

## Where to find help for some particular components

(as an example and of course from all others component distributors not here indicated because not known by us).

### Relays

You can try many small relays from different manufacturers that fit in our board space. We have used nowadays available industry standard types (single SPDT dimensions are: long 15.5 mm (.61), large 12 mm. (0.472), high 13.9 mm. (.547) like Nais/Aromat/Omron or other firms and **most of them are single SPDT** unit otherwise indicated in the schematics.

#### Particular ones:

In **unit 1** – Low-Pass/High Pass unit the input relay is a **Nais/Aromat TX2-12V** (a smaller dimension with good isolation per price) pdf file at <http://naisrelay.com/> choose PDF catalog, mechanical relays.

The same type has been used also in **unit 4** - Pin-diodes variable attenuator, also in **unit 8** – the RX out relay only is a SPDT by **Nais TX2-12V** (same as above).

It is available from Allied Electronics at <http://www.alliedelec.com:>

Mfr.'s Part #: TX2-12V  
Allied Stock #: 788-1030  
Manufacturer: AROMAT  
Description: High Capacity Relay, Through Hole, Single Side Stable, 12V  
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In **unit 9** –the PTT activated power supply 13.5Vdc amps relay switch is an abundant solid one and fast by **OMRON G5LE**, a 12Vdc SPDT (1 pole 10A) (data sheet in <http://www.omron.com>, under relay PCB power general types) for longer life.

It also available in ALLIED Catalog :

Mfr.'s Part #: G5LE-14-DC12  
Allied Stock #: 821-1038  
Manufacturer: OMRON ELECTRONICS INC.  
Description: Relay, PCB, Subminiature, SPDT, 10 Amps, 12 VDC, Sealed  
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Co-axial RF Power relays (for higher than 150 watts to 250 watts antenna A/B tx/rx selection option) one suitable of many available could be:

**Tohtsu®**

**Co-Axial Relays**

in RF PARTS Co catalog under Relay, Co-axial.

The SPST RF reed relay (max up to 100-150 watts CW) by WABASH, 1017-18-1,

is in Surplus Sale of Nebraska catalog at <http://www.surplussales.com/>. It was used to switch the output low pass filters in Rockwell-Collins KWM380, and it is much lower priced than the original Wabash SPDT version).

For pre-amplifiers:

2N5109 RF wideband transistor is available in RF PARTS Co (California) catalog at <http://www.rfparts.com/2n.html>. Motorola does not produce it anymore but other manufacturers do so you can find easily 2N5109 (with data sheet available to download) also in Jameco catalog at <http://www.jameco.com> (search for part number 2N5109):

Jameco #140388

Mfg Ref # 2N5109

### **Capacitors trimmers**

Capacitor trimmers used in the passband filters, if not available the Philips Teflon/film type, you can use ceramic cap. trimmers as those in Jameco catalog ([www.jameco.com](http://www.jameco.com), select components, capacitors, ceramic trimmers caps)

### **Pin diodes for variable attenuator**

Pin –diodes Agilent 5082-3081 are in ALLIED catalog:

Mfr.'s Part #: 5082-3081

Allied Stock #: 787-1225

Manufacturer: AGILENT TECHNOLOGIES

Description: Diode, Pin, 100V, Surface Mount

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and also in Newark catalog at <http://www.newark.com/>

See AGILENT (ex-HP) application note 1048 “A low-Cost Surface Mount Pin diode pi Attenuator” with schematics for a 3 diodes 5082-3081 and a discussion about an even more symmetrical configuration with 4 diodes with test report over the frequency range of 300 KHz to 3GHz. At 10 Mhz it is reported a two-tone third order intermodulation distortion input intercept point around +30dBm for attenuation setting from 10 to 20 dB, and even much better for lower attenuation levels.