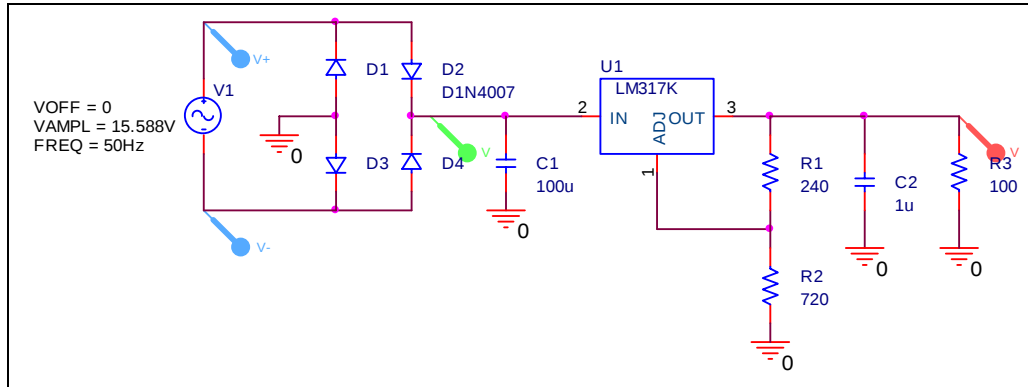


مجموعة البرامج OrCAD 10.0

Capture () Pspice ...\\capture\\library\\pspice\\

1. رسم مخطط الدارة:

(1)
 : ($9 \times \sqrt{3} = 15.588$) 220/9
 LM317
 .R2
 ...7912 7812 7805
 —)
 .(



الشكل 1

(1)

DIODE		D1N4007	D1 .. D4
ANALOG	100u	C	C1
ANALOG	1u	C	C2
ANALOG	240	R	R1
ANALOG	720	R	R2
ANALOG	100	R	R3
OPAMP		LM317K	U1
SOURCE	VOFF = 0 VAMPL = 15.588v FREQ = 50	VSIN	V1

الجدول 1

2. محاكاة الدارة:

Time Domain

(2):

40ms	Run to time
0	Start saving data after
0.1ms	Maximum step size

الجدول 2



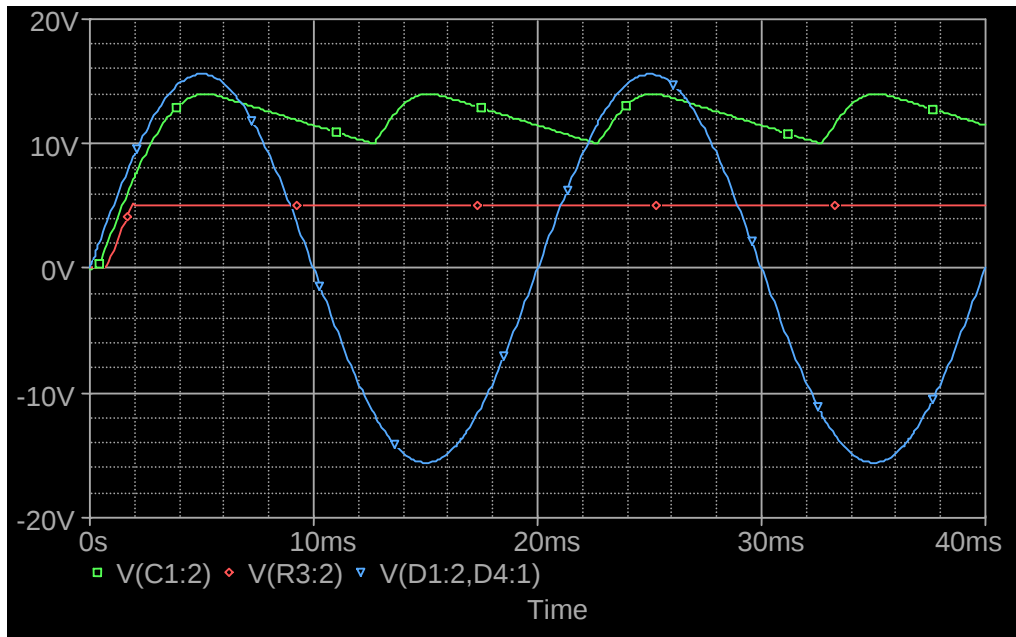
)



)

(2)

.V1



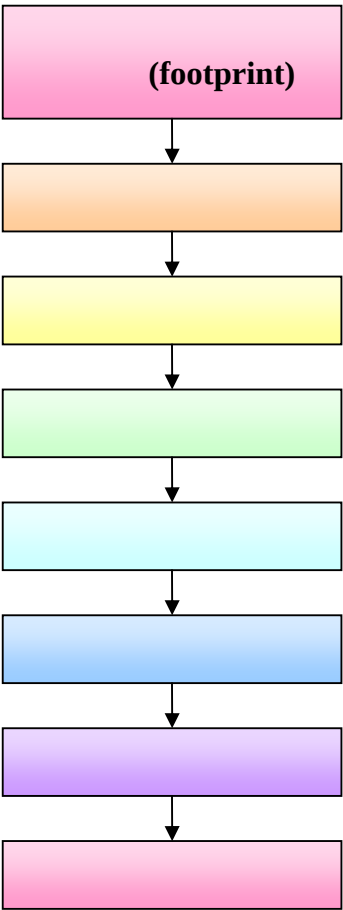
الشكل 2

PSpice

3. الانتقال إلى دائرة مطبوعة:

PCB

:(3)



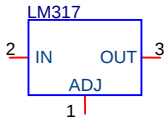
الشكل 3

:(footprint)

.1

: LM317

: Capture



: TO220



.20W

: TO39

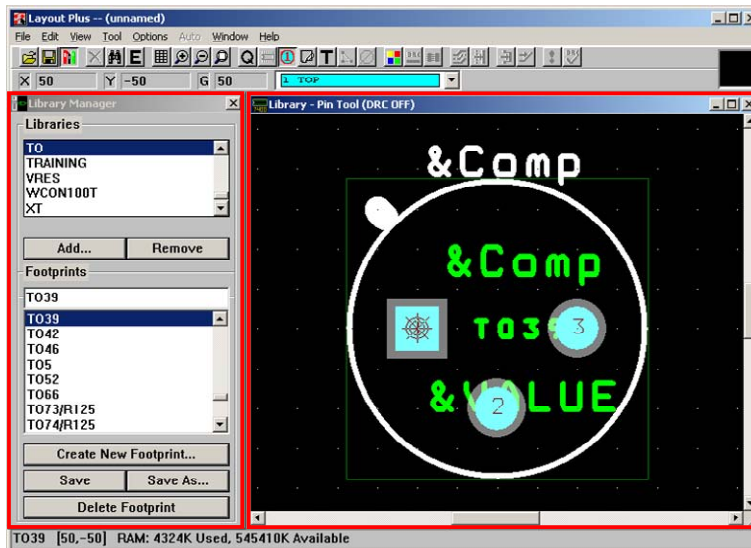


TO220 TO39 .2W footprint
Capture .Layout
 .Layout
 : (Property Editor)
 Capture
 Edit properties
(4) .(C2 C1
 .Footprint

Property Editor					
New Column... Apply Display... Delete Property Filter by: < Current properties >					
		Part Reference	PCB Footprint	Power Pins Visible	Primiti ^
1	+ SCHEMATIC1 : PAGE1 : C1	C1	RAD/CK05	☐	DEFAUI
2	+ SCHEMATIC1 : PAGE1 : C2	C2	RAD/CK05	☐	DEFAUI

الشكل 4

() Layout : (Library Manager)
 .
 (Layout Plus) Layout :
Tools .Orcad Layout Start
 : Library Manager
 .
Libraries TO :TO39
TO39 Footprints
(5) .



الشكل 5

Edit property

:(3)

Footprint

TM_CYLND	CYL/D.250/LS.100/.031	C1
TM_CYLND	CYL/D.200/LS.100/.031	C2
TM_DIODE	DAX1/1N_4001-4007	D1
TM_DIODE	DAX1/1N_4001-4007	D2
TM_DIODE	DAX1/1N_4001-4007	D3
TM_DIODE	DAX1/1N_4001-4007	D4
TM_AXIAL	AX/.400X.100/.031	R1
TM_AXIAL	AX/.400X.100/.031	R2
TM_RAD	RAD/.300X.250/LS.200/.031	R3
TO	TO220AB/VF1	U1
TM_RAD	RAD/.300X.250/LS.200/.031	V1

: Footprint

(6)

Property Editor					
New Column...		Apply	Display...	Delete Property	Filter by: < Current properties >
		Part Reference	PCB Footprint	PHASE	P
1	+ SCHEMATIC1 : PAGE1 : C1	C1	CYL/D.250/L.S.100/.031		
2	+ SCHEMATIC1 : PAGE1 : C2	C2	CYL/D.200/L.S.100/.031		
3	+ SCHEMATIC1 : PAGE1 : D1	D1	DAX1/1N_4001-4007		
4	+ SCHEMATIC1 : PAGE1 : D2	D2	DAX1/1N_4001-4007		
5	+ SCHEMATIC1 : PAGE1 : D3	D3	DAX1/1N_4001-4007		
6	+ SCHEMATIC1 : PAGE1 : D4	D4	DAX1/1N_4001-4007		
7	+ SCHEMATIC1 : PAGE1 : R1	R1	AX/.400X.100/.031		F
8	+ SCHEMATIC1 : PAGE1 : R2	R2	AX/.400X.100/.031		F
9	+ SCHEMATIC1 : PAGE1 : R3	R3	RAD/.300X.250/L.S.200/		F
10	+ SCHEMATIC1 : PAGE1 : U1	U1	TO220AB/WF1		
11	+ SCHEMATIC1 : PAGE1 : V1	V1	RAD/.300X.250/L.S.200/	0	

الشكل 6

Pspice
Layout
TRUE

V1

PspiceOnly

:(Netlist) .2

Capture
.(NC-VHDL Pspice Layout :
Layout (*.mnl) Capture Layout

Create Netlist... Tools (*.dsn) Window
Create Netlist
.Layout

Browse
) OK . User Properties are in inches
(
(.net) (.mnl) Outputs
.PSpice Capture

: (*.max) .3

Layout .
AutoECO
(Technology
.template)

(.TCH)

(tracks)

...

:

.File → New Layout

File Names .AutoECO

Options

.

AutoECO

Input Layout TCH or TPL or MAX

Browse

OrCAD_10.0\tools\layout_plus\data

jump6238.tch

(1mil = 0.001 inch .38 mil 62 mil () via

. = 0.0254 mm)

Input MNL netlist file

.2

.Output Layout MAX file

.Apply ECO

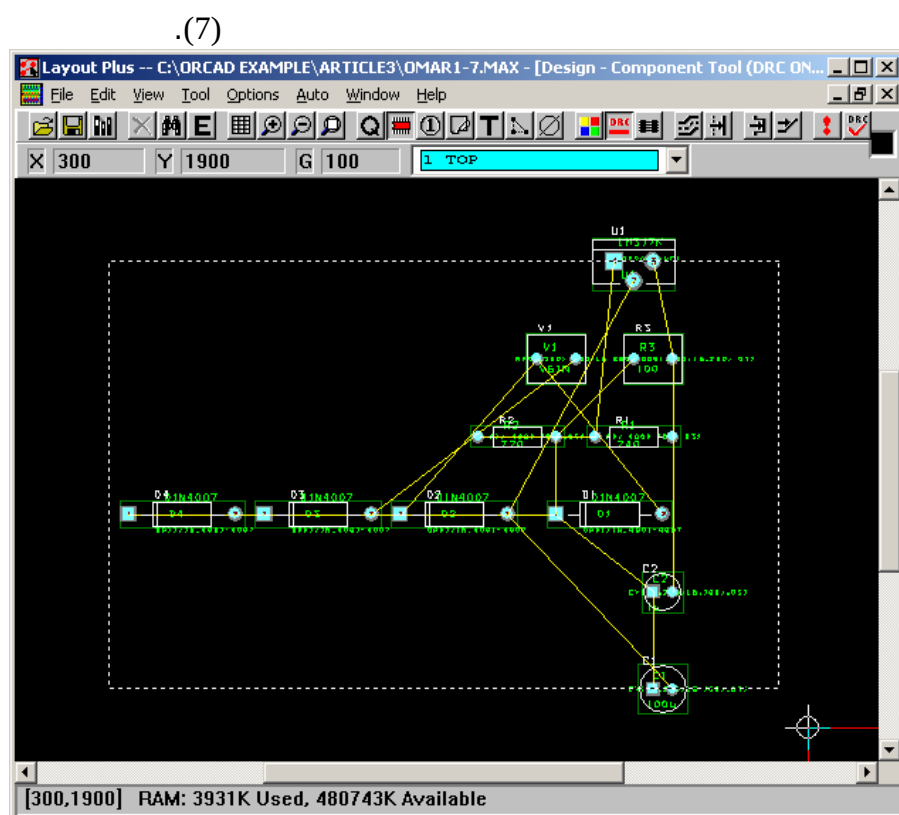
Accept this AutoECO

Processing completed AutoECO

.ECO

.OK

Zoom All



الشكل 7

()

: .4

(track widths)

)  View Spreadsheet

Net

(

Nets

.(8)

Nets			
Net Name	Color	Width	
		Min	Max
0		12	
N26952		12	
N26956		12	
N27732		12	
N27991		12	
N28023		12	

الشكل 8

Width
Min Con Max

Conn Width Min Width

Edit Net

.Nets

OK

(mil) 25

Max Width

Strategy...



View Spreadsheet

Route Spacing

Route Spacing

(

)

.(...Track to Track

)

Layer
Name

OK

25

Edit Spacing

.Route Spacing

: .5

(Obstacles)

:Layout



(Obstacle Tool)

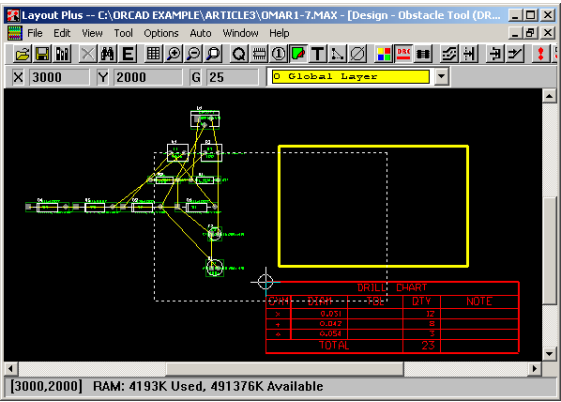
()



()

.New...

(9)



الشكل 9

: (placement) .6



) Reconnect Mode



(Place Grid

System Setting...

25 mil 100 mil [X,Y]

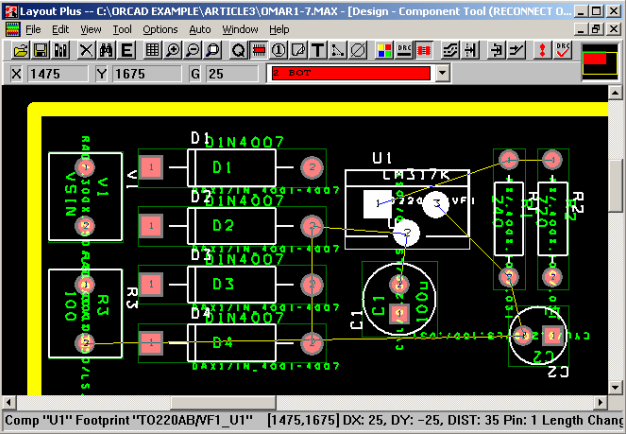
.Options

(i) Zoom In

.(o) Zoom Out

(R3) (V1) R Rotate

(10)

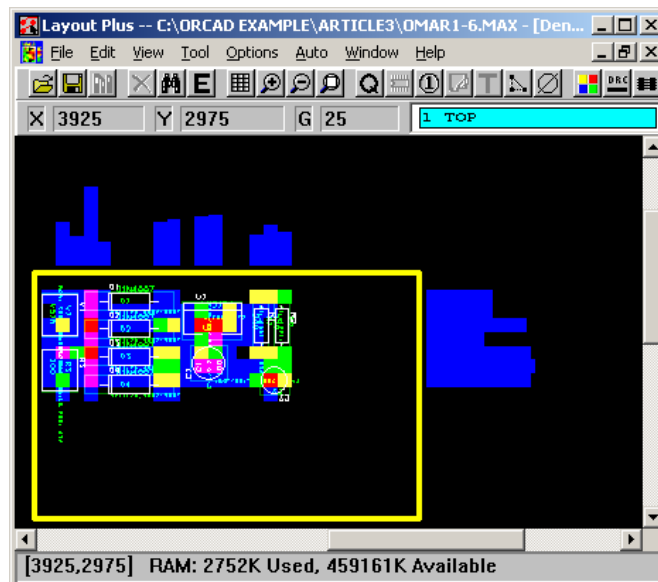


الشكل 10

.(Density Graph)

.(11)

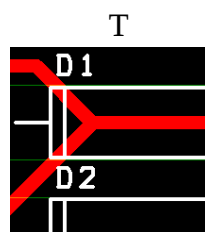
Coarse Density Graph View



الشكل 11

- 50% 75% 25% 75% 100%
- .Design View
- .7 (Route) :
- () Edit Segment Mode
- (track) ()
-) 45°
- .(
- :

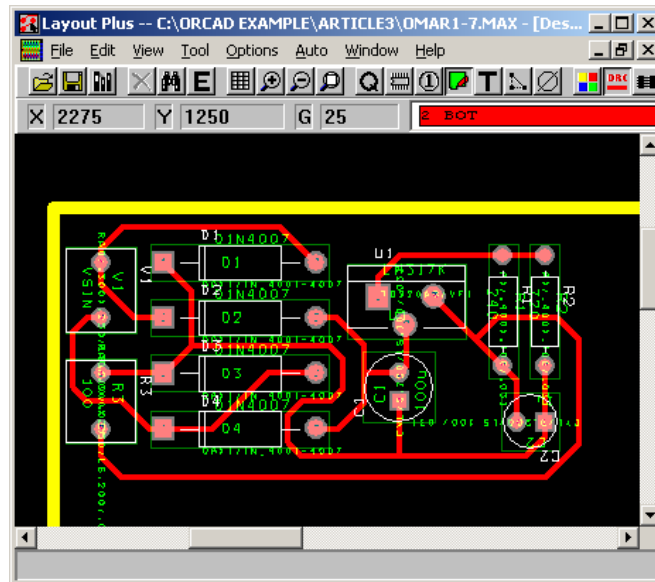
:(12)



الشكل 12

- Ctrl
- Delete .Ctrl
- () Unroute Segment
- Unroute
- Alt + D
- .(
- D
- (
- Unroute Net

(13)

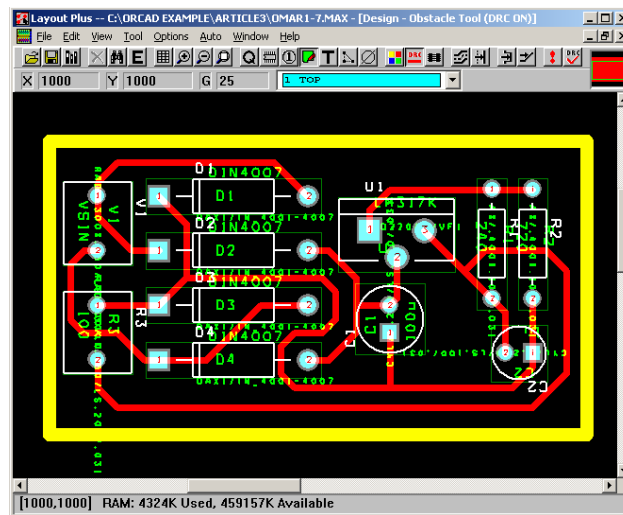


الشكل 13

 Obstacle

S

(14)



الشكل 14

.8

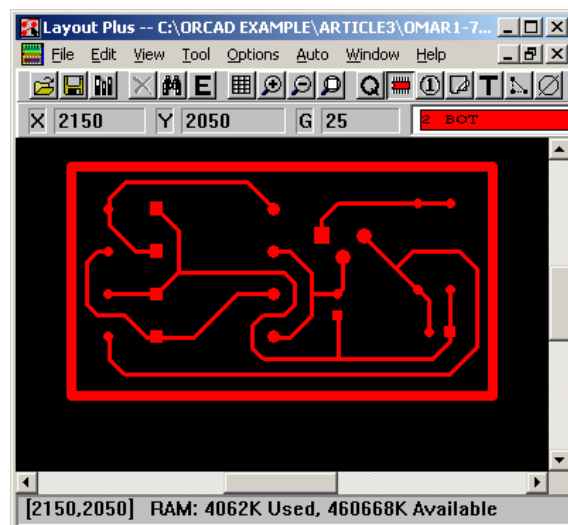
Create Reports... Auto

.OK

Bottom
(PRINT.COL)

Generate Reports

Color Setup Files of type File Load...
:(15)



الشكل 15

Color

Delete



Color Settings
Default (Global Layer)

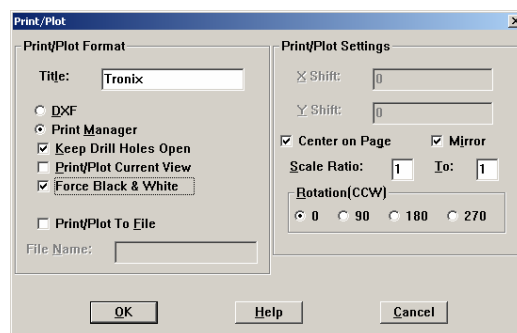
.Color

(16)

.File

Print/Plot...

OK



الشكل 16