

## 2 T830 VCO PCB

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**T830 VCO Parts List (IPN 220-01176-03)****How To Use This Parts List**

The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc.) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A letter in the variant column indicates that this is a variant component which is fitted only to the product type listed. Static sensitive devices are indicated by an (S) at the start of the description column.

The mechanical and miscellaneous section lists the variant and common parts in IPN order.

The Parts List Amendments box below lists component changes that took place after the parts list and diagrams in this section were compiled. These changes (e.g. value changes, added/deleted components, etc.) are listed by circuit reference in alphanumeric order and supersede the information given in the parts list or diagrams. Components without circuit references are listed in IPN order.

**Parts List Amendments**

#C4	Rx High (C):	changed from 15P (IPN 015-22150-01) to 18P (IPN 015-22180-01) to allow the VCO to be tuned at the top end of the frequency range (711267).
	Tx Low (B):	changed from 22P (IPN 015-22220-01) to 18P (IPN 015-22180-01) to improve VCO tuning range (720628).
#C5	Rx High (C):	changed from 18P (IPN 015-22180-01) to 22P (IPN 015-22220-01) to allow the VCO to be tuned at the top end of the frequency range (711267).
#C6	Rx low (D):	changed from 22P (IPN 015-22220-01) to 18P (IPN 015-22180-01) to improve loop voltage (710900).
	Tx High (A):	incorrectly listed as 22P (IPN 015-22220-01) - correct value is 18P (IPN 015-22180-01).
	Tx High (A):	changed from 18P (IPN 015-22180-01) to 15P (IPN 015-22150-01) to improve the loop voltage tuning range at the top of the band (710943/44).
C23	Changed 8P2 5% (IPN 015-21820-01) to 8P2 1% (IPN 015-21820-02) due to standardisation (780047/48/49/50).	

Ref	Var	IPN	Description	Ref	Var	IPN	Description																				
<table border="1"> <thead> <tr> <th>Variant Code</th> <th>Description</th> <th>T835 (MHz)</th> <th>T836/837 (MHz)</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Tx high</td> <td>-</td> <td>148 - 174</td> </tr> <tr> <td>B</td> <td>Tx low</td> <td>-</td> <td>136 - 156</td> </tr> <tr> <td>C</td> <td>Rx high</td> <td>169.4 - 195.4</td> <td></td> </tr> <tr> <td>D</td> <td>Rx low</td> <td>157.4 - 177.4</td> <td>-</td> </tr> </tbody> </table>				Variant Code	Description	T835 (MHz)	T836/837 (MHz)	A	Tx high	-	148 - 174	B	Tx low	-	136 - 156	C	Rx high	169.4 - 195.4		D	Rx low	157.4 - 177.4	-	R13		036-12220-00	RES M/F 0805 22E 5%
Variant Code	Description	T835 (MHz)	T836/837 (MHz)																								
A	Tx high	-	148 - 174																								
B	Tx low	-	136 - 156																								
C	Rx high	169.4 - 195.4																									
D	Rx low	157.4 - 177.4	-																								
				R14		036-12560-00	RES M/F 0805 56E 5%																				
				R15		036-12220-00	RES M/F 0805 22E 5%																				
				R16		036-13270-00	RES M/F 0805 270E 5%																				
				R17		036-13270-00	RES M/F 0805 270E 5%																				
				R18		036-12180-00	RES M/F 0805 18E 5%																				
				R19		036-14100-00	RES M/F 0805 1K 5%																				
				R20		036-14680-00	RES M/F 0805 6K8 5%																				
				R21		036-14100-00	RES M/F 0805 1K 5%																				
				R22		036-14220-00	RES M/F 0805 2K2 5%																				
				R23		036-12180-00	RES M/F 0805 18E 5%																				
				R24		036-12220-00	RES M/F 0805 22E 5%																				
				R25		036-13220-00	RES M/F 0805 220E 5%																				
C2		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
#C3	A	015-22180-01	CAP CER 0805 18P 5% NPO 50V																								
#C3	B	015-22180-01	CAP CER 0805 18P 5% NPO 50V																								
#C3	C	015-22100-01	CAP CER 0805 10P+-1/2P NPO 50V																								
#C3	D	015-22100-01	CAP CER 0805 10P+-1/2P NPO 50V																								
#C4	A	015-22220-01	CAP CER 0805 22P 5% NPO 50V																								
#C4	B	015-22220-01	CAP CER 0805 22P 5% NPO 50V																								
#C4	C	015-22180-01	CAP CER 0805 18P 5% NPO 50V																								
#C4	D	015-22150-01	CAP CER 0805 15P 5% NPO 50V																								
#C5	A	015-22220-01	CAP CER 0805 22P 5% NPO 50V																								
#C5	B	015-22220-01	CAP CER 0805 22P 5% NPO 50V																								
#C5	C	015-22220-01	CAP CER 0805 22P 5% NPO 50V																								
#C5	D	015-22180-01	CAP CER 0805 18P 5% NPO 50V																								
#C6	A	015-22220-01	CAP CER 0805 22P 5% NPO 50V																								
#C6	B	015-22180-01	CAP CER 0805 18P 5% NPO 50V																								
#C6	C	015-22150-01	CAP CER 0805 15P 5% NPO 50V																								
#C6	D	015-22220-01	CAP CER 0805 22P 5% NPO 50V																								
#C7	A	015-22270-01	CAP CER 0805 27P 5% NPO 50V																								
#C7	B	015-22330-01	CAP CER 0805 33P 5% NPO 50V																								
#C7	C	015-22270-01	CAP CER 0805 27P 5% NPO 50V																								
#C7	D	015-22330-01	CAP CER 0805 33P 5% NPO 50V																								
C8		015-23120-01	CAP CER 0805 120P 5% NPO 50V																								
C9		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
C10		015-21220-01	CAP CER 0805 2P2+-1/4P NPO 50V																								
C11		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
C12		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
C13		025-08100-02	CAP TANT BEAD 10M 10% 16V																								
C14		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
C15		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
C16		015-22560-01	CAP CER 0805 56P 5% NPO 50V																								
C17		015-22560-01	CAP CER 0805 56P 5% NPO 50V																								
C18		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
C19		015-05470-08	CAP CER 1206 47N 10% X7R 50V																								
C20		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
C21		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
C22		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
C23		015-21820-01	CAP CER 0805 8P2+-1/4P NPO 50V																								
C24		015-21680-01	CAP CER 0805 6P8+-1/4P NPO 50V																								
C25		015-23680-08	CAP CER 0805 680P 10% X7R 50V																								
#C26	A	036-10000-00	RES M/F 0805 ZERO OHM																								
#C26	B	036-10000-00	RES M/F 0805 ZERO OHM																								
#C26	C	036-10000-00	RES M/F 0805 ZERO OHM																								
#C26	D	036-10000-00	RES M/F 0805 ZERO OHM																								
CV1		028-02111-00	16PF TRM CAP PISTON PREC.																								
D1		001-00012-63	S) DIODE VARICAP BB809																								
D2		001-00012-63	S) DIODE VARICAP BB809																								
D3		001-00012-63	S) DIODE VARICAP BB809																								
D4		001-00012-63	S) DIODE VARICAP BB809																								
L1		056-00021-56	IND FXD 3.3UH AX 10X4.2 PHEN																								
L2		056-00021-60	IND FXD 330NH AX N/MAG 6.6*2.7																								
#L3	A	055-01004-00	COIL TROID 103NH 22P 9T T830TX																								
#L3	B	055-01000-00	COIL TOROID 110NH 22P 10T T830																								
#L3	C	055-01003-00	COIL TROID 91NH 22P 8T T830RX																								
#L3	D	055-01004-00	COIL TROID 103NH 22P 9T T830TX																								
L4		056-00021-52	IND FXD 820NH 10% NON MAGNETIC																								
L5		056-00021-56	IND FXD 3.3UH AX 10X4.2 PHEN																								
L6		052-08135-35	COIL A/W 3.5T/3.5MM HOR 0.8MM																								
L7		056-00021-56	IND FXD 3.3UH AX 10X4.2 PHEN																								
L8		052-08130-45	COIL A/W 4.5T/3.0MM HOR 0.8MM																								
Q1		000-10003-10	S) XSTR SMD BFFJ310 JFET UHF																								
Q2		000-10057-10	S) XSTR SMD BR571 NPN SOT23																								
Q3		000-10057-10	S) XSTR SMD BR571 NPN SOT23																								
Q4		000-10008-57	S) XSTR SMD BCW70 PNP SOT23 SS																								
Q5		000-00032-47	S) XSTR MRF559 NPN XPACK 0.5W																								
R1		036-12220-00	RES M/F 0805 22E 5%																								
R3		036-11470-00	RES M/F 0805 4E7 10%																								
#R5	A	036-13390-00	RES M/F 0805 390E 5%																								
#R5	B	036-13390-00	RES M/F 0805 390E 5%																								
#R5	C	036-13330-00	RES M/F 0805 330E 5%																								
#R5	D	036-13390-00	RES M/F 0805 390E 5%																								
R6		036-12560-00	RES M/F 0805 56E 5%																								
R7		036-14100-00	RES M/F 0805 1K 5%																								
R8		036-12560-00	RES M/F 0805 56E 5%																								
R9		036-14100-00	RES M/F 0805 1K 5%																								
R10		036-12100-00	RES M/F 0805 10E 5%																								
R11		036-14270-00	RES M/F 0805 2K7 5%																								
R12		036-13180-00	RES M/F 0805 180E 5%																								

**T830 VCO Mechanical & Miscellaneous Parts (220-01176-03)**

<b>IPN</b>	<b>Legend</b>	<b>Description</b>
220-01176-03		PCB T83X VCO
240-00025-36		PLUG 32WAY 1ROW PC MTG HARWIN
345-00040-10		SCRW M3X6MM P/POZ ST BZ
345-00060-08		SCRW M5 X 16 CH SLOT PLASTIC
350-00016-42		SPACER 5MM HI 8MM ST 2.5MM HO
352-00010-14		NUT M5 HEX PLASTIC T800 TOROID
353-00010-10		WSHR M3 FLAT 7MMX0.6MM ST BZ
353-00010-13		WSHR M3 S/PROOF INT BZ
353-00010-41		WSHR M6 NYLON BULTE LOCK

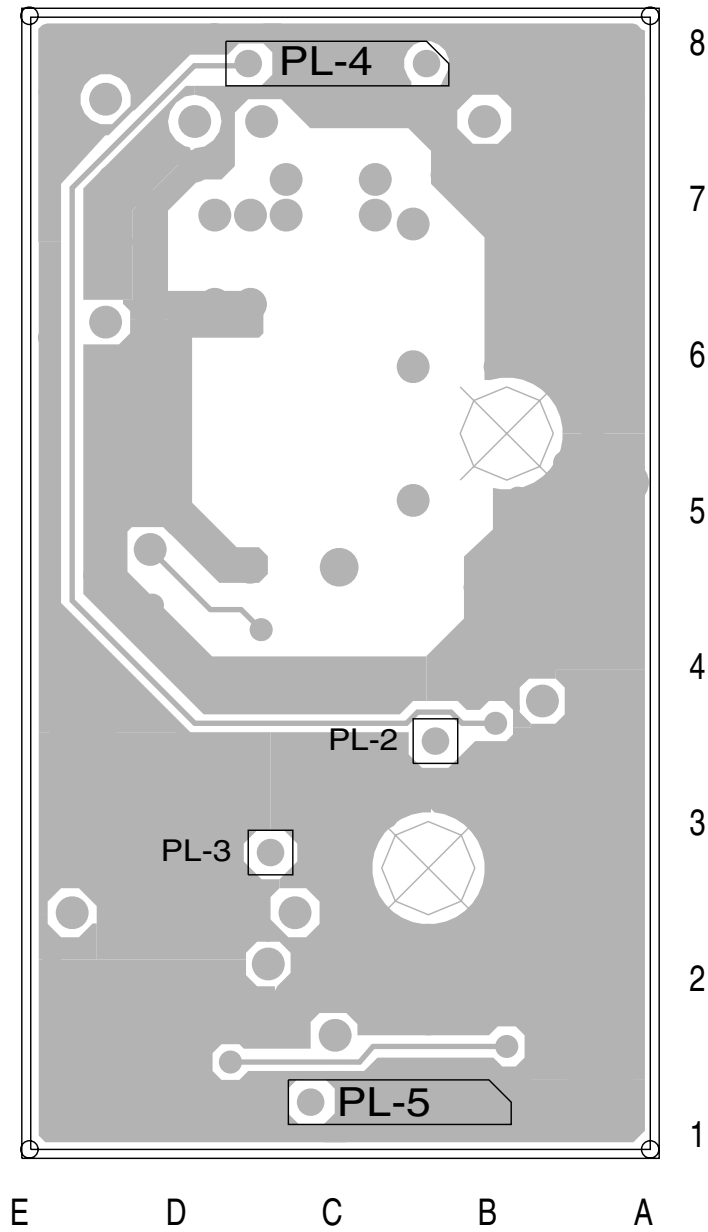
## T830 VCO Grid Reference Index (IPN 220-01176-03)

### How To Use This Grid Reference Index

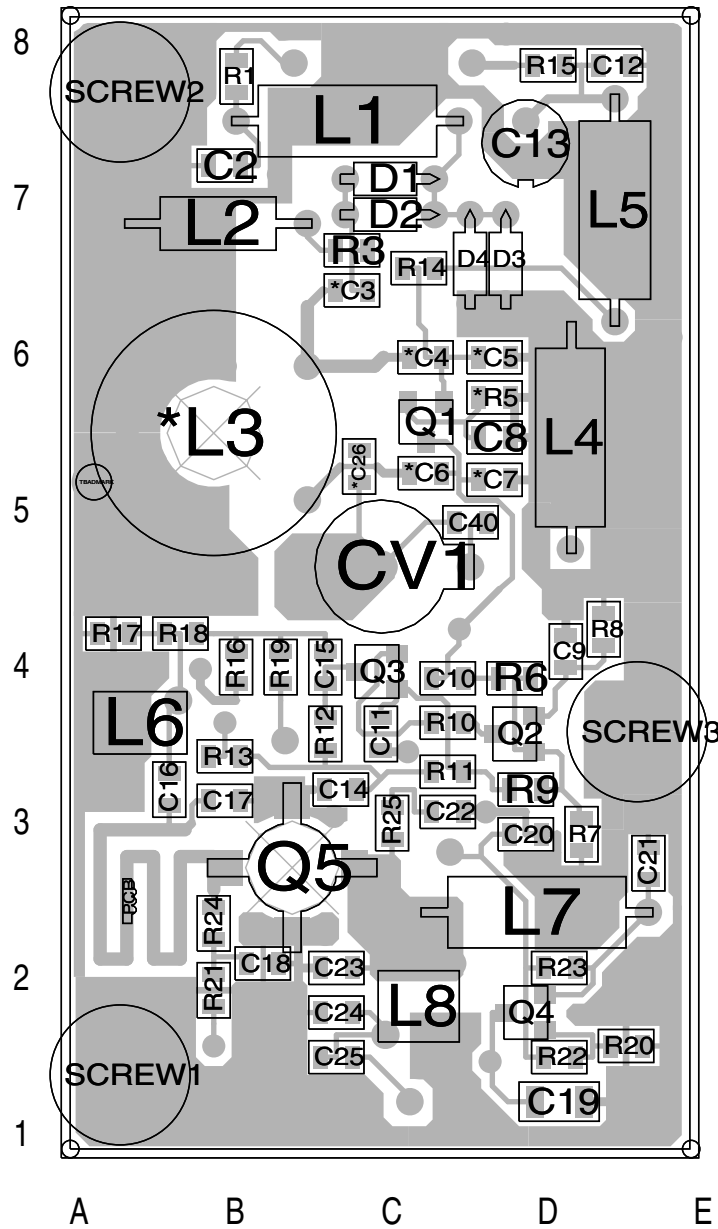
The first digit in the PCB layout reference is a "1" or "2", indicating the top or bottom side layout respectively, and the last two characters give the location of the component on that diagram.

The first digit in the circuit diagram reference is the sheet number, and the last two characters give the location of the component on that sheet.

<u>Device</u>	<u>PCB</u>	<u>Circuit</u>	<u>Device</u>	<u>PCB</u>	<u>Circuit</u>	<u>Device</u>	<u>PCB</u>	<u>Circuit</u>	<u>Device</u>	<u>PCB</u>	<u>Circuit</u>
C2	1:B7	1-B3	R8	1:D4	1-G3						
#C3	1:C6	1-D4	R9	1:D3	1-G4						
#C4	1:C6	1-D4	R10	1:C4	1-G4						
#C5	1:D6	1-D3	R11	1:C3	1-G5						
#C6	1:C5	1-E4	R12	1:C4	1-G5						
#C7	1:D5	1-E3	R13	1:B3	1-G6						
C8	1:D6	1-F3	R14	1:C7	1-F5						
C9	1:D4	1-H3	R15	1:D8	1-G6						
C10	1:C4	1-F3	R16	1:B4	1-H4						
C11	1:C4	1-G4	R17	1:A4	1-H4						
C12	1:D8	1-F6	R18	1:B4	1-H5						
C13	1:D7	1-G6	R19	1:B4	1-H6						
C14	1:C3	1-G5	R20	1:E2	1-J6						
C15	1:C4	1-H5	R21	1:B2	1-K6						
C16	1:B3	1-J5	R22	1:D2	1-J7						
C17	1:B3	1-J4	R23	1:D2	1-K7						
C18	1:B2	1-J5	R24	1:B2	1-K5						
C19	1:D1	1-J6	R25	1:C3	1-K5						
C20	1:D3	1-J7									
C21	1:E3	1-K6									
C22	1:C3	1-K5									
C23	1:C2	1-K4									
C24	1:C2	1-L4									
C25	1:C2	1-L5									
#C26	1:C5	1-D4									
C40	1:D5	1-D3									
CV1	1:C5	1-D3									
D1	1:C7	1-B4									
D2	1:C7	1-C4									
D3	1:D7	1-B3									
D4	1:D7	1-C3									
L1	1:C8	1-B3									
L2	1:B7	1-C3									
#L3	1:B6	1-D4									
L4	1:D6	1-E3									
L5	1:D7	1-F6									
L6	1:A4	1-J4									
L7	1:D2	1-K6									
L8	1:C2	1-L5									
PL-2	2:B4	2-F3									
PL-3	2:C3	2-G3									
PL-4	2:C8	2-F4									
PL-5	2:C1	2-G4									
Q1	1:C6	1-F3									
Q2	1:D4	1-G3									
Q3	1:C4	1-G4									
Q4	1:D2	1-K7									
Q5	1:B3	1-K5									
R1	1:B8	1-B3									
R3	1:C7	1-C4									
#R5	1:D6	1-F3									
R6	1:D4	1-G3									
R7	1:D3	1-G3									



T830 VCO PCB (IPN 220-01176-03) - Bottom Side



T830 VCO PCB (IPN 220-01176-03) - Top Side