

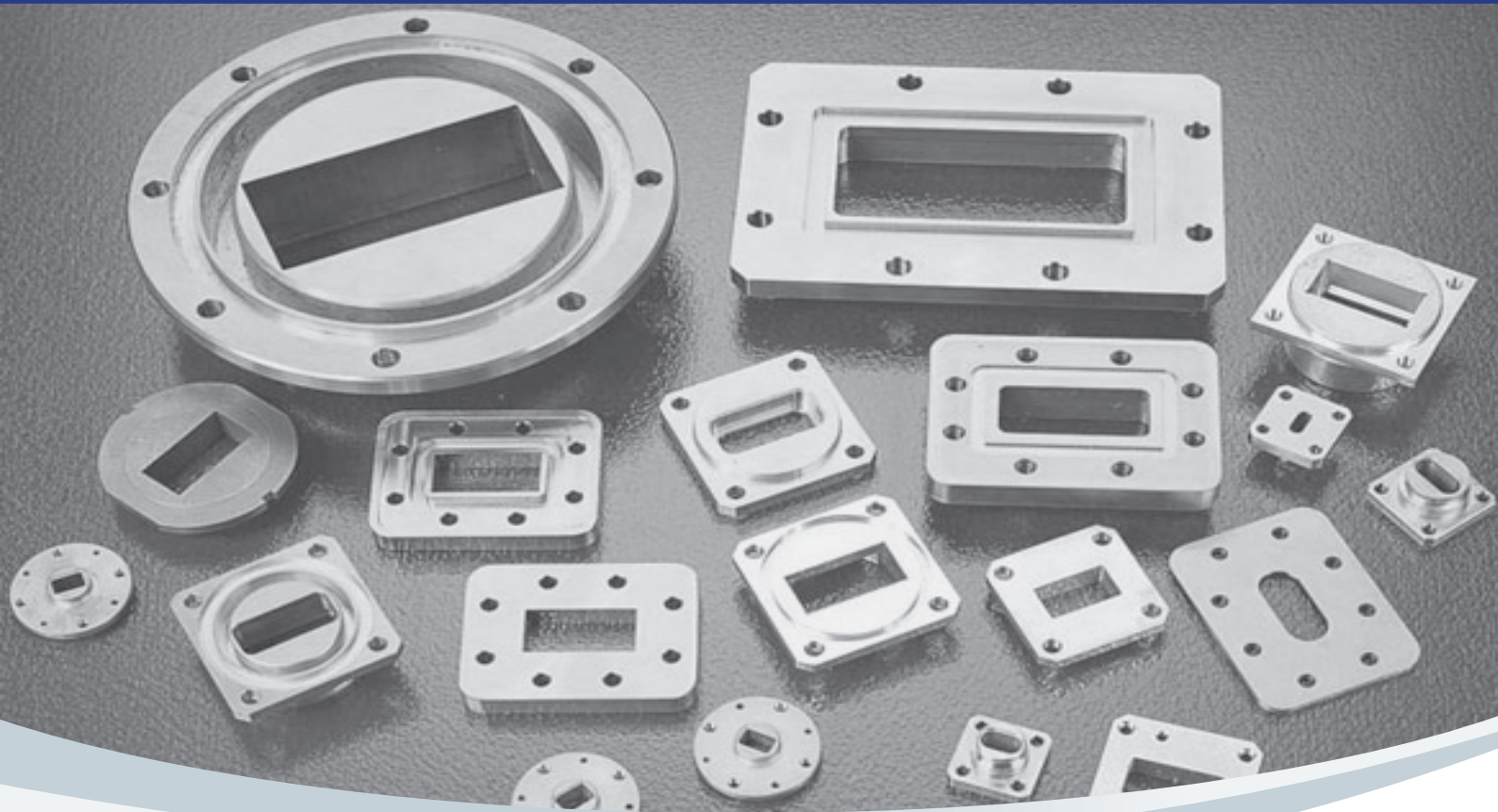


The Waveguide Solution  
a global **invacom** company

## Waveguide Flanges

Rectangular Flanges / **F SERIES**

Double Ridge Flanges / **F-D SERIES**

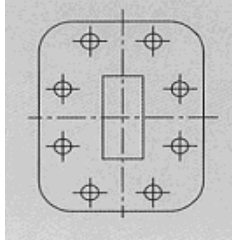
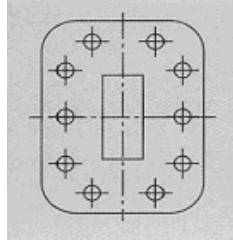
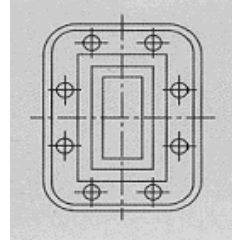
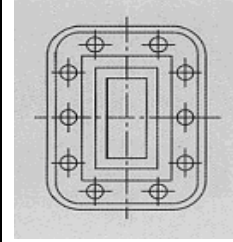
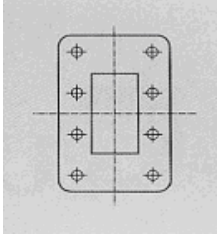




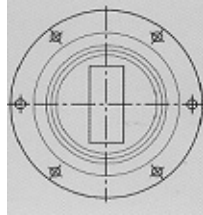

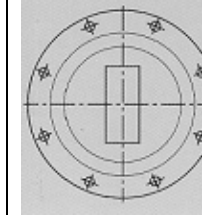
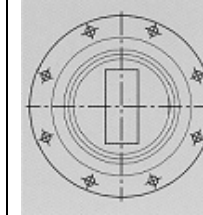
**TWS specialise in the manufacture of waveguides, waveguide components and assemblies.**

The range of standard components is offered with a range of waveguide flanges based on the major international flange interface specifications. Standard flanges are available in Brass or Aluminium, with Copper Flanges available on request. Certain designs of flanges are available from stock to provide a minimum delivery lead-time on preferred waveguide

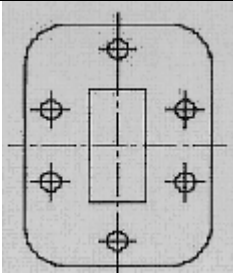
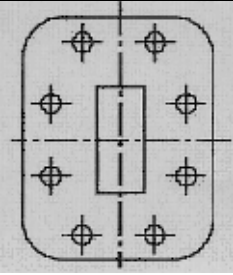
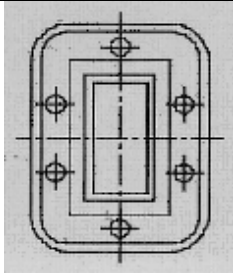
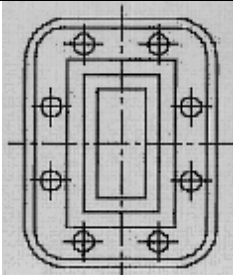
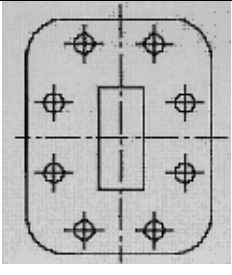
sizes. All flanges are manufactured to the highest quality standards. The wide variety of flanges detailed in this catalogue are available as standard on the majority of TWS products although certain designs are not suitable for all designs. TWS offer technical support at the design stage to ensure the most suitable flange is chosen for every application.

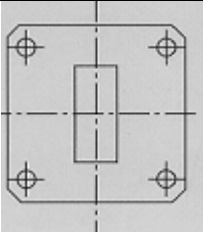
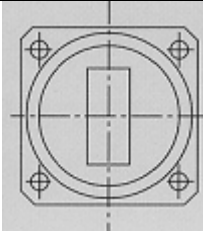
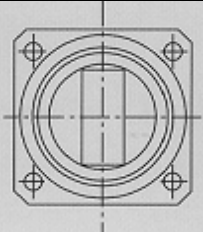
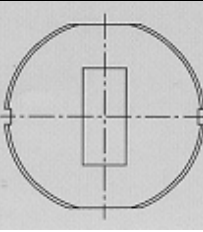
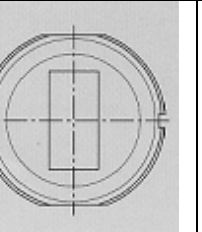
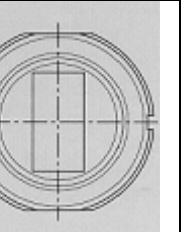
The Waveguide Solution facility is approved to ISO9001:2000.

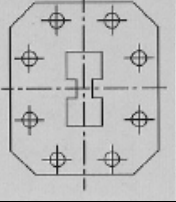
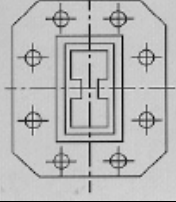
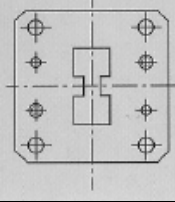
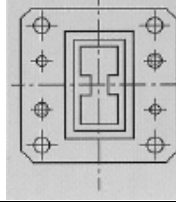
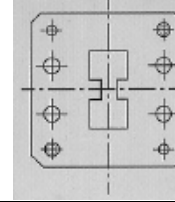
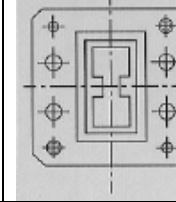
Materials  Aluminium (Shown in blue type) Brass (Shown in black type.)										
	<b>RECTANGULAR FLANGE PLAIN 8 HOLE</b>		<b>RECTANGULAR FLANGE PLAIN 10 HOLE</b>		<b>RECTANGULAR FLANGE SEAL GROOVE 8 HOLE</b>		<b>RECTANGULAR FLANGE SEAL GROOVE 10 HOLE</b>		<b>RECTANGULAR FLANGE MINIATURE 8 HOLE</b>	
Codes UK RCSC BS & IEC USA EIA USA JAN0	Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No
WG 6 R14 WR650 RG 69/U			UDR 14 CPR 650F UG 1714/U UG 1720/U	F06-012 F06-122 F06-542 F06-544			PDR 14 CPR 650G UG 417B/U UG 1362/U UG 418B/U UG 1343/U	F06-031 F06-021 F06-652 F06-582 F06-654 F06-584		
WG 8 R22 WR430 RG104/U			UDR 22 CPR 430F UG 1716/U UG1711/U	F 08-012 F 08-122 F 08-542 F 08-544			PDR 22 CPR 430G UG435B/U UG 1344/U UG437B/U UG1345/U	F08-031 F08-021 F08-652 F08-582 F08-654 F08-584		
WG 9A R26 WR340 RG112/U			UDR 26 CPR 340F UG 1712/U UG 1713/U	F 9A-012 F 9A-122 F 9A-542 F 9A-544			PDR 26 CPR 340G UG553A/U UG 1346/U UG554A/U UG 1347/U	F9A-031 F9A-021 F9A-652 F9A-582 F9A-654 F9A-584		
WG 10 R32 WR284 RG48/U			UDR 32 CPR 284F UG 1724/U UG 1725/U	F10-012 F10-112 F10-542 F10-544			PDR 32 CPR 284G UG 1348/U UG 1349/U	F10-031 F10-021 F10-582 F10-584		
WG 11A R40 WR229			UDR 40 CPR 229F UG 1726/U UG 1727/U	F11A-012 F11A-122 F11A-542 F11A-544			PDR 40 CPR 229G UG 1350/U UG 1351/U	F11A-031 F11A-021 F11A-582 F11A-584	CMR 229 UER 40	F11-202 F11-112
WG 12 R48 WR187 RG49/U	CPR 187F UDR 48 UG 1475/U UG 1728/U UG 1480/U UG 1729/U	F12-122 F12-012 F12-572 F12-522 F12-574 F12-554			PDR 48 UG 1352/U UG 1353/U CPR 187G	F12-031 F12-592 F12-594 F12-021			CMR 178 UER 40	F12-202 F12-112
WG 13 R58 WR159	CPR 159F UDR 58 UG 1730/U UG 1731/U	F12-122 F13-012 F13-552 F13-554			CPR 159G PDR 58 UG 1354/U UG 1355/U	F13-021 F13-031 F13-592 F13-594			CMR 159 UER 58	F13-202 F13-112
WG 14 R70 WR137 RG50/U	CPR 137F UDR 70 UG 1476/U UG 1732/U UG 1481/U UG 1733/U	F14-122 F14-012 F14-572 F14-552 F14-574 F14-554			CPR 137G PDR 70 UG 1356/U UG 1357/U	F14-021 F14-031 F14-592 F14-594			CMR 137 UER 70	F14-202 F14-112

											
ROUND FLANGE PLAIN 6 HOLE		ROUND FLANGE SEAL GROOVE 6 HOLE		ROUND FLANGE CHOKE 6 HOLE		ROUND FLANGE PLAIN 8 HOLE		ROUND FLANGE SEAL GROOVE 8 HOLE		ROUND FLANGE CHOKE 8 HOLE	
Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No
083-1560	F10-052			083-1558	F10-071	UAR 32 UG 53/U UG 584/U	F10-332 F10-082 F10-084	PAR 32 083-0010	F10-362 F10-042	CAR 32 UG 54B/U 083-0009 UG 585A-U	F10-151 F10-091 F10-061 F10-093
						See note UAR 48 UR 149A/U UG 407/U	See note F12-342 F12-162 F12-164	See note PAR 48 083-0042	See note F12-142 F12-042	See note CAR 48 UG 148C/U 083-0041 UG406B/U	See note F12-381 F12-181 F12-071 F12-183
UAR 58	F13-352	PAR 58	F13-372	CAR 58	F13-391						
UAR 70 UG 344/U UG 441/U	F14-352 F14-082 F14-084	PAR 70 083-0038 083-0132	F14-372 F14-042 F14-044	CAR 70 UG343B/U UG440B/U 083-0037 083-0131	F14-391 F14-281 F14-283 F14-071 F14-073						

Note: Wg12 the hole pattern is in line with the waveguide axes

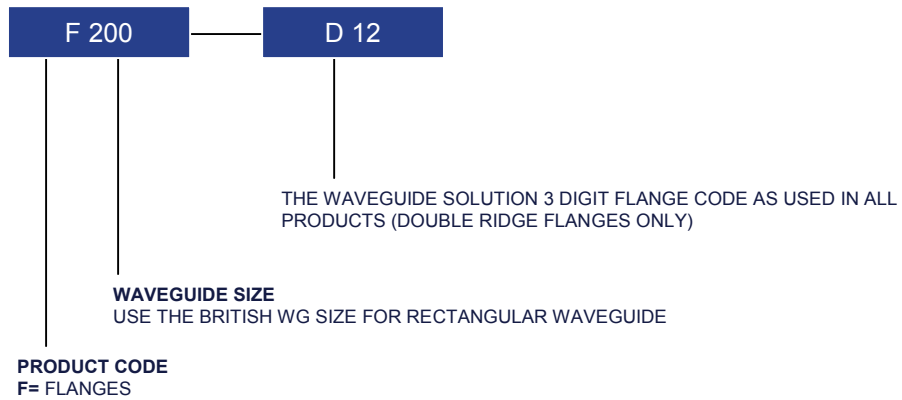
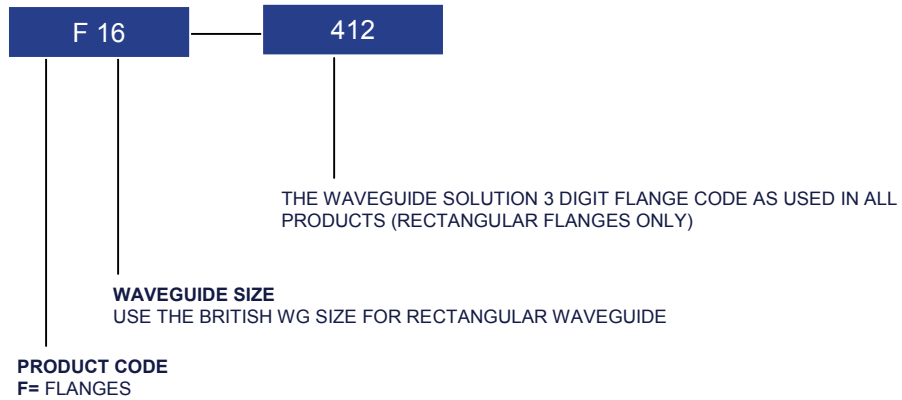
<b>Materials</b>  Aluminium (Shown in blue type) Brass (Shown in black type )										
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WG 15 R84 WR112 RG 51/U			CPR 112 F UDR 84 UG 1477/U UG 1734/U UG 1482/U UG 1735/U	F15-122 F15-012 F15-572 F15-552 F15-574 F15-554			CPR 112G PDR 84 UG 1358/U UG 1359/U	F15-021 F15-031 F15-592 F15-594	CMR 112 UER 84	F15-202 F15-112
WG 16 R100 WR90 RG52/U			CPR 90F UDR 100 UG 1478/U UF 1483/U UG 1737/U UG 1736/U	F16-122 F16-012 F16-572 F16-574 F16-554 F16-552			CPR 90G PDR 100 UG 1360/U UG 1361/U	F16-021 F16-031 F16-592 F16-594	CMR 90 UER 100	F16-202 F16-112
WG 17 R120 WR75	UDR 120	F17-012			PDR 120	F17-031				
WG 18 R140 WR62 RG91/U	UDR 140	F18-012			PDR 140	F18-031				
WG 19 R180 WR51	UDR 180	F19-012			PDR 180	F19-031				
WG 20 R220 WR42 RG53/U	UDR 220	F20-012			PDR 220	F20-031				
WG 21 R260 WR34	UDR 260	F21-021			PDR 260	F21-031				
WG 22 R320 WR28 RG96/U	UDR 320	F22-012			PDR 320	F22-031				

											
SQUARE FLANGE PLAIN		SQUARE FLANGE SEAL GROOVE		SQUARE FLANGE CHOKe		ROUND FLANGE PLAIN COUPLING TYPE		ROUND FLANGE SEAL GROOVE COUPLING TYPE		ROUND FLANGE CHOKe COUPLING TYPE	
Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No	Int Spec	TWS No
UBR 84 UG 51/U UG 138/U 54-005 54-001	F15-402 F15-442 F15-444 F15-462 F15-682	PBR 84 083-0034 011-9112	F15-412 F15-432 F15-434	59D-015 CBR 84 UG 52B/U 083-0033 UG 137B/U 083-0134	F15-451 F15-421 F15-481 F15-521 F15-453 F15-523			011-9660 012-0892	F15-222 F15-474	011-9661 012-0893	F15-231 F15-533
UBR 100 UG 39/U UG 135/U 53C-009 53C-010	F16-402 F16-442 F16-444 F16-662 F16-664	PBR 100 083-0052 083-0148	F16-412 F16-432 F16-434	CBR 100 UG 40B/U 083-0051 083-1611 UG 136B/U 011-9114 012-0891 59D-014 59D-013	F16-421 F16-481 F16-521 F16-511 F16-483 F16-513 F16-523 F16-453 F16-451	083-0004	F16-252	083-0151	F16-474	083-0003 083-0150	F16-231 F16-533
UBR 120 53C-007 53C-013 53C-014	F17-402 F17-442 F17-662 F17-664	PBR 120 014-1436	F17-412 F17-432	CBR 120 014-1437 59D-010	F17-421 F17-521 F17-481						
UBR 140 UG 419/U UG 1655/U 53C-011 53C-012 53C-017	F18-402 F18-442 F18-444 F18-662 F18-664 F18-672	PBR 140 083-0030	F18-412 F18-432	CBR 140 UG 541A/U 083-0029 UG 1666/U	F18-421 F18-481 F18-521 F18-483			011-9662	F18-222	011-9663	F18-231
UBR 180	F19-402	PBR 180	F19-412	CBR 180	F19-421			011-9664	F19-222	011-9665	F19-231
UBR 220 UG 595/U UG 597/U	F20-402 F20-442 F20-444	PBR 220 011-9658	F20-412 F20-432	CBR 220 UG596A/U 011-9659 UG598A/U	F20-421 F20-481 F20-521 F20-483			PCR 220 011-9666	F20-492 F20-222	011-9667 CCR 220	F20-231 F20-501
UBR 260 UG 1530/U	F21-402 F21-442	PBR 260	F21-412	CBR 260	F21-421			PCR 260	F21-492		
UBR 320 UG 599/U 012-4834	F22-402 F22-442 F22-432	PBR 320	F22-412	CBR 320 UG600A/U 012-4835 59D012	F22-421 F22-481 F22-521 F22-451	083-0019	F22-252	PCR 320 083-0018	F22-492 F22-222		

Materials Aluminium (Shown in blue type) Brass (Shown in black)												
	DOUBLE RIDGE PLAIN		DOUBLE RIDGE SEAL		DOUBLE RIDGE PLAIN		DOUBLE RIDGE SEAL		DOUBLE RIDGE PLAIN		DOUBLE RIDGE SEAL	
	Mil Spec 39000/ /	TWS No	Mil Spec 39000/ /	TWS No	Mil Spec 39000/ /	TWS No	Mil Spec 39000/ /	TWS No	Mil Spec 39000/ /	TWS No	Mil Spec 39000 / /	TWS No
WRD 200 D24	3B-024 3B-025 3B-026 3B-027 3B-028 3B-029 3B-010	F200-D01 F200-D02 F200-D03 F200-D04 F200-D05 F200-D06 F350-D13	3B-048 3B-049 3B-050 3B-051 3B-052 3B-053	F200-D07 F200-D08 F200-D09 F200-D10 F200-D11 F200-D12								
WRD 350 D24	3B-030 3B-031 3B-032 3B-033 3B-034 3B-035	F350-D01 F350-D02 F350-D03 F350-D04 F350-D05 F350-D06	3B-054 3B-055 3B-056 3B-057 3B-058 3B-059	F350-D07 F350-D08 F350-D09 F350-D10 F350-D11 F350-D12								
WRD 475 D24	3B-013 3B-036 3B-037 3B-038 3B-039 3B-040 3B-041	F475-D13 F475-D01 F475-D02 F475-D03 F475-D04 F475-D05 F475-D06	3B-060 3B-061 3B-062 3B-063 3B-064 3B-065	F475-D07 F475-D08 F475-D09 F475-D10 F475-D11 F475-D12								
WRD 580 D28					F580-D01 F580-D02 F580-D03 F580-D04 F580-D05 F580-D06		F580-D07 F580-D08 F580-D09 F580-D10 F580-D11 F580-D12					
WRD 650 D28									F650-D01 F650-D02 F650-D03 F650-D04 F650-D05 F650-D06		F650-D07 F650-D08 F650-D09 F650-D10 F650-D11 F650-D12	
WRD 750 D24					3B-072 3B-073 3B-074 3B-075 3B-076 3B-077	F750-D01 F750-D02 F750-D03 F750-D04 F750-D05 F750-D06	3B-078 3B-079 3B-080 3B-081 3B-082 3B-083	F750-D07 F750-D08 F750-D09 F750-D10 F750-D11 F750-D12				
WRD 180 C24					3B-084 3B-085 3B-086 3B-087 3B-088 3B-089	F180-D01 F180-D02 F180-D03 F180-D04 F180-D05 F180-D06						
WRD 110 C24						F110-D01 F110-D02 F110-D03 F110-D04 F110-D05 F110-D06						

All D01, D02, D07 & D08 Flanges have alternate threaded / clearance bolt holes • All D03, D04, D09 & D10 Flanges have threaded bolt holes. • All D05, D06, D11 & D12 Flanges have clearance bolt holes.

## Ordering Information



### Notes:

- 1) Flange material should match the material of the chosen Waveguide (i.e. aluminium flange for aluminium Waveguide)
- 2) UER standard miniature flanges are not available with Flexible Waveguides.



**The Waveguide Solution**  
a global **invacom** company

**The Waveguide Solution Limited**

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[www.waveguidesolution.co.uk](http://www.waveguidesolution.co.uk)

Specifications shown on this document are offered as a guide only. Components may be modified to suit the mechanical or electrical parameters requested, or may be optimized to suit the operating frequency range. Frequency range of operation shall be advised when ordering.

Information provided in this brochure is for reference only. Dimensions or specifications are typical values. All designs, specifications and availabilities of products and services presented in this document may be subject to change without notice. For confirmation of details please consult your agent or manufacturer. Issue 1.0b