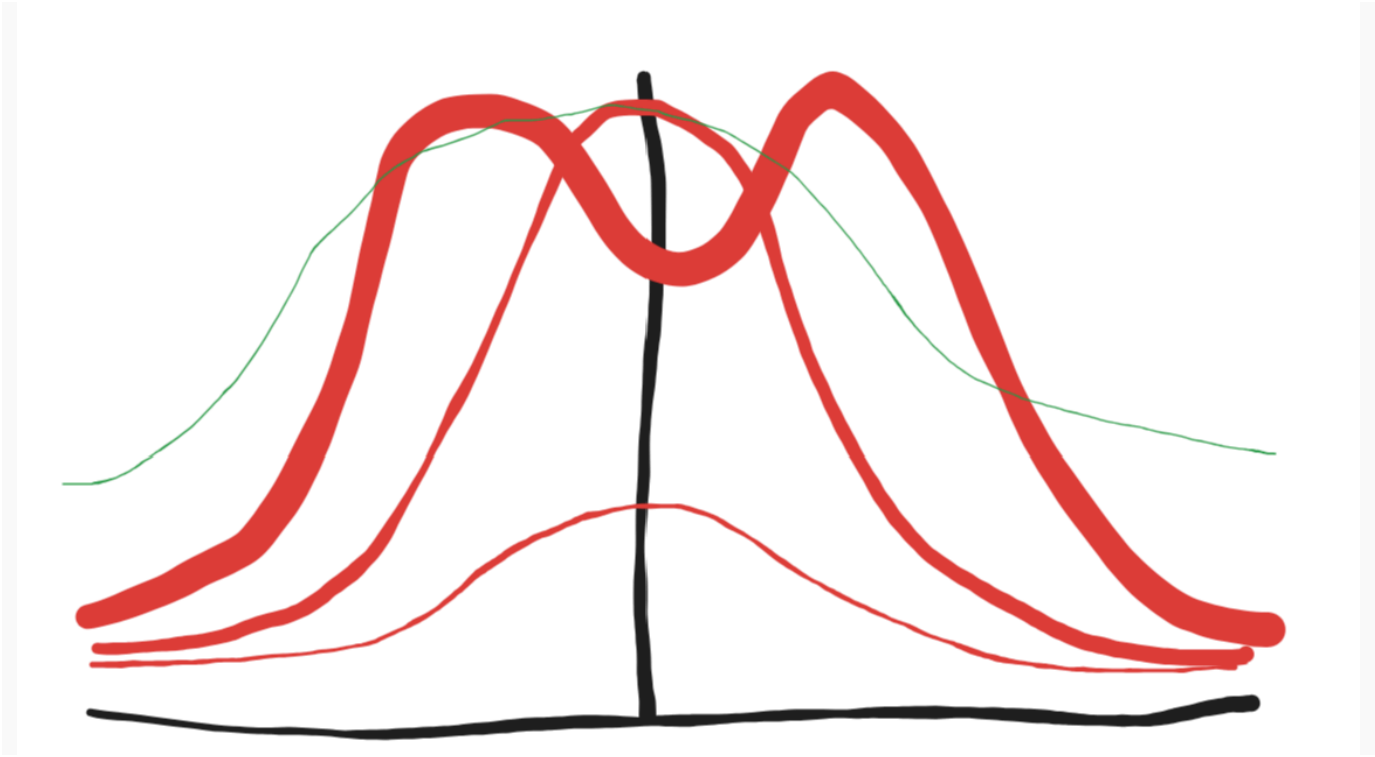
What happens to average power vs peak power when PTT is pressed for each transmit mode?

3h.3 • Dynamic range • 000 • 4CJFURGF

What are the basic principles of dynamic range?

3i.4 • Intermediate Frequency Transformer • 000 • 22U8GX7A

Identify these coupling curves for an intermediate frequency transformer:



3j.1 • Operation of RF amplifier • 000 • 44CLLJNG

Can you recognise an RF amplifier, and it's main components

3j.1 • Care is needed to use an RF pre-amplifier • 010 • 44CLLJNG

Can you discuss placement options and potential pitfalls?

3j.1 • Pre-amplifier with an FM signal • 020 • TQMNWCWN

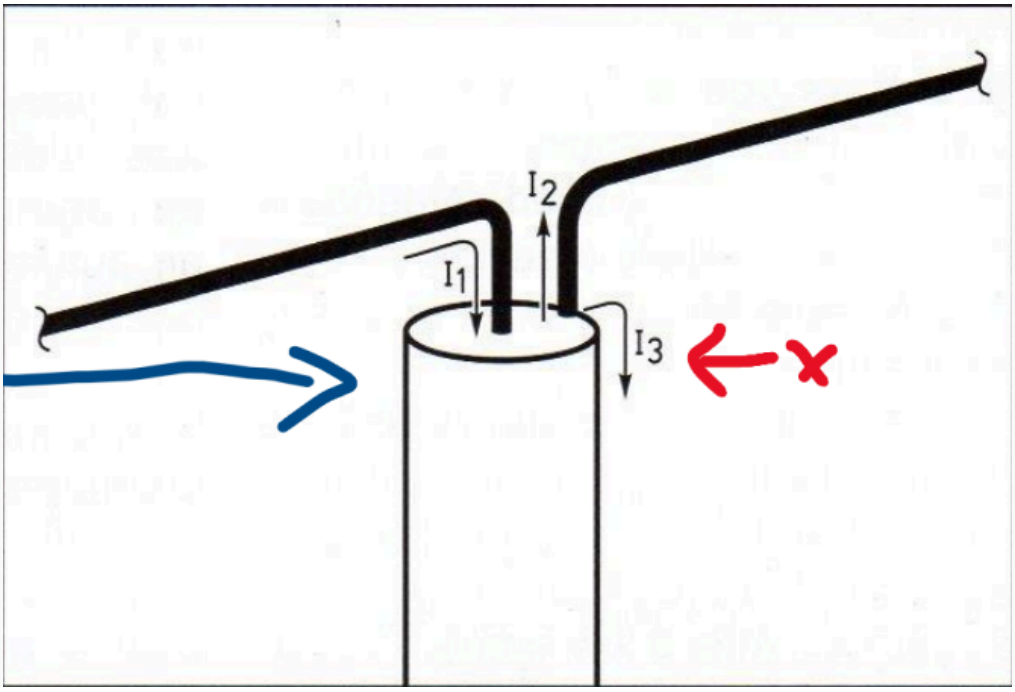
Explain how a pre-amplifier can help an FM signal

4a.3 • Velocity Factor in feeders • 000 • U6HKKAN6

What needs to be done with feeders to take into account their velocity factor?

4b.1 • why do we need a balun • 000 • TEPQ74W0

Can you describe the currents seen on the diagram, and what a balun does?

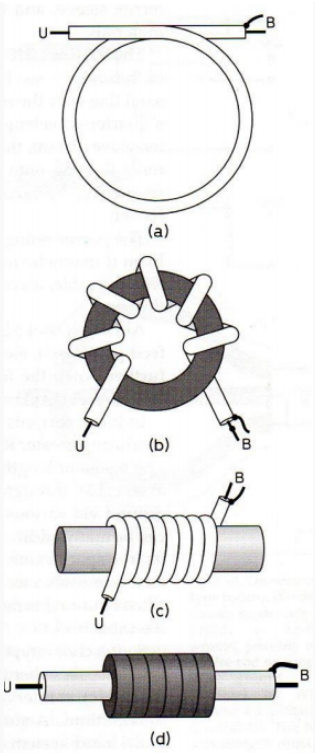


4b.1 • Where is a balun used? • 010 • H06FPYC0

In what circumstances are baluns used?

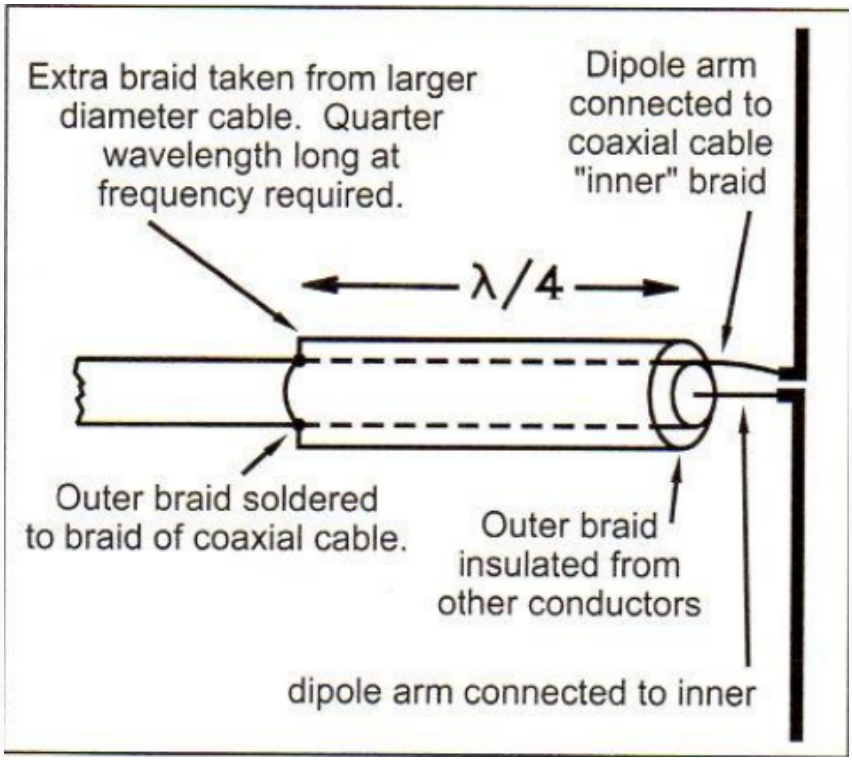
4b.1 • Choke balun • 020 • 111U764R

Can you recognise what these are?



4b.1 • Sleeve balun • 030 • PE18G5XR

Can you recognise what this is and what it does?



4b.1 • transformer balun 1:1 • 010 • 00AY1VJT

Can you recognise a transformer balun and what it can do e.g. 1:1?

4b.1 • transformer balun 4:1 • 020 • K7YH52BC

Can you recognise a transformer balun and what it can do e.g. 4:1?

4d.1 • **Antenna velocity factor end effect** • **000** • **QAXSWJMN**

How long would you make a 10MHz quarterwave vertical?

4d.2 • **antenna current & voltage distribution** • **000** • **BITUK8ZI**

What is the current and voltage distribution on a half-wave dipole?

4d.2 • antenna current & voltage distribution • 010 • 5PRXD5K1

What is the current and voltage distribution on a half-wave dipole?

4d.2 • 7 antennas feedpoint impedance • 000 • HPXZIMNW

What are the variations in feedpoint impedance?

4d.2 • 1/7 Halfwave dipole • 000 • Y15ZYYS9

What is the endpoint impedance of a halfwave dipole?

4d.2 • 2/7 quarterwave ground plane • 010 • 2BPK07QV

What is the endpoint impedance of a quarterwave ground plane?

4d.2 • 3/7 5/8 wavelength vertical • 020 • 6AKQ1JG3

What is the endpoint impedance of a 5/8 wavelength vertical?

4d.2 • 4/7 folded dipole • 030 • OVP7ZG0A

What is the endpoint impedance of a folded dipole?

4d.2 • 5/7 Full wave loop • 040 • JH0QQU4M

What is the endpoint impedance of a full wave loop?

4d.2 • 6/7 end fed 1/4 wavelength • 050 • KEY6ULMH

What is the endpoint impedance of an end fed quarter wavelength?

4d.2 • 7/7 end fed half wavelength • 060 • 03NBYBFV

What is the endpoint impedance of an end fed half wavelength?

4d.2 • Summary of the 7 antennas • 070 • XPV68FXV

Can you summarise the characteristics of the 7 antennas, including feedpoint impedance?

4d.2 • Revision of passive elements in Yagi • 010 • 1XOHF1PX

Just to check the basics of yagi: driven element, reflector, directors?

4d.2 • Proximity of passive elements in Yagi • 010 • X2RCHL29

What effect do the passive elements have on the feedpoint impedance of the driven element in a Yagi?

4d.2 • Use of folded dipole in Yagi • 020 • LZFNH8JL

What effect does using a folded dipole have when used in a Yagi?

4e.1 • Standing Waves revision • 010 • Q111GBJY

What are the basics of Standing Waves, and Standing Wave Ratio (SWR)?

4e.1 • Standing Wave Ratio (SWR) • 020 • SP95JPVE

What is the definition of SWR?

4e.1 • How to calculate Standing Wave ratio (SWR) • 030 • WKA4UNQ4

What is the formula for calculating SWR?

$$SWR = \frac{V_{max}}{V_{min}} = \frac{V_f + V_r}{V_f - V_r}$$

4e.2 • How to calculate Return Loss (RL) in dB • 010 • 0M6LJLZD

What is the formula for Return Loss

$$Return\ loss = 10\ Log_{10} \frac{Incident\ power}{Reflected\ power}\ \text{dB}$$

4e.2 • Return Loss Low • 020 • BWFX6DR3

What is the Return Loss with 400w going forward and 300W reflected

4e.2 • Return Loss Higher • 030 • 2B6ZOGLX

What is the Return Loss with 400w going forward and 20W reflected

4e.2 • Return Loss EVEN Higher • 040 • DHQKU7NS

What is the Return Loss with 400w going forward and 1W reflected

4e.2 • Reurn Loss (RL) and Standing Wave Ratio (SWR) • 020 • 3APKV8A3

What is Return Loss and how does it compare to SWR?

4e.3 • Return Loss can explain how feeder loss can 'improve' SWR • 010 • KZVY804U

What is the formula and how does it explain a false improvement in SWR?

4e.3 • Return Loss can explain how feeder loss can 'improve' SWR • 020 • CJLZRW2B

Using the formula to explain a false improvement in SWR?

4e.3 • Return Loss and SWR • 030 • 7A2Q72IP

Can you summarise the relationship between RL and SWR?

4f.1 • AMU vs ATU • 000 • RN1E03ST

What is the key point about an AMU?

4f.1 • AMU revision • 000 • 2C97SQX7

Practical use of AMU

4f.1 • AMU can cancel reactive component of impedance • 000 • JVG013LL

What does an Antenna Matching Unit (AMU) do?

4f.1 • An AMU does NOT tune the antenna system to resonance • 000 • S47P2OE1

What do you know about an AMU?

4f.1 • Antenna Matching Unit Types: T-match • 000 • 8Y7MPIC7

How do you recognise a T-match AMU?

4f.1 • Antenna Matching Unit Types: pi-match • 010 • VYSJU0IL

How do you recognise a pi-match AMU?

4f.1 • Antenna Matching Unit Types: L-match • 020 • 94S52XGV

How do you recognise an L-match AMU?

4f.2 • Impedance transformer theory • 000 • O7VM6UN0

(1/2) What allows a quarter wave length of feeder to be used as an impedance transformer?

4f.2 • Impedance transformer theory • 010 • UH2S90IJ

(2/2) What allows a quarter wave length of feeder to be used as an impedance transformer?

4f.2 • Formula linking input, transformer and output impedances • 000 • YXUN54B1

What is the formula for a quarter wave impedance transformer?

$$Z_0{}^2 = Z_{in} \times Z_{out}$$

4f.2 • Example calculation for quarter wave impedance transformer: • 010 • GXXU12SJ

This is a calculation example:

$$Z_0{}^2 = Z_{in} \times Z_{out}$$

7a.1 • Working split • 000 • szDTJzZf

What is working split?

7a.8 • Undue interference • 000 • zxLUWGob

What does the Licence say about testing your radio equipment?

7b.1 • Band plan • 000 • NxaFs7Fw

Which band plans do you need to be familiar with for the Full exam?

7b.1 • Band plan • 010 • YDDrv0Rc

Are you familiar with the 5MHz (60m) band plan?

7b.1 • Band plan • 020 • 6b_9-GFQ

Are you familiar with the 5MHz (60m) notes to the band plan?

7b.1 • Band plan • 030 • I1LmRd3r

Are you familiar with the 472kHz (600m) band plan?

7b.1 • Band plan • 040 • ZR857NP1

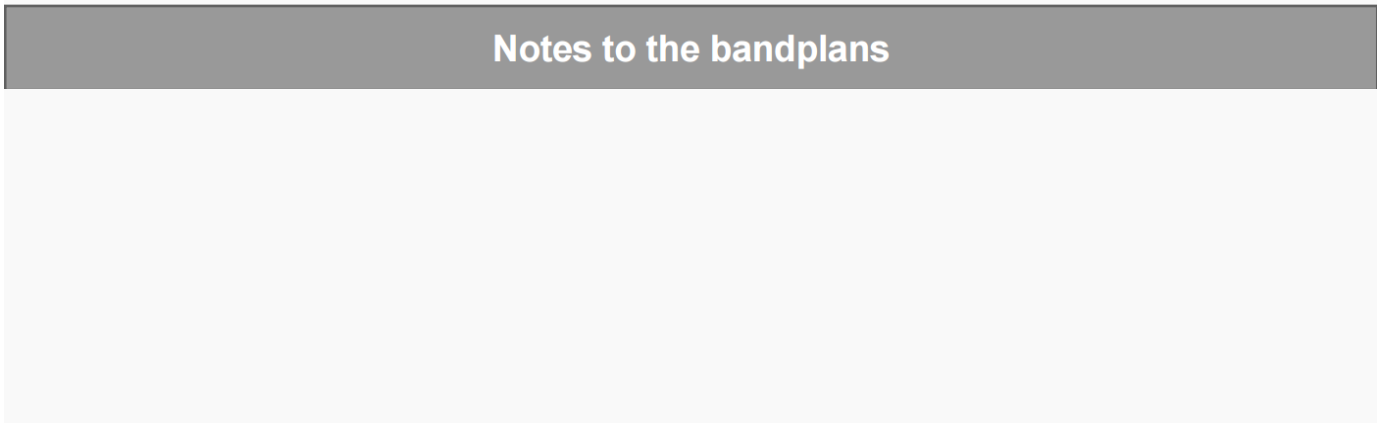
Are you familiar with the 472kHz (600m) notes to the band plan?

7b.1 • Band plan • 050 • HqLuZVQJ

Are you familiar with the 472kHz (600m) notes to the band plan, now in text you can actually read without a microscope?

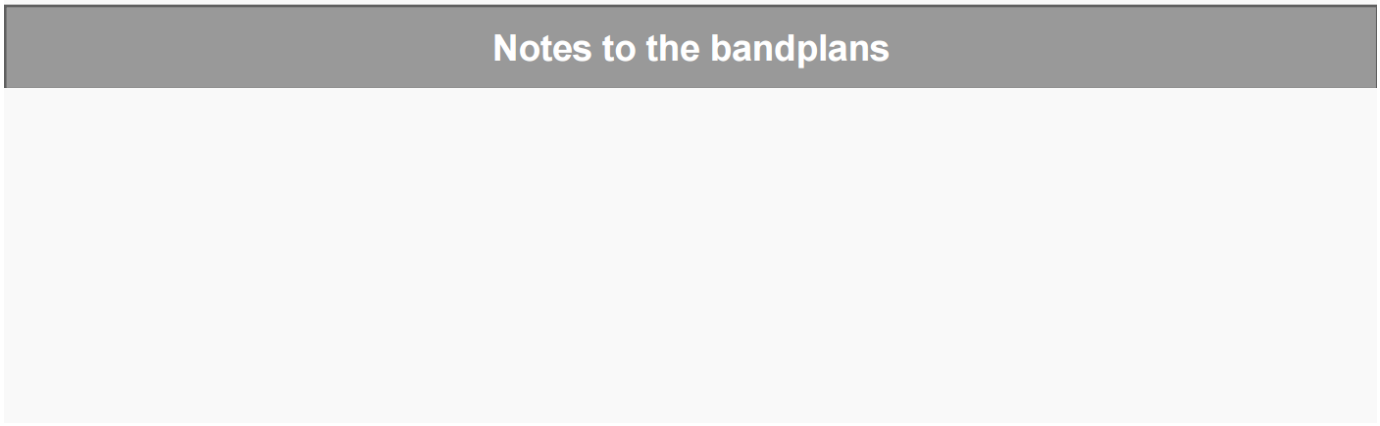
7b.1 • Band plan • 060 • Ma9Ws_fK

Are you familiar with part one of the notes to the band plans?



7b.1 • Band plan • 070 • 7Ny8NuJE

Are you familiar with part two of the notes to the band plans?



7b.1 • Instructions for using 5MHz band (Note G) • 080 • FCW0V8FY

Are you familiar with Note G which relates to using the 5MHz band?

Note G (5 MHz band)

Where Radio Equipment is being used in the channels allocated between 5.2585 MHz and 5.4065 MHz (the "5 MHz band"), the following specific terms and conditions will also apply:

I. When operating double sideband, the maximum bandwidth shall not exceed 6 kHz;
   i. Notwithstanding the maximum peak envelope power expressed in the table, above, the maximum radiated power must not exceed 200 Watts EIRP;

II. The antenna height shall not exceed 20 metres above ground level;