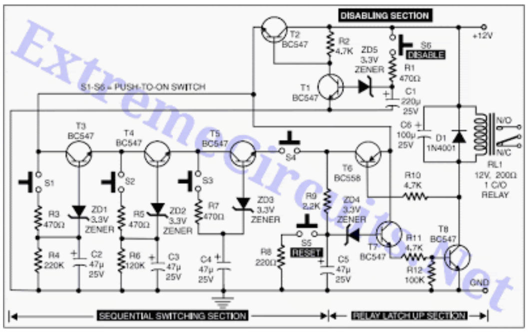
diagram circuit

FRIDAY, DECEMBER 27, 2013

Intelligent Electronic Lock

This intelligent electronic lock circuit is built using transistors only. To open this electronic lock, one has to press tactile switches S1 through S4 sequentially. For deception you may annotate these switches with different numbers on the control panel/keypad. For example, if you want to use ten switches on the keypad marked ‘0’ through ‘9’, use any four arbitrary numbers out of these for switches S1 through S4, and the remaining six numbers may be annotated on the leftover six switches, which may be wired in parallel to disable switch S6 (shown in the figure).



When four password digits in ‘0’ through ‘9’ are mixed with the remaining six digits connected across disable switch terminals, energisation of relay RL1 by unauthorised person is prevented. For authorized persons, a 4-digit password number is easy to remember. To energise relay RL1, one has to press switches S1 through S4 sequentially within six seconds, making sure that each of the switch is kept depressed for a duration of 0.75 second to 1.25 seconds.

The relay will not operate if ‘on’ time duration of each tactile switch (S1 through S4) is less than 0.75 second or more than 1.25 seconds. This would amount to rejection of the code. A special feature of this circuit is that pressing of any switch wired across disable switch (S6) will lead to disabling of the whole electronic lock circuit for about one minute. Even if one enters the correct 4-digit password number within one minute after a ‘disable’ operation, relay RL1 won’t get energized.

So if any unauthorized person keeps trying different permutations of numbers in quick successions for energization of relay RL1, he is not likely to succeed. To that extent, this electronic lock circuit is fool-proof. This electronic lock circuit comprises disabling, sequential switching, and relay latch-up sections. The disabling section comprises zener diode ZD5 and transistors T1 and T2. Its function is to cut off positive supply to sequential switching and relay latch-up sections for one minute when disable switch S6 (or any other switch shunted across its terminal) is momentarily pressed.

During idle state, capacitor C1 is in discharged condition and the voltage across it is less than 4.7 volts. Thus zener diode ZD5 and transistor T1 are in non-conduction state. As a result, the collector voltage of transistor T1 is sufficiently high to forward bias transistor T2. Consequently, +12V is extended to sequential switching and relay latch-up sections. When disable switch is momentarily depressed, capacitor C1 charges up through resistor R1 and the voltage available across C1 becomes greater than 4.7 volts.

Thus zener diode ZD5 and transistor T1 start conducting and the collector voltage of transistor T1 is pulled low. As a result, transistor T2 stops conducting and thus cuts off positive supply voltage to sequential switching and relay latch-up sections. Thereafter, capacitor C1 starts discharging slowly through zener diode D1 and transistor T1. It takes approximately one minute to discharge to a sufficiently low level to cut-off transistor T1, and switch on transistor T2, for resuming supply to sequential switching and relay latch-up sections; and until then the circuit does not accept any code.

The sequential switching section comprises transistors T3 through T5, zener diodes ZD1 through ZD3, tactile switches S1 through S4, and timing capacitors C2 through C4. In this three-stage electronic switch, the three transistors are connected in series to extend positive voltage available at the emitter of transistor T2 to the relay latch-up circuit for energising relay RL1. When tactile switches S1 through S3 are activated, timing capacitors C2, C3, and C4 are charged through resistors R3, R5, and R7, respectively.

Timing capacitor C2 is discharged through resistor R4, zener diode ZD1, and transistor T3; timing capacitor C3 through resistor R6, zener diode ZD2, and transistor T4; and timing capacitor C4 through zener diode ZD3 and transistor T5 only. The individual timing capacitors are chosen in such a way that the time taken to discharge capacitor C2 below 4.7 volts is 6 seconds, 3 seconds for C3, and 1.5 seconds for C4. Thus while activating tactile switches S1 through S3 sequentially, transistor T3 will be in conduction for 6 seconds, transistor T4 for 3 seconds, and transistor T5 for 1.5 seconds.

The positive voltage from the emitter of transistor T2 is extended to tactile switch S4 only for 1.5 seconds. Thus one has to activate S4 tactile switch within 1.5 seconds to energise relay RL1. The minimum time required to keep switch S4 depressed is around 1 second. For sequential switching transistors T3 through T5, the minimum time for which the corresponding switches (S1 through S3) are to be kept depressed is 0.75 seconds to 1.25 seconds.

If one operates these switches for less than 0.75 seconds, timing capacitors C2 through C4 may not get charged sufficiently. As a consequence, these capacitors will discharge earlier and any one of transistors T3 through T5 may fail to conduct before activating tactile switch S4. Thus sequential switching of the three transistors will not be achieved and hence it will not be possible to energise relay RL1 in such a situation. A similar situation arises if one keeps each of the mentioned tactile switches de-pressed for more than 1.5 seconds.

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When the total time taken to activate switches S1 through S4 is greater than six seconds, transistor T3 stops conducting due to time lapse. Sequential switching is thus not achieved and it is not possible to energise relay RL1. The latch-up relay circuit is built around transistors T6 through T8, zener diode ZD4, and capacitor C5. In idle state, with relay RL1 in de-energised condition, capacitor C5 is in discharged condition and zener diode ZD4 and transistors T7, T8, and T6 in non-conduction state.

However, on correct operation of sequential switches S1 through S4, capacitor C5 is charged through resistor R9 and the voltage across it rises above 4.7 volts. Now zener diode ZD4 as well as transistors T7, T8, and T6 start conducting and relay RL1 is energised. Due to conduction of transistor T6, capacitor C5 remains in charged condition and the relay is in continuously energised condition. Now if you activate reset switch S5 momentarily, capacitor C5 is immediately discharged through resistor R8 and the voltage across it falls below 4.7 volts. Thus zener diode ZD4 and transistors T7, T8, and T6 stop conducting again and relay RL1 de-energises.

Continue Reading[...]

Posted by Unknown at 10:00 AM

Labels: electronic, intelligent, lock

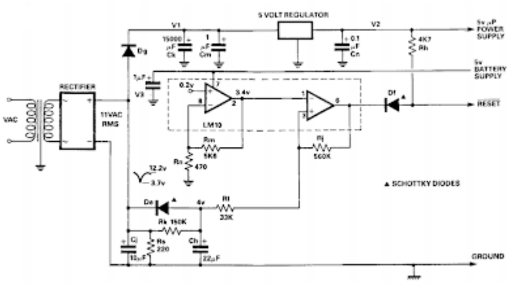
WEDNESDAY, DECEMBER 25, 2013

Simple Microprocessor power supply watchdog circuit Diagram

The **Simple Microprocessor power supply watchdog circuit Diagram** monitors the input to the microprocessor 5 V regulated supply for voltage drops and initiates a reset sequence before supply regulation is lost. In operation, the resistor capacitor combination Rs and Cj form a short time constant smoothing network for the output of the fullwave bridge rectifier.

An approximately triangular, voltage waveform appears across C and Rs and it is the minimum excursion of this that initiates the reset. Diode Dg prevents charge sharing between capacitors Cj and Ck. Resistors Rn and Rm form a feedback network around the voltage reference section of the LM10C, setting a threshold voltage of 3.4 volts.

Microprocessor power supply watchdog circuit Diagram



The threshold voltage is set at 90% of the minimum voltage of the triangular waveform. When the triangular wave trough, at the comparators non-inverting input, dips below the threshold, the comparator output is driven low. This presents a reset to the microprocessor. Capacitor Ch is charged slowly through resistor Rk and discharged rapidly through diode De.

Continue Reading[...]

Posted by Unknown at 9:45 AM

Labels: circuit, diagram, microprocessor, power, simple, supply, watchdog

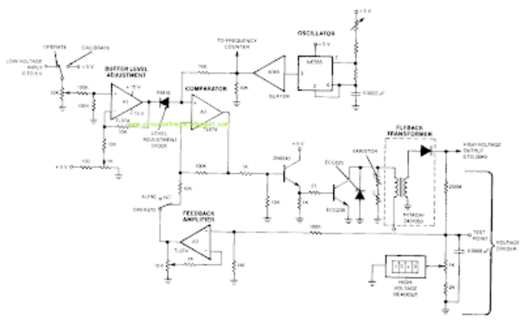
MONDAY, DECEMBER 23, 2013

Build a Remotely Adjustable Solid State High voltage Supply Circuit Diagram

How to build a remotely adjustable solid state high-voltage supply Circuit Diagram. The output voltage changes approximately linearly up to 20 KV as the input voltage is varied from 0 to 5 V. The oscillator is tuned by a 5-0 potentiometer to peak the output voltage at the frequency of maximum transformer response between 45 and 55 kHz.

The feedback voltage is applied through a 100-KO resistor, an op amp, and a comparator to a high-voltage amplifier. A diode and varistors on the primary side of the transformer protect the output transistor. The transformer is a flyback-type used in color-television sets. A feedback loop balances between the high-voltage output and the low-voltage input.

Remotely Adjustable Solid State High-voltage Supply Circuit Diagram



Remotely Adjustable Solid State High-voltage Supply Circuit Diagram

Continue Reading[...]

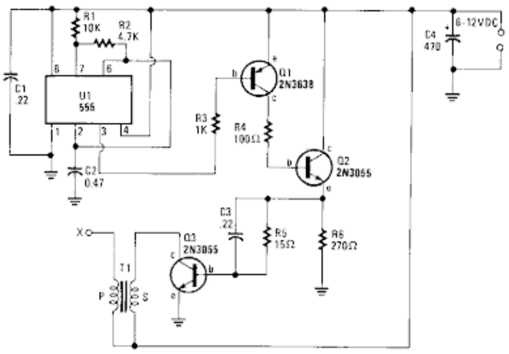
SATURDAY, DECEMBER 21, 2013

Battery Powered High voltage Generator Circuit Diagram

This is the **battery powered high-voltage generator circuit diagram**. Output voltage great enough to jump a l-inch gap can be obtained from a 12-V power source. A 555 timer IC is connected as an stable multi vibrator that produces a narrow negative pulse at pin 3. The pulse turns Ql on for the duration of the time period. The collector of Ql is direct-coupled to tbe base of tbe power transistor Q2, turning it on during the same time period.

The emitter of Q2 is direct -coupled through current limiting resistor R5 to the base of the power transistor. Q3 switches on, producing a minimum resistance between the collector and emitter. The high-current pulse going through tbe primary of high-voltage transformer Tl generates a very high pulse voltage at its secondary output terminal (labeled X). The pulse frequency is determined by tbe values of Rl, R2, and C2. The values given in the parts list were chosen to give the best possible performance when an auto-ignition coil is used for Tl.

Battery Powered High-voltage Generator Circuit Diagram



T1 = Auto Ignition Coil

Continue Reading[...]

THURSDAY, DECEMBER 19, 2013

Video Tracer Circuit Diagram

This circuit was designed as an aid to installers and maintainers of video systems. It is basically a video sync separator (IC1) followed by a LED and buzzer driver (IC2, Q1 & Q2). In use, the device is connected to a video cable and if there is video present, the LED will flash at about 10Hz. If there is no video, the LED flashes briefly every couple of seconds. A buzzer can also be switched in to provide an audible indication. The buzzer is particularly useful when tracing cabling faults or trying to find a correct cable amongst many, where it is difficult to keep an eye on the LED.

Another use for the buzzer option is to provide a video fault indication. For example, it could be inserted in bridging mode, with switch S1 in high impedance mode (position 2) across a video line and set to alarm when there is no video present. If someone pulls out a cable or the video source is powered off, the alarm would sound. IC1 is a standard LM1881 video sync separator circuit and 75Ω termination can be switched in or out with switch S1a. The other pole of the switch, S1b, turns on the power. The composite sync output at pin 1 is low with no video input and it pulses high when composite sync is detected.

Video Tracer Circuit diagram:

These pulses charge a 100nF capacitor via diode D1. When there is no video at the input, oscillator IC2b is enabled and provides a short pulse every couple of seconds to flash the LED. The duty cycle is altered by including D2, so that the discharge time for the 10µF capacitor is much shorter than the charge time. The short LED pulse is used as a power-on indicator drawing minimal average current. When video is present at the input, IC2b is disabled and IC2d is enabled. The output of IC2d provides a 10Hz square wave signal to flash the LED. The buzzer is controlled by switch S2. In position 2 the buzzer will sound when there is video at the input and in position 1 the buzzer will sound when there is no video at the input.

Source : http://www.ecircuitslab.com/2011/07/video-tracer-circuit-diagram.html

Continue Reading[...]

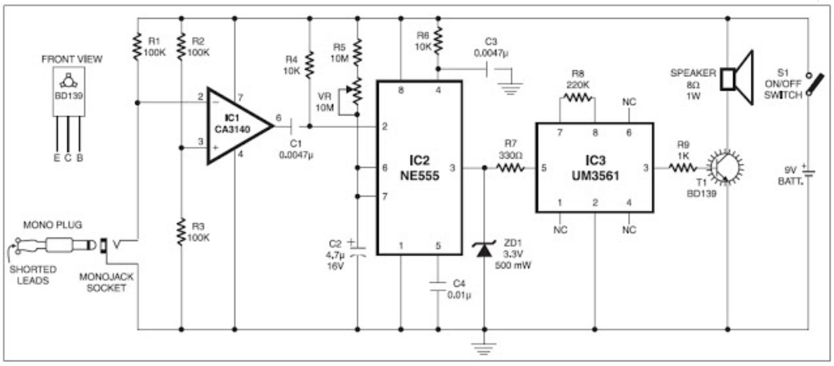
Posted by Unknown at 8:15 AM

Labels: circuit, diagram, tracer, video

TUESDAY, DECEMBER 17, 2013

ANTI BAG SNATCHING ALARM

Here is a simple alarm circuit to thwart snatching of your valuables while travelling. The circuit kept in your bag or suitcase sounds a loud alarm, simulating a p attempts to snatch your bag or suitcase. This will draw the attention of other passengers and the burglar can be caught red handed.



www.blogger.com

In the standby mode, the circuit is locked by a plug and socket arrangement (a mono plug with shorted leads plugged into the mono-jack socket of the unit). When the burglar tries to snatch the bag, the plug detaches from the unit's socket to activate the alarm.

The circuit is designed around op-amp IC CA3140 (IC1), which is configured as a comparator. The non-inverting input (pin 3) of IC1 is kept at half the supply voltage (around 4.5V) by the potential divider comprising resistors R2 and R3 of 100 kilo-ohms each. The inverting input (pin 2) of IC1 is kept low through the shorted plug at the socket. As a result,olice horn, if someone the voltage at the non-inverting input is higher than at the inverting input and the output of IC1 is high.

The output from pin 6 of IC1 is fed to trigger pin 2 of IC NE555 (IC2) via coupling capacitor C1 (0.0047 µF). IC2 is configured as a monostable. Its trigger pin 2 is held high by resistor R4 (10 kilo-ohms). Normally, the output of IC2 remains low and the alarm is off. Resistor R6, along with capacitor C3 connected to reset pin 4 of IC2, prevents any false triggering. Resistor R5 (10 mega-ohms), preset VR (10 megaohms) and capacitor C2 (4.7 µF, 16V) are timing components. With these values, the output at pin 3 of IC2 is about one minute, which can be increased by increasing either the value of capacitor C2 or preset VR.

When there is an attempt at snatching, the plug connected to the circuit detaches. At that moment, the voltage at the inverting input of IC1 exceeds the voltage at the non-inverting input and subsequently its output goes low. This sends a low pulse to trigger pin 2 of IC2 to make its output pin 3 high. Consequently, the alarm circuit built around IC UM3561 (IC3) gets the supply voltage at its pin 5.

IC UM3561 is a complex ROM with an inbuilt oscillator. Resistor R8 forms the oscillator component. Its output is fed to the base of single-stage transistor amplifier BD139 (T1) through resistor R9 (1 kilo-ohm)

The alarm tone generated from IC3 is amplified by transistor T1. A loudspeaker is connected to the collector of T1 to produce the alarm. The alarm can be put off if the plug is inserted into the socket again. Transistor T1 requires a heat-sink.

Resistor R7 (330 ohms) limits the current to IC3 and zener diode ZD1 limits the supply voltage to IC3 to a safe level of 3.3 volts. Resistor R9 limits the current to the base of T1.

The circuit can be easily constructed on a vero board or general-purpose PCB. Use a small case for housing the circuit and 9V battery. The speaker should be small so as to make the gadget handy. Connect a thin plastic wire to the plug and secure it in your hand or tie up somewhere else so that when the bag is pulled, the plug detaches from the socket easily.

Continue Reading[...]

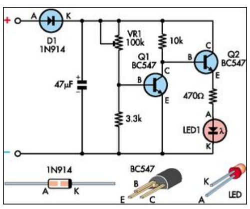
Posted by Unknown at 9:15 AM

Labels: alarm, anti, bag, snatching

TUESDAY, OCTOBER 8, 2013

Low Battery Indicator I

Here is the circuit diagram of low battery indicator from silicon chip electronics. This simple circuit lights LED1 when the battery voltage drops below the setting set by trimpot VR1. In effect, VR1 and associated resistors bias Q1 on which holds Q2 and the LED off. When the voltage drops below the set value, Q1 turns off, allowing Q2 to turn on and light the LED. The circuit is suitable for nominal battery voltages up to 12V.



Posted by Unknown at 11:00 AM

Labels: battery, i, indicator, low

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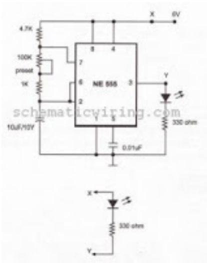
SUNDAY, OCTOBER 6, 2013

FLASH LIGHT ELECTRONIC DIAGRAM



FLASH LIGHT ELECTRONIC DIAGRAM

IC NE555 works as an astable multivibrator with variation on the frequency. With this circuit, the LED blinks every half second. How long the blink time is, can be adjusted by adjusting the value of capacitor C1. Up to 18 additional LEDs can be attached to this circuit (36 LEDs total).

Components :
Diode D1-D2 : 5mm LED
Resistor R1 : 4K7 ohm
Resistor R2 : 1k ohm
Resistor R3-R4 : 330 ohm
Variable resistor VR1 : 100k ohm
Polar capacitor C1 : 10 uF/10 V
Capacitor C2 : 0.01 uF
IC1 : NE555
6V power supply

Continue Reading[...]

Posted by Unknown at 10:45 AM

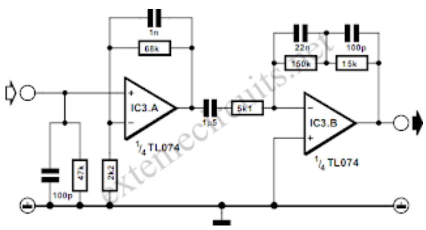
Labels: diagram, electronic, flash, light

FRIDAY, OCTOBER 4, 2013

RIAA Phono Preamplifier

Since modern sound systems usually lack inputs for record players, separate MD preamplifiers are becoming increasingly popular. They are needed not only by people who still regularly like to listen to vinyl records, but also by those who want to finally transcribe their LP collections to CD using a CD recorder. The author has built innumerable phono preamplifiers for friends and acquaintances. In many cases, for the sake of simplicity these were based on an old circuit design with two µA741s, which was originally described by B. Wolfenden in a 1976 issue of Wireless World.

In that simple design, the first 741 simply amplified the full range of the frequency spectrum, while the second one was fitted with RIAA frequency compensation — a fairly common configuration at that time. However, a variant on this classic design was recently born after a bit of experimenting. It also uses two opamps, with the difference that the RIAA frequency compensation is distributed over both opamps. The accompanying figure shows the schematic diagram of this preamplifier. The first opamp attenuates the signal at 6 dB/octave starting at 2.2 kHz, while the second opamp looks after the other corner frequency.



The objective of the new design was to keep the feedback factor as high as possible in both stages. To the considerable surprise of the developer, this modification turned out to have an unexpected side effect: when records were played, certain scratches were no longer audible! The difference between the new and old preamplifiers could be clearly heard; it was certainly not just imagination. What could be the cause of this? A quick calculation showed that a 0.05-mm scratch in a record groove moving past a needle at a speed of 0.5 m/s produces a square-wave pulse with a frequency of 10 kHz. Evidently, there is a lot to be gained by attenuating such pulses with a low-pass filter as early as possible, which means in the first stage, in order to prevent them from over-driving the rest of the circuit.

Continue Reading[...]

Posted by Unknown at 11:15 AM

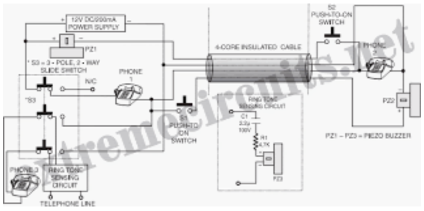
Labels: phono, preamplifier, riaa

WEDNESDAY, OCTOBER 2, 2013

2 Line Intercom Cum Telephone Line Changeover Circuit

The circuit presented here can be used for connecting two telephones in parallel and also as a 2-line intercom. Usually a single telephone is connected to a telephone line. If another telephone is required at some distance, a parallel line is taken for connecting the other telephone. In this simple parallel line operation, the main problem is loss of privacy besides interference from the other phone. This problem is obviated in the circuit presented here. Under normal condition, two telephones (telephone 1 and 2) can be used as intercom while telephone 3 is connected to the lines from exchange. In changeover mode, exchange line is disconnected from telephone 3 and gets connected to telephone 2. For operation in intercom mode, one has to just lift the handset of phone 1 and then press switch S1.

As a result, buzzer PZ2 sounds. Simultaneously, the side tone is heard in the speaker of handset of phone 1. The person at phone 2 could then lift the handset and start conversation. Similar procedure is to be followed for initiation of the conversation from phone 2 using switch S2. In this mode of operation, a 3-pole, 2-way slide-switch S3 is to be used as shown in the figure. In the changeover mode of operation, switch S3 is used to changeover the telephone line for use by telephone 2. The switch is normally in the intercom mode and telephone 3 is connected to the exchange line. Before changing over the exchange line to telephone 2, the person at telephone 1 may inform the person at telephone 2 (in the intercom mode) that he is going to changeover the line for use by him (the person at telephone 2).



As soon as changeover switch S3 is flipped to the other position, 12V supply is cut off and telephones 1 and 3 do not get any voltage or ring via the ring-tone-sensing unit. Once switch S3 is flipped over for use of exchange line by the person at telephone 2, and the same (switch S3) is not flipped back to normal position after a telephone call is over, the next telephone call via exchange lines will go to telephone 2 only and the ringtone-sensing circuit will still work. This enables the person at phone 3 to know that a call has gone through. If the handset of telephone 3 is lifted, it is found to be dead. To make telephone 3 again active, switch S3 should be changed over to its normal position.

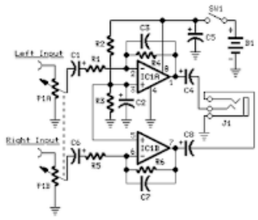
Posted by Unknown at 10:45 AM

Continue Reading[...]

Labels: 2, changeover, circuit, cum, intercom, line, telephone

SATURDAY, SEPTEMBER 28, 2013

9V HEADPHONE AMPLIFIER NE5534 ELECTRONIC DIAGRAM



9V HEADPHONE AMPLIFIER NE5534 ELECTRONIC DIAGRAM

I have Used it with Sennheiser 465s and achieved ear-splitting volume. The amplifier is ideal as a booster for power-conserving stereo sources Such as portable CD players and for interfacing with passive EQ networks Such as tone controls or a headphone acoustic simulator.

Posted by Unknown at 8:45 AM

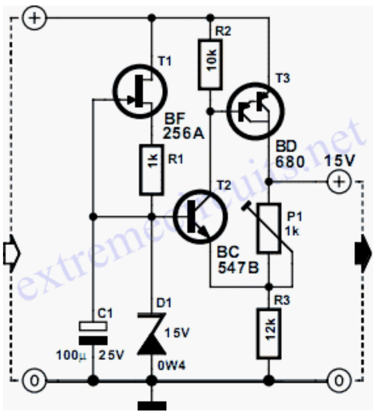
Continue Reading[...]

Labels: 9v, amplifier, diagram, electronic, headphone, ne5534

THURSDAY, SEPTEMBER 26, 2013

Discrete Voltage Regulator

The title of this article naturally raises the question of why we think that the generous selection of fully integrated voltage regulators needs to be extended with a version constructed using discrete components. In other words, what does this circuit offer that the well-known 'three-leggers' don't have? To start with, we can point out that this circuit is refreshingly simple for a discrete version. Three semiconductors, three resistors, a capacitor and a diode are all it needs. Of course, that's still more components than an integrated regulator, so what exactly are the advantages of this circuit?



They are to be found in three areas: voltage range, bandwidth and current rating. The last of these is the primary strength of this circuit, since the maximum current depends only on the specifications of the output transistor. With the BD680, as used here, a current of 4 A can be delivered at a collect-emitter voltage of 10 V with adequate cooling (Rth = 3.12 K/W). The peak current is even 6 A. Try matching that with an integrated voltage regulator! The maximum input voltage is 30 V with the illustrated version of the circuit (UDSmax of T1), but this can easily be increased by using special high-voltage transistors.

Table 1. Specifications

	with P1	without P1
Output voltage	15 V	14.5 V
Ripple suppression	58 dB	64 dB (I_{out} = 100 mA)
	46 dB	54 dB (I_{out} = 1 A)
$U_{dropout}$	1.6 V	1 V (I_{out} = 100 mA)
I_{noload}	2.1 mA	ditto
Maximum input voltage	30 V	ditto

The same applies to the bandwidth, which can be extended as desired, without any modifications to the circuit, by using high-speed transistors. Generally speaking, wide bandwidth is also not one of the strong points of integrated voltage regulators. As noted, the circuit is basically very simple. A zener diode (D1) fed with a constant current of around 1mA by a JFET current source (T1) provides the reference potential. C1 is connected in parallel with D1 to provide well-behaved startup behaviour (soft start). This capacitor also provides additional buffering and decouples noise and other disturbances. The startup time is around three seconds.

The only additional item that is needed for the voltage regulator is an output buffer for the reference potential. This takes the form of a sort of super-Darlington using T2 and T3. This works very well, but has the disadvantage that the output voltage is a bit lower (one diode drop) than the Zener voltage. P1 can be added to correct this, but this does reduce the regulation of the circuit. If the voltage difference is not important, it is thus better to replace P1 with a wire jumper. The main specifications of the voltage regulator are listed in Table 1.

Continue Reading[...]

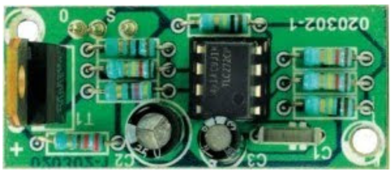
Posted by Unknown at 9:30 AM

Labels: discrete, regulator, voltage

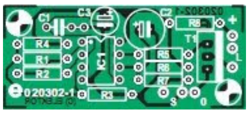
TUESDAY, SEPTEMBER 24, 2013

Luxury Car Interior Light

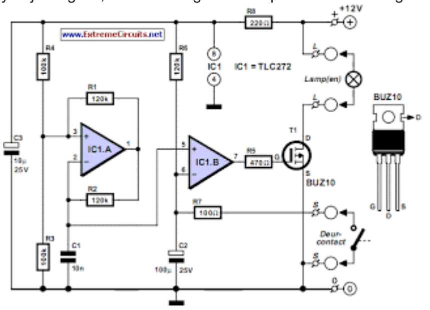
This circuit is much more modest, but certainly still worth the effort. It provides a high quality interior light delay. This is a feature that is included as standard with most modern cars, although the version with an automatic dimmer is generally only found in the more expensive models. With this circuit it is possible to upgrade second hand and mid-range models with an interior light delay that slowly dims after the door has been closed. The dimming of the light is implemented by means of pulse-width modulation. This requires a triangle wave oscillator and a comparator.



Two opamps are generally required to generate a good triangle wave, but because the waveform doesn't have to be accurate, we can make do with a single opamp. This results in the circuit around IC1.A, a relaxation oscillator supplying a square wave output. The voltage at the inverting input has more of a triangular shape. This signal can be used as long as we do not put too much of a load on it. The high impedance input of IC1.B certainly won't cause problems in this respect. This opamp is used as a comparator and compares the voltage of the triangular wave with that across the door switch. When the door is open, the switch closes and creates a short to the chassis of the car.



The output of the opamp will then be high, causing T1 to conduct and the interior light will turn on. When the door is closed the light will continue to burn at full strength until the voltage across C2 reaches the lower side of the triangle wave (about 5 V). The comparator will now switch its output at the same rate of the triangle wave (about 500 Hz), with a slowly reducing pulse width, which results in a slowly reducing brightness of the interior light. R8 and C3 protect the circuit from voltage spikes that may be induced by the fast switching of the light. The delay and dimming time can be adjusted with R6 and C2. Smaller values result in shorter times. You can vary the dimming time on its own by adjusting R1, as this changes the amplitude of the triangle wave across C1.



R7 limits the discharge current of C2; if this were too big,it would considerably reduce the lifespan of the capacitor. There is no need to worry about reducing the life of the car battery. The circuit consumes just 350 µA when the lamp is off and a TLC272 is used for the dual opamp. A TL082 will take about 1 mA. These values won't discharge a normal car battery very quickly; the self-discharge is probably many times higher. It is also possible to use an LM358, TL072 or TL062 for IC1. R8 then needs to have a value between 47 Ω and 100 Ω. Since T1 is always either fully on or fully off, hardly any heat is generated.

At a current of 2 A the voltage drop across the transistor is about 100 mV, giving rise to a dissipation of 200 mW. This is such a small amount that no heatsink is required. The whole circuit can therefore remain very compact and should be easily fitted in the car, behind the fabric of the roof for example.

Resistors:

R1,R2,R6 = 120kΩ
R3,R4 = 100kΩ
R5 = 470Ω
R7 = 100Ω
R8 = 220Ω
Capacitors:
C1 = 10nF
C2 = 100µF-25V
C3 = 10µF-25V
Semiconductors:
T1 = BUZ10
IC1 = TLC272CP

Continue Reading[...]

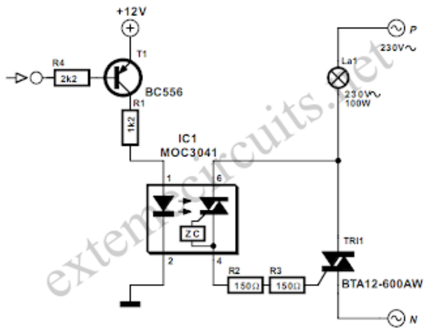
Posted by Unknown at 10:00 AM

Labels: car, interior, light, luxury

SUNDAY, SEPTEMBER 22, 2013

DC Control for Triacs

If a circuit is to switch a mains voltage, a relay is a simple solution in cases where switching times are long and high currents are involved. However, at lower currents, and in particular where rapid switching is required, such as in sound-to-light systems, a relay no longer fills the bill. Electrical isolation is often a requirement, which rules out driving a triac via a transistor. Here we use the MOC3041 optocoupler, which is specially designed for such applications, to drive a power triac. The control circuit therefore remains galvanically isolated from the mains. The internals of the optocoupler are somewhat more complex than appears from the circuit diagram. A special zero-crossing detector circuit in the optocoupler ensures that the connected triac is only triggered when the alternating mains voltage goes through zero.



This has the advantage of generating less interference compared to switching the triac at arbitrary phase in a cycle. Indeed, it means that we can dispense with the suppressor choke at the output that would otherwise be necessary. If very brief pulses are likely to be present at the input to the opto-coupler, a 220 nF capacitor should be connected between the input of the circuit and the emitter of T1 to lengthen the drive pulses. This ensures that the triac will be triggered even with very short input pulses, which might otherwise miss the zero-crossing point of the mains waveform. The triac should be an AW-suffix type. These types are less sensitive, but have higher dv/dt and di/dt specifications. The gate resistance must be constructed from two resistors connected in series, since normal resistors are not suitable for direct use with mains voltages. It is also necessary to exercise care around the opto-coupler. In order to guarantee Class II isolation the solder pads on the input and output sides must be separated by at least 6 mm. The leads may therefore need to be bent outwards when soldering.

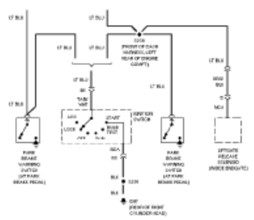
Continue Reading[...]

Posted by Unknown at 9:15 AM

Labels: control, dc, for, triacs

FRIDAY, SEPTEMBER 20, 2013

1997 Chevrolet Blazer Electrical Wiring Diagram



1997 Chevrolet Blazer Electrical Wiring Diagram

The Part of 1997 Chevrolet Blazer Electrical Wiring Diagram: Cruise Control System, Defogger, Rear Glass Release, Rear Wiper/Washer, Shift Interlock System, Transmission System, 6-Way Power Seat Circuit, A/C Circuit, etc. Computer Data Lines, Anti-lock Brake, Back-up Lamps Circuit, Charging Circuit, Keyless Entry, Engine Performance Circuits, Warning System, Courtesy Lamps, Door Lock Circuit, Electronic Transfer Case Circuit, Exterior Lamps, Front Wiper/Washer, Starting Schematics, Supplemental Restraint, Sealed Beam Headlamps, Horn, Instrument Cluster Circuit, Instrument Illumination, Power Distribution Circuit, Headlight, Ground Distribution, Power Mirror, Power Window, Power Window Diagram, Features: Power windows, power door locks, anti-lock braking, dual air bag, power mirrors, cruise control, air conditioner, AM-FM stereo radio with CD, 4.3-liter Vortec V-6 engine, four-speed automatic gearbox.

Continue Reading[...]

Posted by Unknown at 8:30 AM

Labels: 1997, blazer, chevrolet, diagram, electrical, wiring

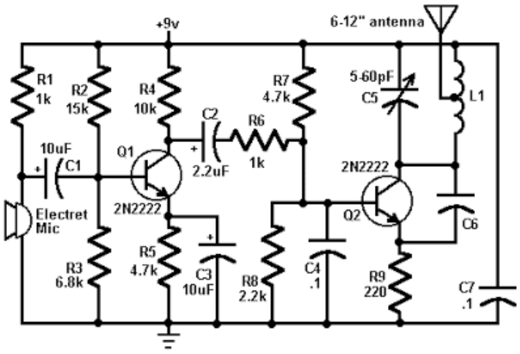
THURSDAY, SEPTEMBER 12, 2013

Simple FM Transmitter Circuit Diagram

This circuit is a simple two transistor (2N2222) FM transmitter. No license is required for this transmitter according to FCC regulations regarding wireless microphones. If powered by a 9 volt battery and used with an antenna no longer than 12 inches, the transmitter will be within the FCC limits.

The microphone is amplified by Q1. Q2, C5, and L1 form an oscillator that operates in the 80 to 130 MHz range. The oscillator is voltage controlled, so it is modulated by the audio signal that is applied to the base of Q2. R6 limits the input to the RF section, and its value can be adjusted as necessary to limit the volume of the input. L1 and C6 can be made with wire and a pencil. The inductor (L1) is made by winding two pieces of 24 gauge insulated wire, laid side by side, around a pencil six times. Remove the coil you have formed and unscrew the two coils apart from each other.

FM Transmitter Circuit Diagram



One of these coils (the better looking of the two) will be used in the tank circuit, and the other can be used in the next one you build. The antenna (24 gauge wire) should be soldered to the coil you made, about 2 turns up from the bottom, on the transistor side, and should be 8-12 inches long. To make C6, take a 4 inch piece of 24 gauge insulated wire, bend it over double and, beginning 1/2" from the open end, twist the wire as if you were forming a rope. When you have about 1" of twisted wire, stop and cut the looped end off, leaving about 1/2" of twisted wire (this forms the capacitor) and 1/2" of untwisted wire for leads.

Continue Reading[...]

Posted by Unknown at 7:15 AM

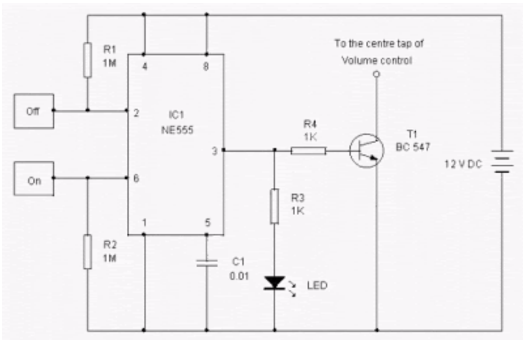
Labels: circuit, diagram, fm, simple, transmitter

TUESDAY, SEPTEMBER 10, 2013

Touch Controlled Mute Switch Circuit Diagram

Here is another simple circuit to mute the volume of Audio devices through simple touch. It exploits the action of the flip-flops in the timer IC 555 to reduce the volume of the Audio amplifier. IC NE555 is designed in the toggle mode. Its lower and upper comparator inputs are connected to the touch plates which can be membrane switches or two pieces of conducting plates. The inputs of comparators are stabilized through R1 and R2 to avoid floating.

Touch controlled Mute switch circuit diagram



When the touch plate connected to pin 2 is touched momentarily, output of IC1 goes high and T1 conducts. The centre tap of the volume control is connected to the collector of T1. So when T1 conducts current going to the amplifier drains through T1. This reduces the volume.IC1 remains latched in this position with LED on. When the touch plate connected to pin 6 is touched momentarily, output of IC1 goes low and T1 turns off. This restores the volume.

Continue Reading[...]

Posted by Unknown at 7:30 AM

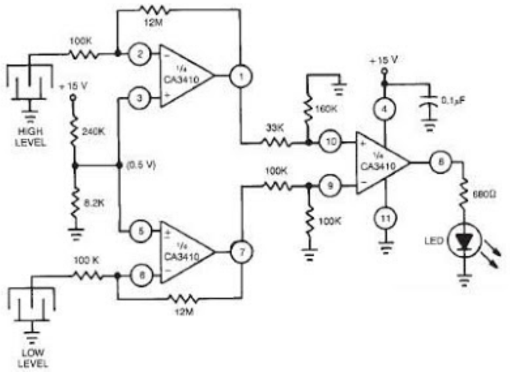
Labels: circuit, controlled, diagram, mute, switch, touch

WEDNESDAY, SEPTEMBER 4, 2013

Dual Level Liquid Sensor

This level liquid sensor electronic circuit diagram is based on a common Ca3410 operational amplifier IC . This level liquid sensor electronic circuit use two plates sensors (two probes) , one for the high level an one for low level .

Dual Level Liquid Sensor Circuit Diagram



If the level of the liquid is not in the adjusted range the LED will glow . The circuit require just a CA3410 operational amplifier and other few common components . This dual liquid level sensor require a 15 volt DC power supply circuit .

Posted by Unknown at 7:15 AM
Labels: dual, level, liquid, sensor

Continue Reading[...]

MONDAY, SEPTEMBER 2, 2013

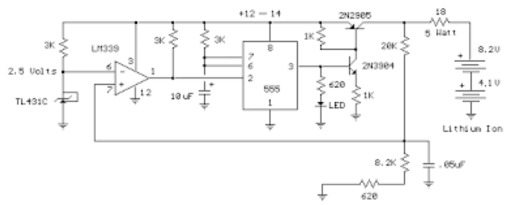
2 Cell Lithium Ion Charger

This circuit was build to charge a couple series Lithium cells (3.6 volts each, 1 Amp Hour capacity) installed in a portable transistor radio. The charger operates by supplying a short current pulse through a series resistor and then monitoring the battery voltage to determine if another pulse is required. The current can be adjusted by changing the series resistor or adjusting the input voltage.

When the battery is low, the current pulses are spaced close together so that a somewhat constant current is present. As the batteries reach full charge, the pulses are spaced farther apart and the full charge condition is indicated by the LED blinking at a slower rate. A TL431, band gap voltage reference (2.5 volts) is used on pin 6 of the comparator so the comparator output will switch low, triggering the 555 timer when the voltage at pin 7 is less than 2.5 volts.

The 555 output turns on the 2 transistors and the batteries charge for about 30 milliseconds. When the charge pulse ends, the battery voltage is measured and divided down by the combination 20K, 8.2K and 620 ohm resistors so when the battery voltage reaches 8.2 volts, the input at pin 7 of the comparator will rise slightly above 2.5 volts and the circuit will stop charging.

2 Cell Lithium Ion Charger Circuit diagram



The circuit could be used to charge other types of batteries such as Ni-Cad, NiMh or lead acid, but the shut-off voltage will need to be adjusted by changing the 8.2K and 620 ohm resistors so that the input to the comparator remains at 2.5 volts when the terminal battery voltage is reached. For example, to charge a 6 volt lead acid battery to a limit of 7 volts, the current through the 20K resistor will be (7-2.5)/ 20K = 225 microamps. This means the combination of the other 2 resistors (8.2K and 620) must be R=E/I = 2.5/ 225 uA = 11,111 ohms. But this is not a standard value, so you could use a 10K in series with a 1.1K, or some other values that total 11.11K

Be careful not to overcharge the batteries. I would recommend using a large capacitor in place of the battery to test the circuit and verify it shuts off at the correct voltage.

Posted by Unknown at 6:30 AM
Labels: 2, cell, charger, ion, lithium

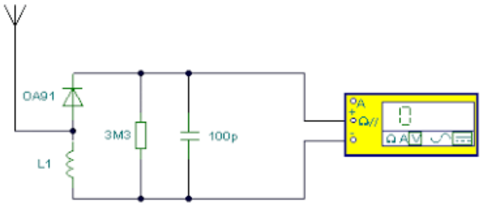
Continue Reading[...]

SATURDAY, AUGUST 31, 2013

Simple Field Strength Meter

This Field Strength Meter is simple and also quite sensitive. It uses an ordinary digital voltmeter to measure RF signal strength up to a few hundred MHz.

Simple Field Strength Meter Circuit diagram:



Parts List:

1 OA91 Germanium Diode
1 3.3M Resistor
1 100p Capacitor
L1 7 turns on a 1/4 inch former (suitable for around 100MHz)

Notes:

The multimeter should be set to the lowest dc volts range for maximum sensitivity. This is normally 200mV DC for most meters. The circuit works well at VHF (around 100MHz) and was quite pleased with the results. L1 was 7 turns on a quarter inch former with ferrite slug. This covered the UK FM band.

A digital multimeter, as opposed to an analogue signal meter offers several advantages in this circuit. First, the impedance of a digital meter is very high, around 10Meg/Volt on most meters. This does not shunt the tank circuit unduly. Second, compared to an analogue meter, very slight differences in signal strength can be more easily observed. Thirdly,a digital meter will have better linearity, responding well to both weak and stronger signals.

Continue Reading[...]

Posted by Unknown at 7:30 AM

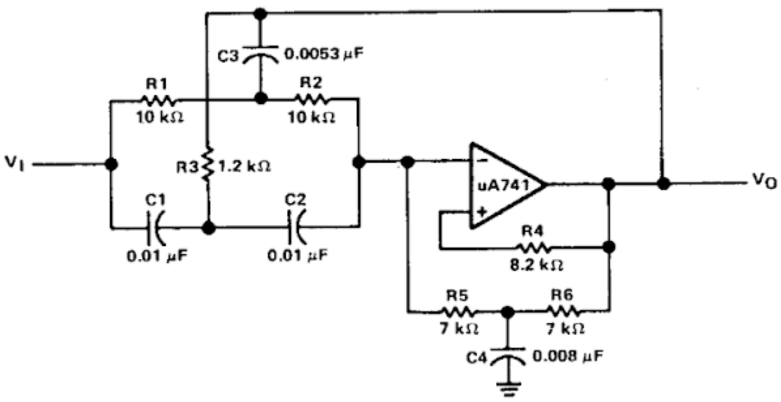
Labels: field, meter, simple, strength

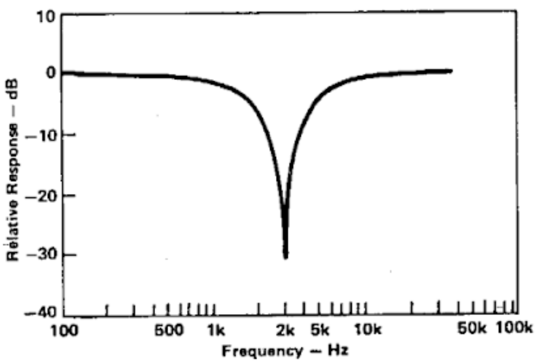
THURSDAY, AUGUST 15, 2013

Active band reject filter Circuit

A filter with a band-reject characteristic is frequently referred to as a notch filter. A typical circuit using a Âµ 741 is the unity-gain configuration for this type of active filter shown. The filter response curve shown is a second-order band-reject filter with a notch frequency of 3 kHz. The resulting Q of this filter is about 23, with a notch depth of - 31 dB.Although three passive networks are used in this application, the operational amplifier has become a sharply tuned low-frequency filter without the use of inductors or large-value capacitors.

Active band-reject filter Circuit Diagram





Continue Reading[...]

Posted by Unknown at 10:30 AM

Labels: active, band, circuit, filter, reject

TUESDAY, AUGUST 13, 2013

TV Protect Circuit Dead or Damaged

Television set equipped with a circuit protector, then there are several possibilities that could occur if there is a problem on one of the circuits. Protect circuit horizontal part - When turned on the horizontal plane will live for a while, but then died again. At the time of death when measured on the horizontal driver indicates that no drive signal. If the power jack unplugged then try to turn on again then repeated a similar incident will happen again. But if if the base of the transistor or transistor try to open removable drive signal was viable.

Protect circuit of microcontroll - If checked the voltage at pin microcontrol power on-off control, power control is turned on when the plane going "on" for a while then back "off". If you unplugged the power jack will power "on" again, but briefly and then keep coming back "off". On certain models sometimes die when the aircraft was marked with the blazing LED indicators blink. Protect circuit tube - aircraft can be turned on but a dark raster.


Protect IC

Tested voltage raster screen can be raised to normal flame or flame a horizontal line. Protect circuit the power supply - if enabled aircraft B + voltage of power supply there for a while but then lost or drops. Or the power supply voltage drops and there is but little rocking voltage, which is caused due to power supply to the death over and over again and again. There are models of televisions that do not use the protector system at all, there is only one system that uses a surge protector, but there are also some systems which use a surge protector as well. System protectors are made available for specific purposes. Keep track of the damage that led to protect circuit is sometimes difficult, because it always turns itself off the plane before we can make measurements. By getting to know a wide range of system protectors and understand how it works it will help overcome these difficulties.

Various kinds of protectors television system:

- Protectors x-ray
- Vertical Protectors
- Protectors B + over current (OCP)
- Protectors B + over voltage (OVP)
- ABL Protectors
- Supply voltage surge protector (if short or broken)
- Protectors white balance
- Protectors circuit power supply (SMPS)

Continue Reading[...]

Posted by Unknown at 10:45 AM

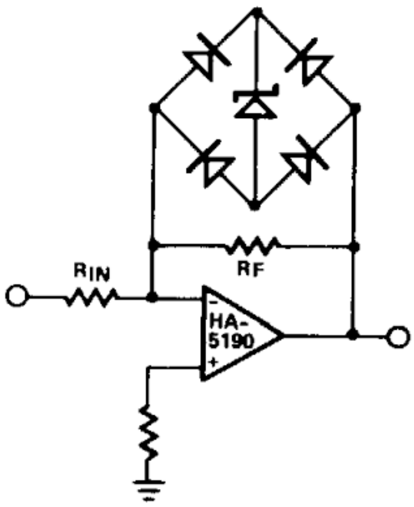
Labels: circuit, damaged, dead, or, protect, tv

SUNDAY, AUGUST 11, 2013

Simple Output limiter Circuit Diagram

Simple Output-limiter Circuit Diagram HA-5190 is rated for Â±5 V output swing, and saturates at Â±7 V. As with most op amps, recovery from output saturation is slow compared to the amplifier`s normal response time. Some form of limiting, either of the input signal or in the feedback path, is desirable if saturation might occur. The circuit illustrates a feedback limiter, where gain is reduced ifthe output exceeds Â± (Vz + 21j-). A 5-V zener with a sharp knee characteristic is recommended.

Simple Output-limiter Circuit Diagram



Continue Reading[...]

Posted by Unknown at 11:00 AM

Labels: circuit, diagram, limiter, output, simple

FRIDAY, AUGUST 9, 2013

Mobile Phone and iPod Battery Charger

Charge your iPod without connecting it to a computer!

Using the USB port on your computer to charge your player’s batteries is not always practical. What if you do not have a computer available at the time or if you do not want to power up a computer just for charging? Or what if you are traveling? Chargers for Mobile Phones iPods and MP3 players are available but they are expensive and you need separate models for charging at home and in the car.

This charger can be used virtually anywhere. While we call the unit a charger, it really is nothing more than a 5V supply that has a USB outlet. The actual charging circuit is incorporated within the iPOD or MP3 player itself, which only requires a 5V supply. As well as charging, this supply can run USB-powered accessories such as reading lights, fans and chargers, particularly for mobile phones.

The supply is housed in a small plastic case with a DC input socket at one end and a USB type "A" outlet at the other end, for connecting to Mobile Phone, an iPod or MP3 player when charging. A LED shows when power is available at the USB socket. Maximum current output is 660mA, more than adequate to run any USB-powered accessory.

Pictures, PCB and Circuit Diagram:

Front View Of Mobile Phone and iPod Battery Charger Circuit

Bottom View Of Mobile Phone and iPod Battery Charger Circuit

PCB Layout Of Mobile Phone and iPod Battery Charger Circuit

Mobile Phone and iPod Battery Charger Circuit Diagram

Parts	Description
P1	1K
R1	1R-0.5W
R2	1R-0.5W
R3	1R-0.5W
R4	1K
R5	560R
R6	10R-0.5W
R7	470R
C1	470uF-25V
C2	100nF-63V
C3	470pF
C4	100uF-25V
D1	1N5404
D2	1N4001
D3	1N5819
D4	5.1V-1W Zener Diode
D5	5mm. Red LED
L1	220uH
S1	USB A Type Socket
SW1	On/Off Switch
IC1	MC34063A

Specifications:
Output voltage ----------------------5V
Output current ---------------------660mA maximum for 5V out
Input voltage range ------------------9.5V to 15V DC
Input current requirement ----------500mA for 9V in, 350mA for >12V input
Input current with output shorted--- 120mA at 9V in, 80mA at 15V in
Output ripple ------------------------14mV (from no load to 660mA)
Load regulation ----------------------25mV (from no load to 660mA)
Line regulation ----------------------20mV change at full load from 9 to 18V input
No load input current ----------------20mA
(The specification for the computer USB 2.0 port requires the USB port to deliver up to 500mA at an output voltage between 5.25V and 4.375V).

The circuit is based around an MC34063 switch mode regulator. This has high efficiency so that there is very little heat produced inside the box, even when delivering its maximum output current. The circuit is more complicated than if we used a 7805 3-terminal regulator but since the input voltage could be 15V DC or more, the voltage dissipation in such a regulator could be 5W or more at 500mA. and 5W is far too much for a 7805, even with quite a large heatsink. Credit for this circuit goes to SiliconChip, A wonderful electronics magazine.

Source :www.extremecircuits.net

Posted by Unknown at 12:00 PM

Continue Reading[...]

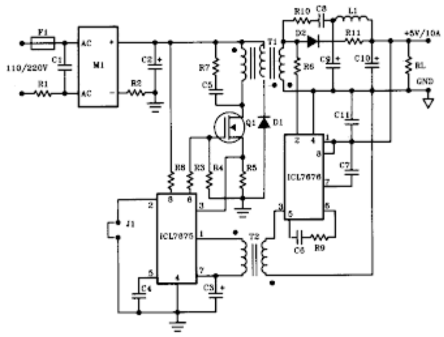
Labels: and, battery, charger, ipod, mobile, phone

WEDNESDAY, AUGUST 7, 2013

50W Offline Switching Power supply Circuit Diagram

The schematic shows a 50W power supply with a 5-V 10-A output. It is a fly back converter operating in the continuous mode. The circuit features a primary side and secondary side controller will full-protection from fault conditions such as over current. After the fault condition has been removed, the power supply will enter the soft-start cycle before recommencing normal operation.

50W Offline Switching Power supply Circuit Diagram



Component Values Table

C1	0.022 µF/400V	R1	100Ω at 25°C	L1	25 µH
C2	470 µF/250V	R2	1Ω/1W	D1	1N4937
C3	470 µF/16V	R3	10Ω/0.25W	D2	MBR1035
C4	220 pF/100V	R4	100 kΩ/0.25W	T1	Lp = 9 mH, n = 1:15
C5	470 pF/500V	R5	0.33Ω/1W	T2	50 µH, n = 1:3
C6	2200 pF/500V	R6	10 kΩ/0.25W	F1	Fuse 1 A/SB
C7	270 pF/500V	R7	390Ω/2W	M1	Diode Bridge
C8	39 pF/500V	R8	22 kΩ/10W	Q1	BUZ80A/IXTP4N80 (220VAC)
C9	11,000 µF/6.3V	R9	68Ω/0.25W		
C10	10 µF/16V	R10	10Ω/0.5W	Q1	GE IRF823 (110VAC)
C11	0.047 µF/10V	R11	3.3Ω/0.5W		
		RL	5Ω/10W		

Continue Reading[...]

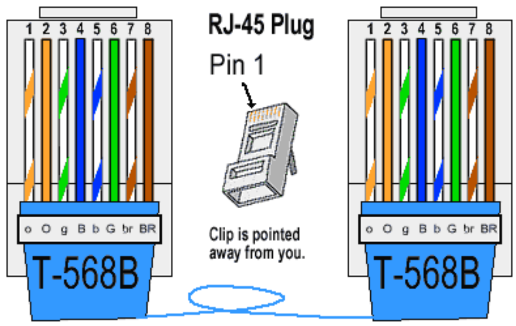
Posted by Unknown at 11:45 AM

Labels: 50w, circuit, diagram, offline, power, supply, switching

MONDAY, AUGUST 5, 2013

Wiring Diagram

Cat5e Wiring Diagram on Network Cable Use Either 568a Or Most Common 568b Wiring On Both Ends Network Cable Use Either 568a Or Most Common 568b Wiring On Both Ends.



How To Make A Cat5e Network Cable Miscellaneous Items.

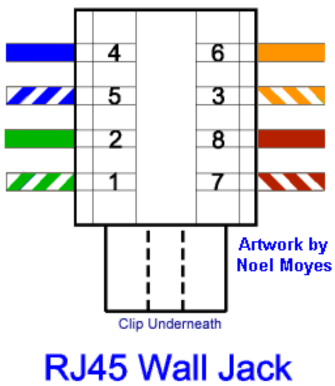
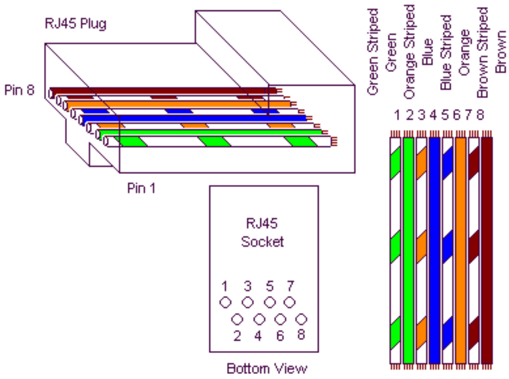
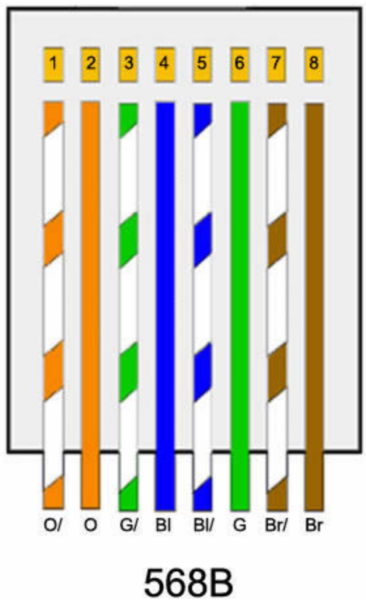


Diagram Of Correct Color Alignment For Making Cat5e Network Wall Jack.

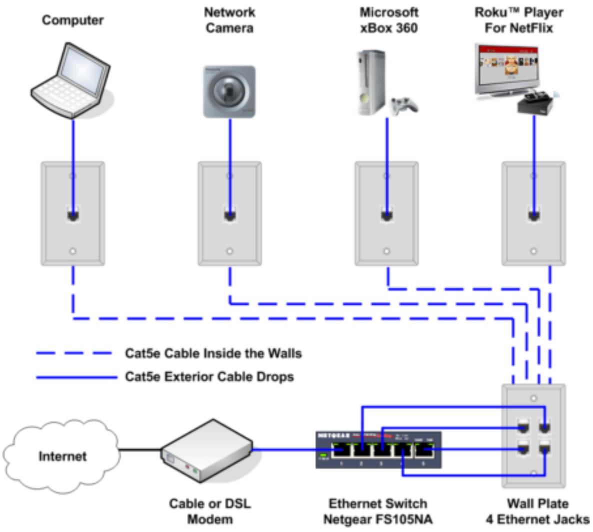


Mica Machine Information Consulting Alliance Windows Xp Help.



Cross Over Cable Just Uses The Wiring Configuration From Each.

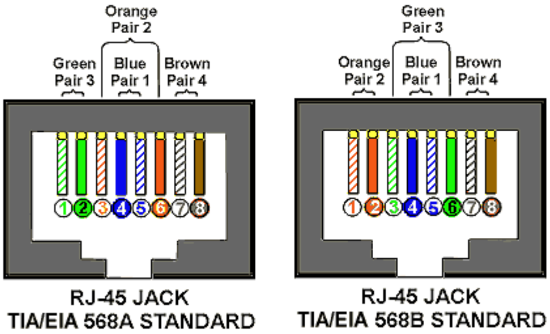
Cat5e Wiring Diagram on How To Wire A Cat5 Eia 568 A Cable
How To Wire A Cat5 Eia 568 A Cable.



78 Responses To How To Install An Ethernet Jack For A Home Network.

Cat5e Wiring Diagram on Fs Asus P8p67 Motherboard And Amd Xfx 6950
Fs Asus P8p67 Motherboard And Amd Xfx 6950.

Cat5e Wiring Diagram on Cat 5e Wiring Diagram
Cat 5e Wiring Diagram.



Cat5e Cable Cat 5e Cables Patch Cords.

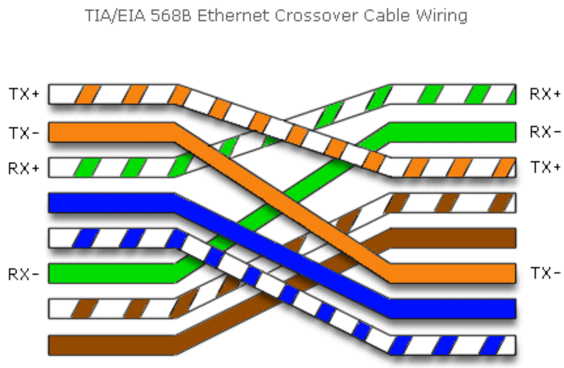
Posted by Unknown at 11:15 AM

Continue Reading[...]

Labels: diagram, wiring

SATURDAY, AUGUST 3, 2013

Cat7 Cables Unshielded Twisted Pairethernet Wiring



Crossover Ethernet Cable.

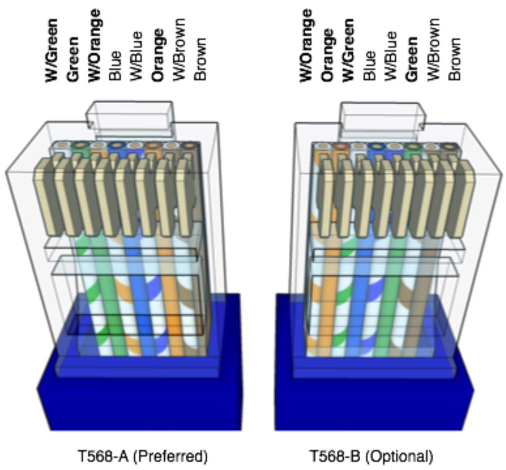
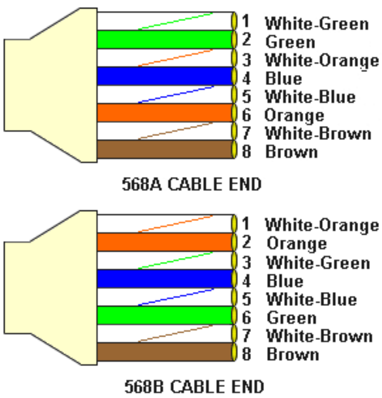


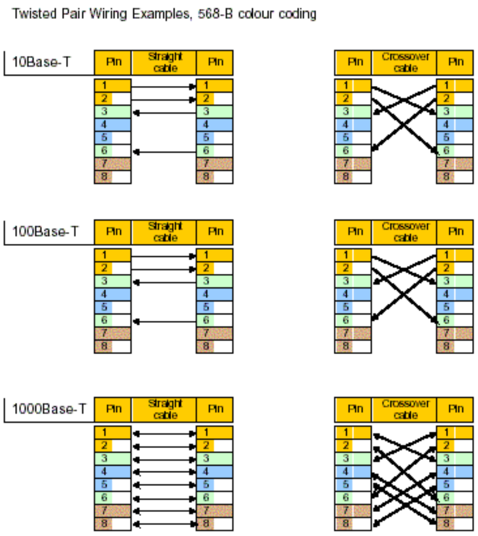
Figure 3 Tie Eia T568 Ethernet Wiring Standards.



Cat7 Cables 100 Ohm Utp Unshielded Twisted Pair Ethernet Wiring.

Ethernet Wiring on Switched Ethernet Modern Ethernet Implementations Often Look Nothing
Switched Ethernet Modern Ethernet Implementations Often Look Nothing.

Ethernet Wiring on Figure 4 Wiring Diagram For An Ethernet Crossover Cable
Figure 4 Wiring Diagram For An Ethernet Crossover Cable.



Detailed Graph For Coloring Scheme Eia 568 Is.

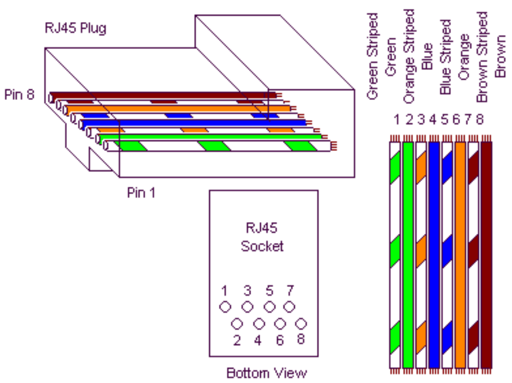
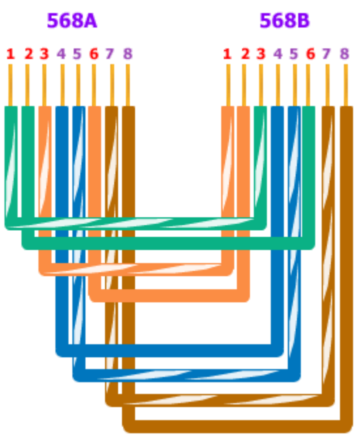
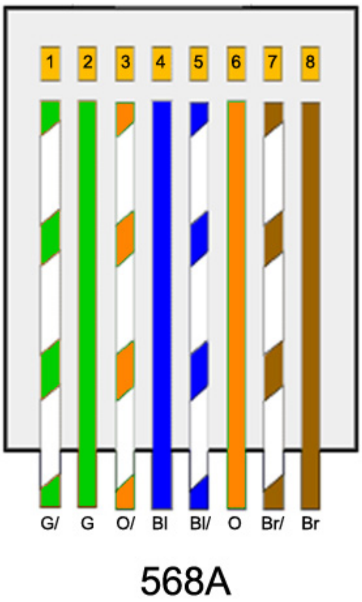


Diagram Of Correct Color Alignment For Making Cat5e Network Cable.



Category 5 Wiring Scheme Straight Through Cable Vs Crossover Cable.



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