Fox Valley Electric Auto Association
1522 Clinton Place
River Forest, IL 60305-1208

John Emde
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Address Correction Requested

NEXT MEETING: Friday, October 17at 7:30 PM in Room K-161 at The College of Dupage SW Corner of 22nd Street & Lambert Road in Glen Ellen.

DISCUSSION TOPICS - 1. Once again, the Future Car Challenge presentation.
2. Authorize 1998 paid-up membership for persons who donate a Participation Share.

MEMBERSHIP INFORMATION

Any person interested in electric cars is welcome to join the FVEAA. The cost for a full year's dues is $20 that will entitle the member to receive our monthly Newsletter that contains useful information about electric car components, construction, policies and events.

To obtain information about the FVEAA, you may contact either President Woods or Vice President Shafer:

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OCTOBER 1997 PRESSEZ

1. This is a reminder that November is the month for membership annual renewal. A renewal form is in this newsletter. Save postage by bringing your check to the meeting.

2. In November we elect club officers for next year. Give your suggestions to past presidents Dana Mock, Bill or me, especially if you want to volunteer.

3. According to John Emde, the electric car race at the Indy was cancelled due to track construction work. There will be no video of this non event at our meeting.

4. The delayed presentation of The Future Car Challenge for 1997 is rescheduled for this meeting if it coordinates with Bob Larson's schedule.

Ken

SEPTEMBER MEETING MINUTES

Sixteen members and one guest attended the meeting which was called to order at the College by President Woods at 7:40 PM.

The minutes were approved and Treasurer Corel's report that we have a total of $ 4024.91 in the bank was accepted.

Member Ed Meyer requested the FVEAA provide an identifying sign for the club Nissan he purchased because it cannot be readily identified it as an EV. An expenditure was approved. The Nissan received the top trophy in the speciality car division of Bolingbrook's Summer Jubilee Car Cruise. Ed reported the response was more encouraging than during the FVEAA participation last winter's Custom Car Show.

Member Jerry Mitchell reported he now has a 1990 Mitsuibishi Eclipse 5-speed manual transmission with a blown engine and no rust. This is a good conversion candidate. Jerry now owns two other electric conversions.

Member John Emde is willing to give his 1994 Suburau 4-speed conversion that needs a new controller, batteries, and a brake job. He needs the garage space for another project.

Member Redpath has finished the Nissan Owner's Manual. Bill Shafer took a copy to San Francisco during his vacation there and gave it to a member of the Santa Clara Association for comments.

President Woods has information on Electric Vehicle Symposium, EVS-14 that will be held in Orlando. This is the fourteenth biennial meeting of this International Forum on EV developments.

Member Dick Ness has information he got from an auto dealer selling the EV Warrior electric bike. He also thanked John Emde for help to improve the "Schwinnvolt" bike he built. Info on his project will be included in the November newsletter.

Member George Krajnovich reported he is ready to fabricate the cables and connect the batteries in his Horizon conversion.

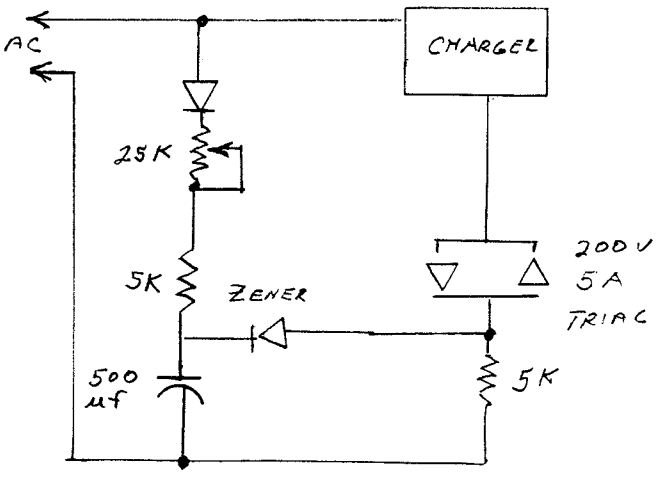
Members Ken Meyers and Mock and used a computer program for further development of the "fuel" gage for EVs.

Member Vana had information from BAT on their EDTA treatment to rejuvenate EV batteries. He also stated that BAT had gone 1000 miles on a single charge using the Israeli-developed zinc battery system.

Member Emde provided a description of a "soft-start" device that eliminates arcing when energizing a battery charger. The schematic is shown below:

The meeting was adjourned at 9:40 PM

Submitted by
Secretary Dave Aarvold



RECENT ARTICLES ABOUT ELECTRIC VEHICLES

Power Play, Electric cars to undergo far-ranging change. Chicago Tribune 9/28/97 Business Section Page 24H. The first electric cars are selling slowly, as expected when they were introduced. The energy deity of a typical lead-acid EV battery is about 18 watthours per pound. It would take about 6 pounds of battery to run a 100-watt incandescent lamp for one hour. The EV-1 lead-acid battery weighs 1100 pounds and stores 17 kWh, the energy equivalent of less than 1.5 gallons of gasoline.

Changes are in progress, including replacement of lead acid batteries for NiMH units that will double the present range. These units store 36 watthours per pound, but they are expensive. Tests are underway to compare life cycle costs of lead-acid and NiMH units. NiMH batteries are expected to be able to be discharged more times during its lifetime than lead-acid.

Too soon to tell, electrics generating safety debate. Chicago Tribune 9/28. Mobil Oil, an opponent of government help for EVs, referred to "toxic, corrosive, and explosive chemicals" in batteries. The California Manufacturers Association has placed ads saying that current technology can't produce a safe, reliable, and convenient electric car at a price consumers are willing to pay.

On-road experience has yet to provide an answer. EVs have not been involved in accidents that can provide useful data. A California deputy Fire Marshall says they have a 52-page phamphlet on handling major accidents involving EVs. He notes these cars are potentially a lot safer that petroleum-fueled cars because of the potential for gasoline major fires during a collision.

Truck sets Pike's Peak record. IEEE Spectrum, September, 1997, Page 24 (EV Watch). A Chevy S-10 conversion with NiMH batteries set a new EV record during the July, 1997 running this annual event. It reached the 4301-meter summit in 15 minutes, 32.71 seconds, beating the 1994 record set by a converted Honda Civic of 15:44.71. The record for gasoline trucks was 11:36:63. The course is 19.98 km long, contains 156 turns, begins at elevation 2866 meters and the climb is 1435 meters. The average grade is 7.2%. At the end the battery pack had 30% of its 28 kWh energy still available.

EV Infrastructure building in California. IEEE Spectrum, 9/97. Charging stations are essential for the GM EV1 with its paddle-type (inductive) charging system to avoid stranding motorists. Supermarket parking lots, locations at LAX, Universal City in Hollywood, and other places have installed about 50. GM is providing matching funds for the installations as a part of its test program. The most chargers are the 29 at the Naval Construction Battalion Center at Port Huenme, outside of Oxnartd. It is the home for 23 Chevy S-10, six Chrysler EPIC minivans. There are over 80 charging stations now operating in Southern California with additional sites expecteddded.

RECENT ARTICLES ABOUT ELECTRIC VEHICLES-Continued

Plastic Neon. Chicago Tribune 9/14/97. Chrysler's German facility has found a way to make a car body largely from plastic at a fraction of the cost for a metal body. The concept Pronto may see a year 2000 debut as that year's Neon. The plastic is color molded with a satin finish. Chrysler said it could produce 100,000 units annually at one-third of the $1-billion cost for the metal body Neon. (Editor's note - could this be a possibility for an electric version?)

Posicharge. Chicago Sun-Times 9/12 and Chicago Tribune 9/28. Posicharge, a rapid charge system developed by AeroVironment for Ford, can charge a Ranger converted pickup to the 80% level in about 20 minutes.

Growing Electric Vehicle Firm Gains Backing From Iacocca. NY Times News Service 9/21/97. Unique Mobility, a tiny technology firm specializing in electric vehicle applications, hasn't turned a profit after 14 years of work. Lee Iacocca has invested in the company, acquiring a 12% ownership of the company for $ 2.77/share. The company focuses on products for electric bicycles, scooters, and similar applications. Unique has formed strong partnerships with Asian companies making these products. About 170,000 electric bikes and scooters were sold last year. Taiwan has mandated 2% of bikes and scooter sold in 2000 must be electric. China, where scooters and bikes can negotiate the crowded streets and narrow alleys, is home to 55 manufacturers of electric scooters and bikes.

Carmakers seek new lease on electrics with consumers. Chicago Tribune 9/28/97. Automakers are planning strategies to get the public to start leasing electric vehicles. A Ford Motor alternative fuel vehicle programs official observed, "There isn't going to be a miracle battery. If we get 100 miles in real world driving that's awe-inspiring and that's were its going to stop for a long, long time." Limited range electric cars are going to remain very expensive and leasing is a way of making these more attractive to consumers. Sometimes auto companies may assume part of the lease cost to aid sales and help them comply with various governmental sales mandates.

Electric baby cars gear up for delivery. Chicago Sun Times 9/29/97, Page 4A. A new wave of baby cars is about to be imported. Mercedes Benz has plans for an electric version of its A-Class compact. Korean Hyundai and Daewoo may offer electric versions of their Atos and Matiz products that were shown at the Frankfort Auto Show. The show also featured displays of two and three-wheeled concept vehicles from BMW and Mercedes. Britain's new Mini is also a candidate. The Smart, an urban runabout is a joint venture between Mercedes and Swatch, the Swiss watchmaker that will sell for less than $ 12,000.

EV Tidbits from Automotive Industry July 97 issue, Page 19 says that Korea thinks EVs may be the ticket into many new world markets. The Ministry of Trade Industry and Energy wants key EV technologies to be developed in Korea and has given Daewoo, Hyundai, and Hanjin their marching orders.

FROM OTHER EV NEWSLETTERS

AVEA, The Australian Organization in their July/Aug Newsletter noted the World Solar Cycle Challenge will be run with a revised format. Competitors will start from Victoria Park in Adeliade, up the Stuart Highway to Alice Springs, and back to the Superdrome in Adeliade. The event covers 1131 km. Unlimited battery charging will be allowed so vehicles can maintain the highest speed. Entrants must be able to achieve 50 kph.

The next **World Solar Challenge** will be next held in November of 1999. It is a 3000 km event from Darwin to Adelaide. The **Sunrace** will take place in January. This is a 1467 km event running between Adelaide and Melbourne.

Since customers are hooked on a 300-400 km range for their gasoline vehicles, Toyota ha announced plans for a hybrid electric car. It may be based on their RAV-4. The company intends to build 40,000 units in 1998. The article provides technical details for the car. The Nissan S-HEV hybrid and Ford's hybrid Supercar are also the subject of articles.

There were articles batteries and chargers, often-overlooked subjects. Michael Oates is amazed that persons will spend about $ 2000 for an EV motor, over $ 1000 for a controller and an equal amount for batteries yet balk at paying for a decent charger. Those who opt for an inefficient charger end up paying for the energy they lose and unnecessary deterioration of their battery pack. His e-mail address is <RBK45A@PRODIGY.COM if you want to contact him. Doug Pratt describes the deterioration of the steel battery boxes in his 17-year old Courier truck, a Jet Industries conversion. The steel boxes were lined with a 1/8" PVC material. In spite of this precaution and an air blower system to exhaust fumes, the boxes were almost falling out due to corrosion deterioration. The entire bottom and two inches of the sides were completely converted to iron oxide. Energy bills for the Lester"buzz-box" charger dropped when it was replaced with a KW unit.

EEVC published by the Eastern Group in their September issue featured a report on the Duryea Day event. President Oliver Perry in his column noted he has several Advanced Placement Students who are EEVC members who use the Internet. They asked, "Why should we have to attend meetings to get our questions answered? Why not use the Net?" The student's asked the following: If EVs become mainstream... who will pay to add recharging stations? Will their use cause increased pollution from electric power plants. If you wish to answer, his Net address is Lithium40@aol.com. Bob Batson of EVAmerica provided a response that appeared in the newsletter. Bob noted an IC engine has an efficiency of about 15% while an electric motor is about 95%. Bob produced tables derived that show that when power plant and transmission efficiency is considered, an ICE consumes 14,400 Btu/mile @ 10 mpg and the EV1 uses 10,800 Btu/mile @ 1 mile/kwh. He also notes that emissions are reduced with electrics. Finally, he noted that electrics can use energy produced by other sources such as hydro and solar.

FROM OTHER EV NEWSLETTERS - Continued

SEVA, the active group in Sacramento, in their September Newsletter announced the 25th annual Electric Car Rally at Stanford University. (Editors note - this event is called the Silicon Valley Rally and includes all the chapters of the EAA in the area.) It is scheduled annually on the third Saturday in September. (Editor's Note for Internetheads - for a good look at the Rally, call up http://www.geocities.com/motorcity/a754/rally.html

They also report that an electric car topped 237 mph on the first leg of a run during speed week at the Bonneville salt flats. After the run it tipped over at about 30 mph when its braking parachute malfunctioned. This prevented the second run needed to claim a new official record. The present record is 183 mph held by a specially prepared GM EV-1.

Their October issue was a one-page substitute document prepared by a substitute editor because regular editor, Tony Cygan, was on vacation.

VEVA, the Vancouver Association, in their September issue featured a 3-page description of Bill Glazier's Continuously Variable Transmission (CVT) for EV's. They also report that Toyota, who will unveil the **PRIUS** hybrid in December will reduce its price by $ 4130. Initial price was to be between $20,660 and $ 24800. In another article, they report that a new study by MIT contradicts the Carnigie-Mellon Report that claimed EV batteries are worse for the environment that conventional cars. (Editors note - Sorry Ed).

NOVEMBER IS THE MONTH TO RENEW YOUR FVEAA MEMBERSHIP

FVEAA's fiscal year begins in November. On the last page you will find a membership renewal form. The Editor urges each of our 81 members to promptly send their $ 20 check for renewal to Treasurer Corel. You will continue to receive the FVEAA monthly Newsletter until the January issue. After that your membership Code will be changed from 1 (active) to 2 (lost) We currently have 17 names under Code 2.

ELECTRIC BIKE STUFF

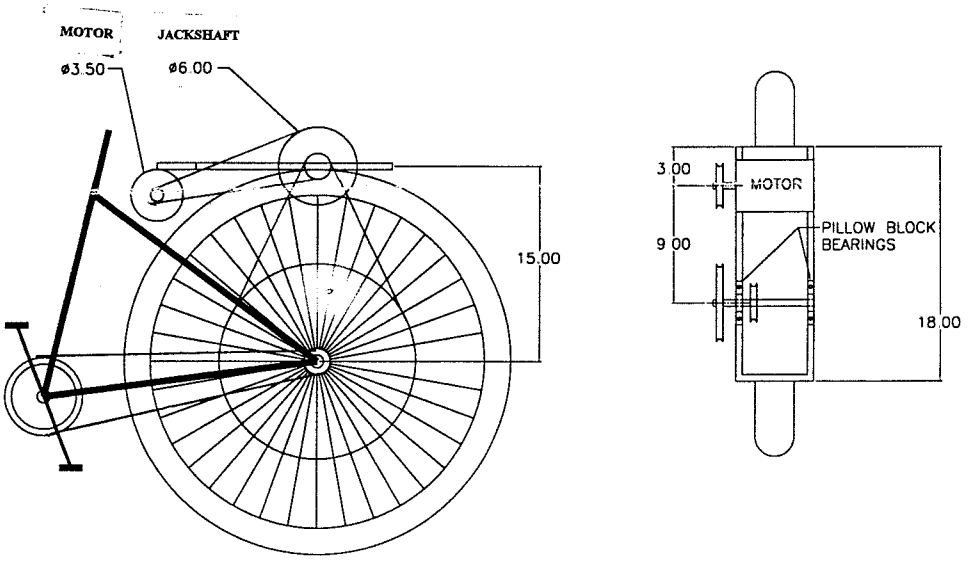
Bicycles are the most-prevalent means of wheeled transportation in the world, principally due to their extensive use in China and other Asian countries. There are an estimated 100-million conventional bicycles in the US. Member Dick Ness interest in electric vehicles is concentrated on electric bikes. He has built three versions. He exhibited his "SCHWINNVOLT" at last winter's Custom Auto Show. Although his bike didn't compete with the chromed special bikes, especially the collection from Berwyn, his exhibit drew lots of attention. Dick gave the Editor information about his bike for this issue.

ELECTRIC BIKE STUFF - Continued

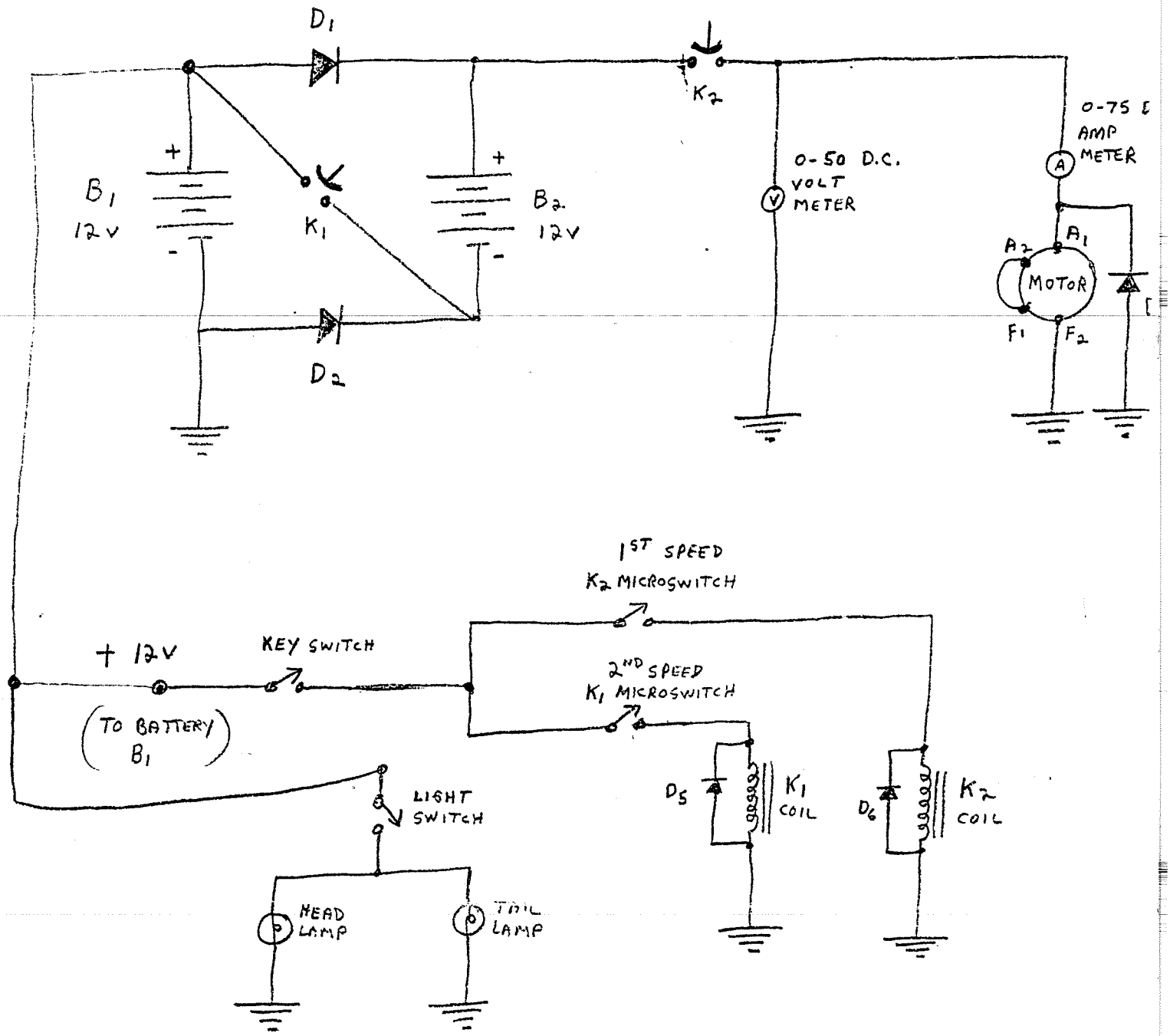
There are two manufacturers of electric bikes in the US.for commercial sale: ZAP in Sebastopol CA and the EV WARRIOR, conceived by auto designer Malcom Bricklin, by Electric Bicycle Company in Burbank CA. The WORLDBIKE produced by ZAP sells for $ 499. It features a patented single-motor design and six gear settings. Internet information on the ZAP, and a companion electric-powered skateboard-type device, the ZAPPY, can be accessed at the Website http://zapbikles.com The EV WARRIOR is more sophisticated vehicle featuring two 900-watt, 24-volt motors driving spindles that press against the rear tire on two sides. (Editors note - any arrangement that presses a drive wheel against the tire will cause tire wear and is subject to slippage in wet weather). The bike has a solid-state electronic controller and two 12-volt, 17 amp-hour sealed batteries. The WARRIOR sells in the Chicago area for about $ 1500. The Cadillac dealer in Elmhurst even has an interesting comic book, "The EV Warrior" in his showroom.

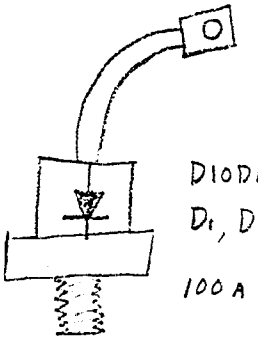
Dick Ness' bike retains the balloon-tired appearance of an early Schwinn. He mounted the motor, jackshaft, and drive as shown in the sketch below. Two batteries are mounted "sidesaddle" fashion straddling the rear wheel. This arrangement gives a stable low center of gravity. The simple two-speed, voltage switched controller was designed by FVEAA members to help Dick. A schematic of the control is also shown.

DICK NESS' TRANSMISSION SYSTEM FOR HIS ELECTRIC BIKE



RICHARD NESS BICYCLE 8/28/97





DIODES
D_1, D_2, D_3
100A 50V

DIODES
D_5, D_6
1A 50V