

ZXFV302EV

PCB design

A continuous ground plane is required under the device and its signal connection paths, to provide the shortest possible ground return paths for signals and power supply filtering.

A double-sided or multi-layer PCB construction is required, with plated-through via holes providing closely spaced low-inductance connections from some components to the continuous ground plane (some of these holes are not visible in the figures for the Evaluation Board - artworks and NC drill output can be provided if required).

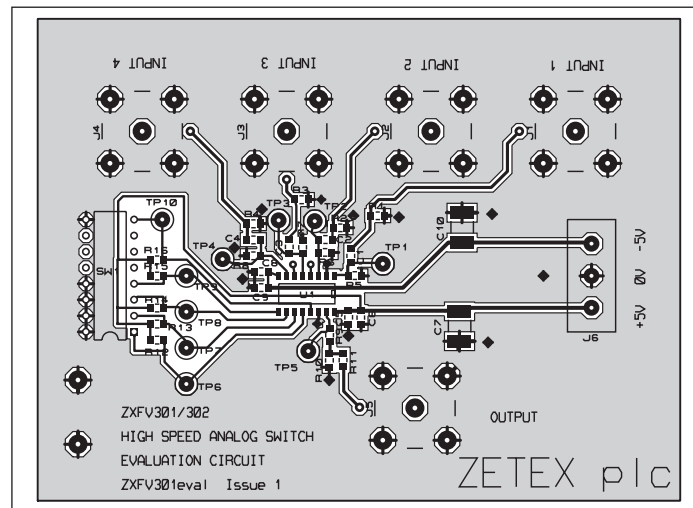


Figure 2 Evaluation circuit top copper layout
(overall dimensions 2.5 x 2.25 inches)

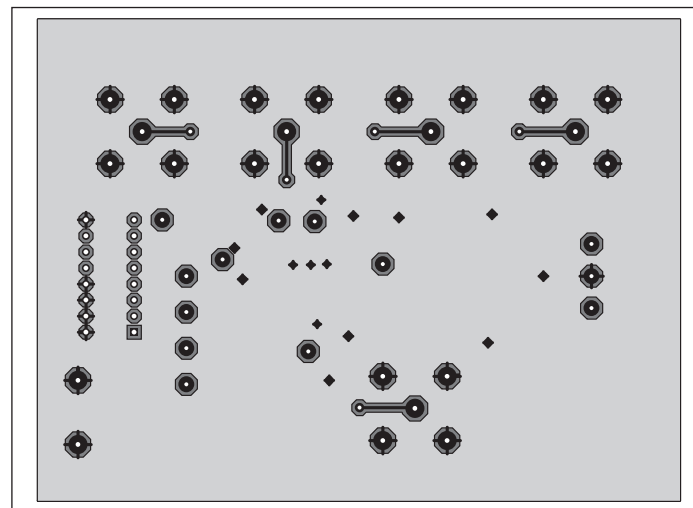


Figure 3 Evaluation board bottom copper layout
(viewed through from top)

ZXFV302EV

Power supply filtering

For the power supply filtering, low inductance surface mount capacitors are normally required. It has been found that very good RF decoupling is provided on each supply using a 1000pF NPO size 0805 or smaller ceramic surface mount capacitor, closest to the device pin, with an adjacent 0.1µF X7R capacitor. Other configurations are possible and it may be found that a single 0.01µF X7R capacitor on each supply gives good results. However this should be supported by larger decoupling capacitors elsewhere on the printed circuit board. Values of 1 to 10µF are recommended particularly where the voltage regulators are located more than a few inches from the device. These larger capacitors are recommended to be solid tantalum electrolytic or ceramic types.

Evaluation board parts list

QTY	CCT - REF	VALUE	DESCRIPTION
Resistors, surface mount			
1	R1,	51R	0805
2	R2,R3	1kΩ	0805
1	R4	120R	0805
1	R5	10R	0805
1	R6	62R	0805
4	R1 to R4	51R	0805
4	R5 to R8	22kΩ	0805
1	R9	120R	0805
1	R10	62R	0805
1	R11	10R	0805
5	R12 - R16	47kΩ	0805
Capacitors, surface mount			
2		1nF	50V ceramic 0805 NPO
6		100nF	25V ceramic 0805 XR7
2		10µF	16V Tant Elec size C
Integrated circuits			
1	U1	Zetex ZXFV302N16	
Miscellaneous			
5		BNC socket, PCB straight flange, e.g. Tyco B35N14H999X99	
1		3-way PCB screw terminal block IMO 20.501/3SB	
1	SW1	DIL switch, 8 way	
10	TP1 to TP10	PCB test terminal, red, W.Hughes 100-107	

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