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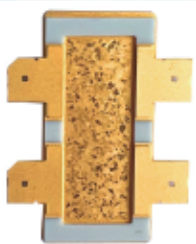
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RF Power Transistor Packages

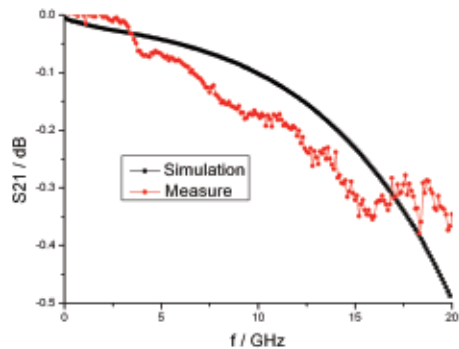
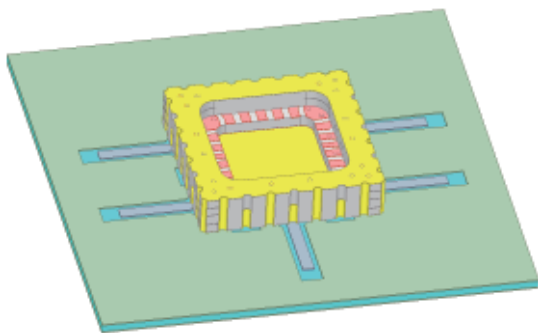
Packages for RF power transistors, including Si-LDMOS\VDMOS, GaAs-FET\HEMT and wideband-gap semiconductor FET/HEMT, are available based on our low-electrical-resistance ceramic metallization and high-thermal-conductivity heat-sink technologies. Excellent microwave and heat dissipation performance is guaranteed by multi-physics coupling simulation and S-parameters measurement.



Package P/N	Core Dimensions (mm)						NXP Type_ NI-XXX Interchange
	Length_ Flange U1	Width_ Flange U2	Length_ CeraFrame D1	Width_ CeraFrame E1	Length_ Cavity N1	Width_ Cavity N2	
JY04F032	41.15	10.16	31.24	10.16	27.94	6.10	1230-4H
JY04F028	20.57	9.78	19.81	9.40	16.51	6.10	780S-4L
JY04F025	20.57	9.78	19.81	9.40	16.51	6.10	780S-4L
JY04F152	15.30	5.50	14.90	5.30	12.50	2.80	N/A
JY04F153	15.30	5.50	14.90	5.30	12.50	2.80	N/A
JY02F051	9.78	9.78	10.16	10.16	8.65	7.20	400S-2L
JY02F052	20.32	5.84	9.20	5.84	6.60	2.80	360-2L
JY04F587	28.92	5.84	16.50	4.06	13.21	2.79	650-4L
JY02F367	20.32	5.84	9.20	5.84	6.60	2.80	360-2L
JY02F272	13.96	4.06	5.08	4.06	3.05	2.03	200-2L
JY02F780	34.04	9.78	21.84	9.40	19.20	6.10	780-2L
JY02F072	4.70	3.68	5.08	4.06	3.05	2.03	200S-2L
JY04F784	20.57	9.78	19.81	9.40	16.51	6.10	780S-4L
JY06F786	20.57	9.78	19.81	9.40	16.51	6.10	780S-4L
JY02F223	34.04	13.72	22.35	13.11	19.29	9.91	880S-2L
JY04F026	20.57	9.78	19.81	9.40	16.51	6.10	780S-4L
JY04F021	34.04	9.78	19.81	9.40	16.51	6.10	780-4L
JY04F022	34.04	9.78	19.81	9.40	16.51	6.10	780-4L
JY06F601	20.57	9.78	19.81	9.40	16.51	6.10	780S-4L2L
JY06F602	20.57	9.78	19.81	9.40	16.51	6.10	780S-4L2L
JY04F607	20.57	9.78	19.81	9.40	16.51	6.10	780S-2L2L
JY04F332	32.26	10.16	31.24	10.16	27.94	6.10	1230S-4H
JY04F032	41.15	10.16	31.24	10.16	27.94	6.10	1230-4H

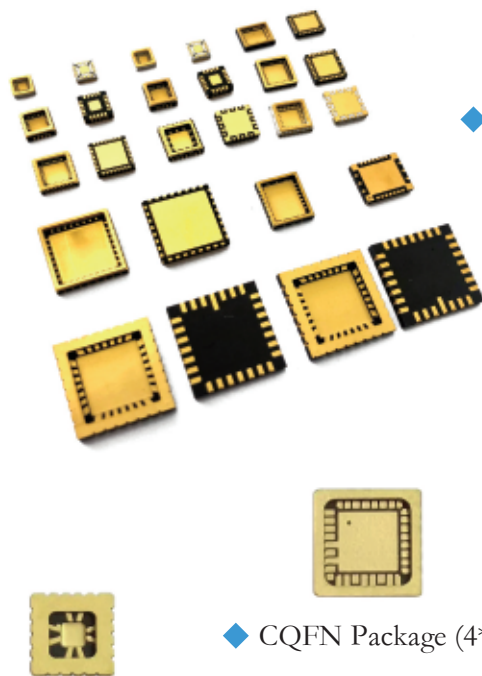
Ceramic CQFN Packages for MMICs

Ceramic CQFN packages adopt vertical signal transmit structure for control and RF signals from DC to 40GHz. The typical outer I/O pitch covers 0.65mm, 0.55mm and so on. Metalized grounding or metal heat-sink grounding is optional for different thermal dissipation purposes. Various sealing methods, such as parallel seam sealing (PSS), alloy melting sealing and so on, are available. The ceramic CQFN packages are characteristic of high integration, light weight, outstanding performance at high frequency, and etc.



◆ RF simulation VS measurement results at high frequency of packages

- ◆ Test card material: ROGERS 4003
- ◆ Probe: 450um GSG



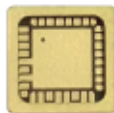
◆ Collection of CQFN Packages for MMICs



◆ CQFN Package (9*9)



◆ CQFN Package (7*7)



◆ CQFN Package (4*4)



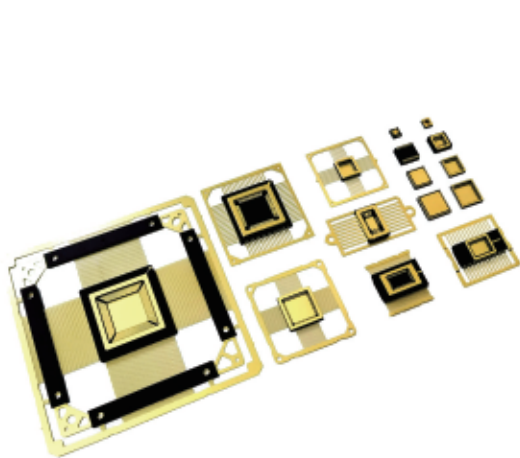
◆ CQFN Package (3*3)

• Parameters of Typical CQFN (Unit: mm)

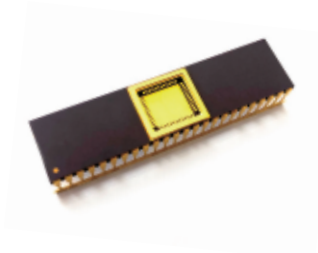
Package P/N	Outer I/O Count	Overall Dimension	Die Cavity Dimension	Layer thickness			Total thickness	Heat Sink	Sealing Method	Frequency
				1st	2nd	3rd				
CQFN08-2	8	3.4*3.4	1.0*1.0	0.25	0.25	0.5	1.0	YES	Au-Sn	DC-8
CQFN08-3	8	3.4*3.4	1.3*1.3	0.25	0.25	0.5	1.0	YES	Au-Sn	DC-8
CQFN19-3T	19	4*4	1.7*1.7	0.25	0.25	0.45	1.35	YES	Au-Sn/PSS	DC-30
CQFN19-2	19	4*4	1.7*1.7	0.35	0.2	0.5	1.45	NO	PSS	DC-30
CQFN16-4	16	4*4	2.2*2.2	0.4	0.4	0.4	1.2	NO	Au-Sn	DC-3
JC24F007	24	4*4	2*2	0.25	0.5	0.35	1.35	YES	Au-Sn	DC-4
JC24F010	24	4*4	2*2	0.25	0.5	0.35	1.35	YES	PSS	DC-4
JC24F001	24	4*4	2*2	0.25	0.25	0.5	1.25	NO	PSS	DC-4
CQFN20-12	20	4*4	2*2	0.25	0.25	0.4	1.3	NO	PSS	DC-7
CQFN14-6	14	5.05*5.05	2.7*2.7	0.25	0.3	0.5	1.45	YES	PSS	DC-30
CQFN14-2	14	5*5	2.7*2.7	0.3	0.2	0.5	1.4	NO	PSS	DC-30
CQFN32-3	32	5*5	3.3*3.3	0.4	0.25	0.5	1.05	NO	Au-Sn	DC-5
JC12F003	12	5.08*5.08	2.78*2.78	0.25	0.25	0.55	1.30	NO	Au-Sn/PSS	DC-8
JC32F002	32	5*5	3*3	0.25	0.25	0.5	1.25	NO	PSS	DC-4
CQFN36-4	36	6.5*6.5	4.2*4.2	0.3	0	0.4	1.10	NO	PSS	DC-8
CQFN26-10T	26	7*7	4.65*4.65	0.25	0.3	0.4	1.50	YES	Au-Sn/PSS	DC-30
CQFN26-9	26	7*7	4.7*4.7	0.3	0.2	0.3	1.45	NO	PSS	DC-30
CQFN48-1	48	7*7	4.8*4.8	0.25	0.5	0.45	1.2	YES	Au-Sn	DC-6
JC48F002c	48	7*7	4.8*4.8	0.25	0.25	0.5	1.25	NO	PSS	DC-5
JC48F011A	48	7*7	4.9*4.9	0.25	0.5	0.45	1.45	YES	PSS	DC-4
CQFN48-5	48	8.5*8.5	6.2*6.2	0.5	0	0.4	1.30	NO	PSS	DC-5
CQFN26-8	26	9.3*9.3	7*7	0.3	0.25	0.5	1.45	NO	PSS	DC-30
JC64F001	64	9*9	7*7	0.25	0.5	0.35	1.35	YES	PSS	DC-4
CQFN68-1	68	9*9	6.5*6.5	0.25	0.5	0.5	1.25	YES	Au-Sn	DC-5
JC32F008	32	9*9	7*7	0.25	0.5	0.5	1.8	YES	Au-Sn	DC-4
JC80F001	80	11*11	9*9	0.25	0.5	0.35	1.35	YES	Au-Sn	DC-5

Ceramic Packages for Integrated Circuits and Optical Couplers

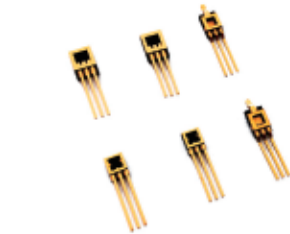
Ceramic packages for integrated circuits and optical couplers cover various package forms, including CDIP, CQFP, CLCC, CSOP and CFP, which are widely applied to logic IC, MEMS, microprocessor, signal processor, FPGA and so on.



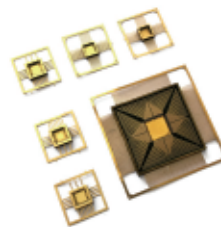
◆ Collection of Packages for Integrated Circuits and Optical Couplers



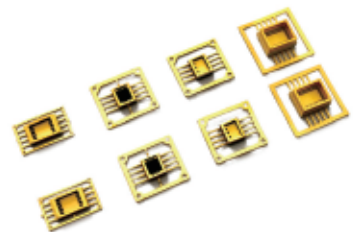
◆ CDIP Package



◆ CFP Package



◆ CQFP Package



◆ CSOP Package

• Parameters of Typical CDIP (Unit: mm)

Package P/N	Outer I/O Count	Outer I/O Pitch	Overall Dimension			Die Cavity Dimension		Sealing method	Heat Sink
			Length	Width	Height	Length	Width		
CDIP08-5	8	2.54	13.20	7.40	5.50	9.10	3.90	PSS	NO
CDIP08-6	8	2.54	9.70	7.40	3.70	7.70	5.40	PSS	NO
CDIP08-8	8	2.54	10.08	7.37	2.10	5.59	4.42	Au-Sn	NO
CDIP24-6	24	2.54	30.16	15.50	2.65	6.40	6.40	PSS/Au-Sn	NO
CDIP24-7	24	2.54	30.22	15.00	2.9	10.00	8.00	PSS/Au-Sn	NO
CDIP28-8	28	2.54	36.80	22.73	5.00	34.30	18.50	PSS/Au-Sn	NO
CDIP32-1	32	2.54	43.84	27.69	4.60	41.20	21.84	PSS/Au-Sn	NO
CDIP40-1	40	2.40	53.20	27.70	5.00	49.50	22.10	PSS/Au-Sn	NO
CDIP48-5	48	2.54	60.96	15.61	2.16	6.35	6.35	PSS/Au-Sn	NO

• Parameters of Typical CQFP (Unit: mm)

Package P/N	Outer I/O Count	Outer I/O Pitch	Overall Dimension			Die Cavity Dimension		Sealing method	Heat Sink
			Length	Width	Height	Length	Width		
CQFP24-8	24	1.27	10.16	10.16	1.95	5.20	5.20	PSS	NO
CQFP28-4	28	0.80	7.00	7.00	2.00	4.50	4.50	PSS	YES
CQFP48-5	48	1.00	14.22	14.22	2.80	6.00	6.00	Au-Sn	NO
CQFP48-6	48	0.50	8.00	8.00	1.38	4.70	4.70	Au-Sn	NO
CQFP48-7	48	0.50	7.00	7.00	1.80	4.50	4.50	Au-Sn	NO
CQFP64-5	64	0.80	14.60	14.60	2.85	8.20	8.20	PSS/Au-Sn	YES
CQFP64-6	64	0.50	11.20	11.20	1.90	7.80	7.80	Au-Sn	NO
CQFP64-7	64	1.00	18.46	18.46	2.05	9.30	9.30	PSS/Au-Sn	NO
CQFP100-1	100	0.50	14.00	14.00	2.60	7.80	7.80	PSS/Au-Sn	NO
CQFP140-1	140	0.50	20.00	20.00	4.30	15.00	15.00	PSS/Au-Sn	NO
CQFP176-1	176	0.50	24.00	24.00	2.00	10.50	10.50	Au-Sn	NO

• Parameters of Typical CLCC (Unit: mm)

Package P/N	Outer I/O Count	Outer I/O Pitch	Overall Dimension			Die Cavity Dimension		Sealing method
			Length	Width	Height	Length	Width	
CLCC3	3	1.90	4.00	3.20	1.40	2.00	1.50	Au-Sn
CLCC06-1	6	2.54	8.40	7.40	2.80	6.60	5.40	PSS/Au-Sn
CLCC06-2	6	2.90	21.00	12.00	5.20	17.80	9.00	PSS/Au-Sn
CLCC06-4	6	0.95	6.20	2.80	1.50	2.60	1.20	Au-Sn
CLCC08-1	8	1.27	6.00	5.00	2.05	4.60	3.60	PSS/Au-Sn
CLCC08-2	8	2.54	10.20	10.00	4.15	8.20	8.00	PSS/Au-Sn
CLCC08-4	8	0.65	4.80	4.10	1.20	3.20	1.80	Au-Sn
CLCC20-1	20	0.65	7.40	6.40	1.60	3.10	2.60	Au-Sn
CLCC20-2	20	1.27	7.40	6.40	1.60	3.10	2.60	PSS/Au-Sn
CLCC28-2T	28	1.27	11.43	11.43	1.50	7.37	7.37	Au-Sn

• Parameters of Typical CFP (Unit: mm)

Package P/N	Outer I/O Count	Outer I/O Pitch	Overall Dimension			Die Cavity Dimension		Sealing method	Heat Sink
			Length	Width	Height	Length	Width		
CFP03-2	3	1.27	6.00	4.50	1.50	2.00	2.00	Au-Sn	NO
CFP03-4	3	1.27	4.50	3.60	1.50	1.80	1.60	Au-Sn	NO
CFP14-1	14	1.27	10.50	10.50	1.90	5.60	3.80	PSS/Au-Sn	NO
CFP16-10	16	1.27	10.45	7.45	2.15	7.20	4.33	Au-Sn	NO

• Parameters of Typical CSOP (Unit: mm)

Package P/N	Outer I/O Count	Outer I/O Pitch	Overall Dimension			Die Cavity Dimension		Sealing method	Heat Sink
			Length	Width	Height	Length	Width		
CSOP04-1	4	1.27	4.50	3.40	2.65	3.00	1.90	PSS/Au-Sn	NO
CSOP06-1	6	2.54	7.87	5.59	3.55	5.47	1.99	PSS/Au-Sn	NO
CSOP06-15	6	1.27	3.80	3.80	1.65	2.00	2.00	PSS/Au-Sn	NO
CSOP06-17	6	1.27	6.30	4.55	2.35	5.10	3.35	PSS/Au-Sn	NO
CSOP08-1	8	1.27	5.00	4.40	1.55	3.00	3.00	PSS/Au-Sn	NO
CSOP08B	8	1.27	5.00	4.40	1.55	3.00	2.74	PSS/Au-Sn	NO
CSOP08U	8	1.27	5.00	4.40	1.55	3.00	2.74	PSS/Au-Sn	NO
CSOP08-4a	8	0.65	4.20	3.00	1.40	2.00	2.00	PSS/Au-Sn	NO
CSOP08-4b	8	0.65	3.80	3.00	1.40	2.00	1.60	PSS/Au-Sn	NO
CSOP08-4c	8	0.65	4.20	3.00	1.40	2.80	2.00	PSS/Au-Sn	NO
CSOP08-16	8	1.27	6.30	5.85	2.35	4.90	4.45	PSS/Au-Sn	NO
CSOP08-18	8	1.28	5.40	5.40	3.50	3.70	3.70	PSS/Au-Sn	NO
CSOP08-19	8	1.27	5.16	5.16	2.65	3.76	3.76	PSS/Au-Sn	NO
CSOP10-1a	10	1.27	7.62	6.35	1.80	5.62	3.15	PSS/Au-Sn	NO
CSOP14-11	14	1.27	9.00	6.00	2.80	4.50	2.40	PSS/Au-Sn	NO
CSOP16D	16	1.27	10.50	7.50	2.80	5.00	3.00	PSS/Au-Sn	NO
CSOP16-02	16	1.27	10.50	5.40	3.10	8.50	3.40	PSS/Au-Sn	NO
CSOP16-22a	16	0.90	11.70	7.50	2.65	5.00	3.20	PSS/Au-Sn	NO
CSOP16-23	16	1.27	10.30	7.50	2.20	4.90	4.20	Au-Sn	NO
CSOP16-24	16	1.27	12.75	9.40	3.85	10.55	5.80	PSS/Au-Sn	NO
CSOP16-25	16	1.27	10.30	7.50	2.70	8.00	3.80	PSS/Au-Sn	NO
CSOP16-26	16	1.27	10.50	6.30	2.90	9.10	4.90	PSS/Au-Sn	NO
CSOP16-28	16	1.27	12.60	7.50	2.30	10.40	5.375	PSS/Au-Sn	NO
CSOP16-30	16	1.27	10.45	7.50	2.30	8.46	5.50	PSS/Au-Sn	NO
CSOP16-33	16	1.27	10.30	7.50	2.30	8.10	5.375	PSS/Au-Sn	NO
CSOP16-34	16	1.27	10.50	7.50	2.15	5.00	3.40	PSS/Au-Sn	NO
CSOP20-16	20	1.27	12.70	7.50	2.75	6.00	4.00	PSS/Au-Sn	NO
CSOP20-18	20	1.27	12.60	7.50	2.30	10.40	5.375	PSS/Au-Sn	NO
CSOP20-21	20	1.27	12.60	7.50	2.30	10.40	5.375	PSS/Au-Sn	NO
CSOP24B	24	1.27	15.40	9.50	2.60	6.90	4.30	PSS/Au-Sn	NO
CSOP24-10	24	0.65	8.60	6.20	2.75	6.90	2.90	PSS/Au-Sn	YES
CSOP24-11	24	0.65	8.60	6.30	1.60	5.00	2.40	Au-Sn	YES
CSOP28-1	28	1.27	18.10	7.60	2.05	6.20	4.40	Au-Sn	NO
CSOP48-1a	48	0.65	15.75	9.65	2.10	6.73	3.56	PSS/Au-Sn	NO
CSOP48-3	48	0.50	18.40	13.00	2.10	5.60	5.60	Au-Sn	NO
CSOP56-1	56	0.50	14.40	6.20	2.10	4.50	3.20	Au-Sn	NO
CSOP64-6	64	1.27	43.80	17.80	4.00	40.80	13.70	Au-Sn	NO

Ceramic Packages for Microwave SIP Devices

Ball grid array (BGA) ceramic packages are available with RF and DC transmission ports, which are position-adjustable according to custom specifications. The BGA ceramic packages are widely applied to microwave SIP devices with multilayer routing or 3D stacking structures.



• Parameters of Typical BGA ceramic packages (Unit: mm)

Note: “T” represents dehydrogenation process for packages.

Package P/N	Frequency/ GHz	Transmission Structure	Overall Dimension	Die Cavity Dimension	Ball Mounting Dimension & Pitch	Minimum Bonding Dimension	Sealing Method
CBGA18-2T	0-22	coaxial-like	14.2*8.5*3.7	12.6*6.9	Φ0.35、0.8	0.38*0.38	PSS
CBGA18-2aT	0-22	coaxial-like	14.2*8.5*3	12.6*6.9	Φ0.35、0.8	0.38*0.38	PSS
CBGA18-3	0-40	coaxial-like	14.2*8.5*3.7	12.6*6.9	Φ0.35、0.8	0.38*0.38	PSS
CBGA20-1T	0-40	coaxial-like	16.1*11.1*3	14.2*9.2	Φ0.45、0.8	0.38*0.38	PSS
CBGA20-1aT	0-40	coaxial-like	16.1*11.1*3.7	14.2*9.2	Φ0.45、0.8	0.38*0.38	PSS
CBGA24-1T	0-40	coaxial-like	16.1*11.1*3	14.2*9.2	Φ0.45、0.8	0.38*0.38	PSS
CBGA24-1aT	0-40	coaxial-like	16.1*11.1*3.7	14.2*9.2	Φ0.45、0.8	0.38*0.38	PSS
CBGA32-2T	0-20	coaxial-like	21*16*3.7	19.1*14.1	Φ0.45、0.8	0.38*0.38	PSS
CBGA32-2aT	0-20	coaxial-like	21*16*3	19.1*14.1	Φ0.45、0.8	0.38*0.38	PSS
CBGA32-2bT	0-20	coaxial-like	21*16*4.9	19.1*14.1	Φ0.45、0.8	0.38*0.38	PSS
CBGA32-3	0-40	coaxial-like	21*16*3.7	19.1*14.1	Φ0.45、0.8	0.38*0.38	PSS
CBGA36-1	0-20	coaxial-like	25.6*20.8*3.7	23.7*18.9	Φ0.45、0.8	0.38*0.38	PSS
CBGA36-2	0-20	coaxial-like	25.6*20.8*3.7	23.7*18.9	Φ0.55、0.8	0.38*0.38	PSS
CBGA38-1	0-4	coaxial-like-cable-waveguide	10*10*1.7	7.6*7.6	Φ0.35、0.8/1.0	0.38*0.15	PSS/Au-Sn
CBGA38-2T	0-4	coaxial-like-cable-waveguide	10.1*10.1*1.7	7.6*7.6	Φ0.4、0.8/1.0	0.38*0.15	PSS/Au-Sn
CBGA38-3	0-18	coaxial-like-cable-waveguide	10.1*10.1*2	7.4*7.4	Φ0.4、0.8/1.0	0.4*0.25	PSS/Au-Sn
CBGA60-1T	0-20	coaxial-like	15*9.75*2.9	13.1*7.85	Φ0.45、0.75	0.38*0.38	PSS
CBGA60-1aT	0-20	coaxial-like	15*9.75*3.7	13.1*7.85	Φ0.45、0.75	0.38*0.38	PSS
CBGA120-1T	0-20	coaxial-like	22.5*15*2.9	20.6*13.1	Φ0.45、0.75	0.38*0.38	PSS
CBGA120-1aT	0-20	coaxial-like	22.5*15*3.7	20.6*13.1	Φ0.45、0.75	0.38*0.38	PSS

Ceramic Packages (HCRING, CPGA) for Cooled IRFPA

The mainframe of cooled IRFPA includes ceramic and metal rings. The ceramic ring is used for electrical connection and sensor chip support and protection, while the metal ring for welding between the optical window and the external chiller. Both the ceramic and the metal ring are key components for IRFPA' s electrical function, long life-time under low temperature & high vacuum, and high reliability.



◆ Ceramic Packages (HCRING, CPGA) for Cooled IRFPA

• Parameters of Typical Socket Connectors for Cooled IRFPA (Unit: mm)

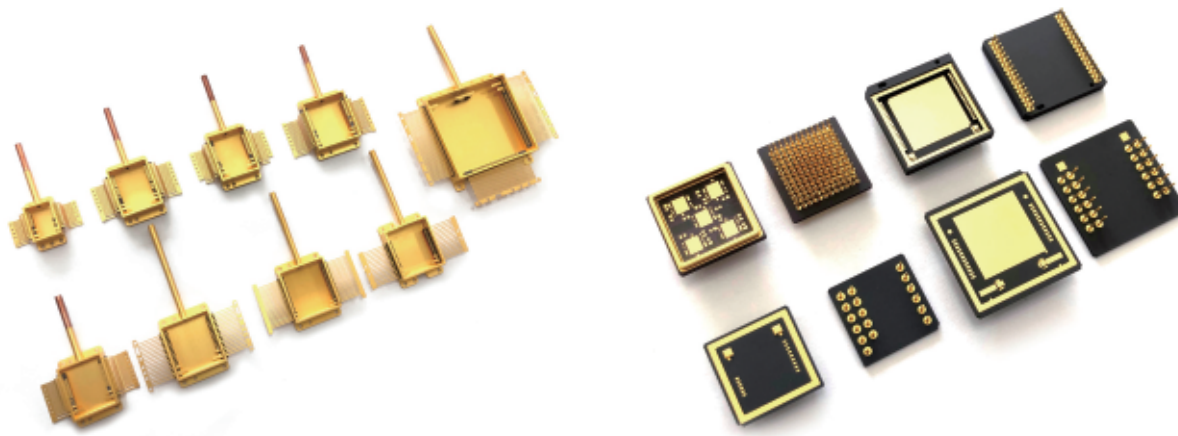
P/N	Outer I/O Counts	Outer I/O Pitch	Overall Dimension			Sealing Method
			Length	Width	Height	
CPGA37-2	37	0.635	37.00	9.20	14.47	Laser
CPGA37-3	37	0.58	29.00	9.00	12.50	Laser
CPGA51-2	51	0.635	48.20	11.00	14.47	Laser
CPGA51-3	51	0.58	37.00	9.00	12.50	Laser
CPGA67-1	67	1.43	55.00	9.00	18.00	Laser

• Parameters of Typical Ceramic Rings for Cooled IRFPA (Unit: mm)

Package P/N	Outer I/O Counts	I/O Method	Overall Dimension			Sealing Ring Diameter		Sealing Method
			Outer Diameter	Inner Diameter	Height	UP	DOWN	
HCRing21-1	21	PGA Pin	24.00	15.00	6.50	19.00	22.00	Laser
HCRing22-1	22	PGA Pin	36.00	16.40	18.20	20.00	32.00	Laser
HCRing24-1	24	PGA Pin	17.65	12.00	6.60	/	/	/
HCRing27-5	27	PGA Pin	33.60	21.60	8.00	27.50	27.50	Laser
HCRing28-3	28	PGA Pin	27.50	15.00	7.47	21.00	23.00	Laser
HCRing28-5	28	PGA Pin	27.50	14.90	11.10	21.00	28.00	Laser
HCRing28-6	28	PGA Pin	33.50	8.50	5.00	24.00	/	Laser
HCRing28-8	28	PGA Pin	27.50	16.00	6.50	21.00	26.00	Laser
HCRing28-9	28	PGA Pin	27.50	14.90	10.75	21.00	28.00	Laser
HCRing28-10	28	PGA Pin	35.40	20.00	8.90	33.70	24.20	Laser
HCRing34-2	34	PGA Pin	32.00	16.80	8.20	24.00	28.00	Laser
HCRing34-5	34	PGA Pin	32.00	14.90	9.85	23.60	31.50	Laser
HCRing39-2	39	PGA Pin	30.00	16.40	7.77	21.80	27.50	Laser
HCRing39-4	39	PGA Pin	30.00	16.40	8.30	22.20	28.00	Laser
HCRing40-1	40	Socket Connector	38.00	20.00	17.15	38.00	25.00	Laser
HCRing41-3a	41	PGA Pin	31.80	19.00	8.00	29.70	24.00	Laser
HCRing42-5	42	PGA Pin	47.00	34.50	10.20	40.40	40.40	Laser
HCRing43-1	43	Socket Connector	32.30	13.20	14.00	30.70	26.00	Laser
HCRing44-2c	44	Socket Connector	41.00	24.00	19.10	38.70	38.90	Laser
HCRing44-3	44	Socket Connector	110.00	56.00	27.00	90.00	60.00	Laser
HCRing44-4	44	Socket Connector	48.89	24.89	12.00	38.22	25.16	Laser
HCRing51-1	51	PGA Pin	46.00	22.00	10.00	43.40	37.60	Laser
HCRing54-5	54	PGA Pin	39.50	24.40	9.20	31.50	31.50	Laser
HCRing54-8	54	PGA Pin	39.40	24.40	8.27	31.50	31.50	Laser
HCRing54-10	54	PGA Pin	39.40	27.50	8.27	37.80	31.50	Laser
HCRing54-11	54	PGA Pin	39.50	24.50	8.27	31.50	31.50	Laser
HCRing54-12	54	PGA Pin	44.00	27.50	8.27	42.00	31.50	Laser
HCRing54-13	54	PGA Pin	34.50	19.50	6.97	27.50	27.50	Laser
HCRing54-14	54	PGA Pin	39.50	22.90	8.27	31.50	32.70	Laser
HCRing55-2	55	PGA Pin	41.00	22.00	10.00	32.00	38.70	Laser
HCRing64-3	64	PGA Pin	50.00	34.20	8.37	41.60	43.40	Laser
HCRing64-4	64	PGA Pin	50.50	34.20	8.27	42.00	43.30	Laser
HCRing74-1b	74	Socket Connector	70.80	27.50	31.00	69.80	31.00	Laser
HCRing74-2	74	Socket Connector	96.00	49.40	22.00	82.00	53.00	Laser
HCRing88-2	88	Socket Connector	120.00	56.00	22.00	90.00	60.00	Laser

Packages (BTP, CPGA, CLCC) for Uncooled IRFPA

Packages for uncooled IRFPA include BTP, CLCC and PGA forms. These packages are characteristic of multiple I/Os and high reliability. The maximum operation current is 5A, the leakage rate $\leq 1.0 \times 10^{-9} \text{Pa} \cdot \text{m}^3/\text{s}$, and the insulation resistance $\geq 1.0 \times 10^9 \Omega$.



◆ Packages (BTP, CPGA, CLCC) for Uncooled IRFPA

• Parameters of Typical Ceramic Packages for Uncooled IRFPA (Unit: mm)

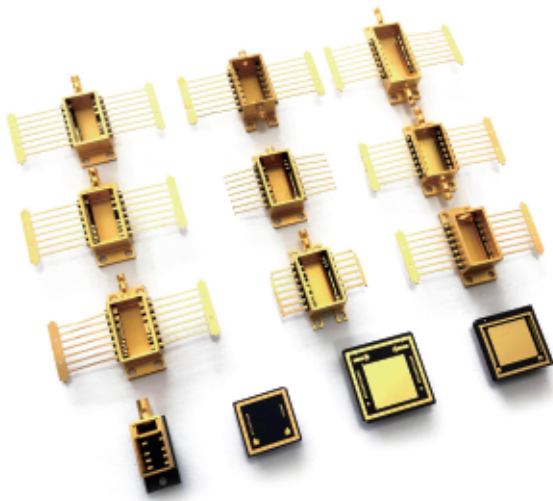
Package P/N	Outer I/O Counts	Outer I/O Pitch	Overall Dimension			Die Cavity Dimension		Sealing Method
			Length	Width	Height	Length	Width	
CPGA17-2	17	2.54	18.00	18.00	5.85	14.25	14.25	Au-Sn
CPGA22-14	22	2.54	16.00	16.00	5.85	9.40	9.10	Au-Sn
CPGA24-5	24	2.54	25.40	25.40	6.30	15.10	15.00	Au-Sn
CPGA32-3a	32	1.27	22.00	22.00	6.39	18.40	17.00	In-Ag
CPGA32-8	32	2.54	22.86	22.86	7.67	19.00	19.00	PSS
CPGA32-9	32	2.54	22.86	22.86	7.10	12.80	14.30	PSS
CPGA32-12	32	1.27	22.00	22.00	6.70	13.50	14.00	PSS
CPGA36-1	36	1.27	24.00	24.00	7.67	13.55	11.29	PSS
CPGA36-3	36	1.27	24.00	24.00	7.80	15.00	15.00	PSS
CPGA40-2	40	1.27	18.50	18.50	5.90	12.00	12.10	PSS
CPGA72-1	72	1.6	31.00	31.00	6.00	22.20	24.10	PSS
CFN38-1	38	0.8	16.20	16.20	3.30	8.10	8.35	PSS
CFN42-1	42	0.9	20.00	20.00	2.80	11.50	11.60	PSS
CLCC72-1	72	1.27	29.00	29.00	3.20	17.32	20.66	PSS

• Parameters of Typical Metal Packages for Uncooled IRFPA (Unit: mm)

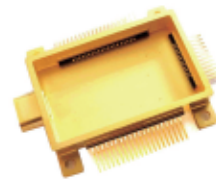
Package P/N	Outer I/O Counts	Outer I/O Pitch	Outer I/O Method	Sealing Dimension		Total Height	Die Cavity Dimension		Heat-sink Material	Sealing Method
				Length	Width		Length	Width		
BTP28-1	28	1.27	Two sides	25.00	23.50	6.60	18.85	18.00	4J29	PSS
BTP28-2a	28	0.80	Two sides	16.50	13.00	6.50	9.50	8.50	WCu15	Au-Sn
BTP32-1a	32	1.27	Two sides	25.00	23.50	6.70	18.30	18.00	4J29	PSS
BTP32-2	32	1.27	Two sides	25.00	25.50	6.70	18.30	20.00	4J29	PSS
BTP32-3	32	1.27	Two sides	33.80	31.00	6.70	26.30	25.50	4J29	PSS
BTP36-1	36	1.00	Two sides	25.00	23.50	6.60	16.50	16.50	4J29	Au-Sn
BTP40-1	40	1.00	Two sides	25.00	23.50	6.67	18.70	18.50	WCu15	PSS/Au-Sn
BTP40-2	40	0.80	Two sides	23.50	19.80	6.24	15.00	14.00	4J29	Au-Sn
BTP40-3	40	1.00	Two sides	25.00	23.50	7.67	18.70	18.50	4J29	PSS/Au-Sn
BTP40-4	40	1.00	Two sides	25.00	23.50	6.67	18.70	18.50	WCu15	PSS/Au-Sn
BTP40-5	40	1.27	Two sides	30.00	22.50	10.40	22.50	18.00	4J29	PSS
BTP40-6	40	0.80	Two sides	23.50	19.80	6.24	15.00	14.00	WCu15	Au-Sn
BTP40-8	40	1.00	Two sides	25.00	23.50	6.67	18.70	18.50	4J29	Au-Sn
BTP40-9	40	1.00	Two sides	25.00	23.50	6.97	18.70	18.50	4J29	PSS
BTP44-1	44	1.00	Two sides	27.00	23.50	7.40	19.30	18.00	4J29	PSS
BTP46-1	46	1.00	Two sides	25.00	23.50	6.60	18.80	18.00	4J29	PSS/Au-Sn
BTP54-1	54	1.00	Two sides	34.50	29.00	7.40	27.30	24.00	4J29	PSS
BTP64-1	64	1.27	Two sides	49.00	52.00	7.60	42.20	46.50	4J29	PSS
BTP64-3	64	0.80	Two sides	38.00	28.50	6.90	28.50	22.00	WCu15	PSS/Au-Sn
BTP68-1	68	0.80	Two sides	35.00	29.50	7.00	27.20	23.50	WCu15	PSS/Au-Sn
BTP73-1	73	0.80	Three sides	26.00	23.50	8.00	18.75	19.00	WCu15	PSS/Au-Sn
BTP102-1	102	1.00	Three sides	44.00	38.00	8.10	32.50	32.50	WCu15	PSS
BTP112-1	112	1.00	Three sides	44.00	48.00	8.10	30.50	41.00	WCu15	PSS
BTP130-1	130	0.90	Three sides	50.00	48.00	10.50	46.75	43.50	WCu15	PSS/Au-Sn
BTP152-1	152	0.80	Three sides	64.00	20.00	10.50	59.75	15.50	WCu15	PSS/Au-Sn

Packages (BTP, CDIP, OEP) for Fiber–Optic Communication

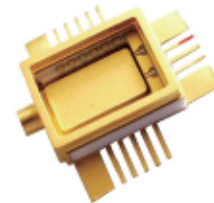
These packages are widely adopted by the fiber–optic communication industry for optical transmitter/receiver devices, optical switch, and high power laser and so on. Typical products include BTF (14 pins) packages, Mini–Dil packages, high power laser packages and etc. Sapphire optical window and characteristic impedance (50Ω) transmission connector are optional. Customer design of package outline, structure and dimension is available.



◆ Collection of Packages for Fiber-Optic Communication



◆ Package for Fiber-Optic Communication (10 Gbps)



◆ Package for Fiber-Optic Communication (40 Gbps)

• Parameters of Typical Packages for Fiber–optic Communication (Unit: mm)

Type	Application	Package P/N	Overall Dimension	Outer I/O Counts	Welding Pads	RF Route	Optical Window
Mini–Dil	DC	CDIP06–2	10.66 × 7.2 × 4.4	6	/	NO	NO
Mini–Dil	DC	CDIP08F001	13.2 × 7.4 × 4.95	8	/	NO	NO
BETTERFLY	DC	14pin BTP	/	14	/	NO	NO
BETTERFLY	15G	BTP52–2	27 × 24 × 4.8	52	/	12 routes, GSSG, 100Ω	
14 DC, 38 RF (24 RF routes +14 GND)	NO						
BETTERFLY	15G	BTP52–3b	27 × 24 × 5.2	52	/	8 routes, GSSG, 100Ω	
14 DC, 38 RF (16 RF routes+22 GND)	NO						
BOX	25G	OEP09–2	6.5 × 5.4 × 5.35	9	/	1 route, GSG, 50Ω	YES

• Parameters of BTF (14 pins) Packages (Unit: mm)

Package P/N	Outer I/O Counts	Outer I/O Pitch	Outer I/O Method	Sealing Dimension		Total Height	Die Cavity Dimension		Heat-sink Material	Sealing Method
				Length	Width		Length	Width		
BTP04	14	2.54	Two Sides	20.83	12.70	7.60	18.83	8.34	WCu15	PSS
BTP06	14	2.54	Two Sides	20.83	12.70	9.14	18.80	7.20	WCu10	PSS
BTP14-11	14	2.54	Two Sides	20.80	12.70	10.20	18.80	8.20	WCu15	PSS
BTP14-12	14	2.54	Two Sides	27.00	12.70	7.60	25.00	7.90	WCu15	PSS
BTP14-13	14	2.54	Two Sides	20.83	12.70	7.80	18.83	7.10	WCu15	PSS
BTP14-17	14	2.54	Two Sides	20.83	12.70	7.80	18.83	7.10	WCu15	PSS
BTP14-20	14	2.54	Two Sides	20.83	12.70	7.70	18.83	7.20	WCu10	PSS
BTP14-21	14	2.54	Two Sides	20.83	12.70	7.60	18.83	8.34	WCu15	PSS
BTP14-22	14	2.54	Two Sides	20.83	12.70	7.60	18.83	8.34	WCu15	PSS
BTP14-23	14	2.54	Two Sides	27.00	12.70	7.60	25.00	8.34	WCu15	PSS
BTP14-25	14	2.54	Two Sides	20.80	12.70	7.50	12.00	6.50	WCu15	PSS
BTP14-26	14	2.54	Two Sides	20.80	12.70	7.70	17.43	7.50	WCu10	PSS
BTP14-27	14	2.54	Two Sides	20.83	12.70	8.60	18.83	7.20	WCu10	PSS
BTP14-28	14	2.54	Two Sides	20.83	12.70	9.14	18.83	7.20	WCu10	PSS
BTP14-29	14	2.54	Two Sides	20.83	12.70	6.45	18.83	7.70	WCu15	PSS
BTP14-30	14	2.54	Two Sides	20.83	12.70	9.14	18.83	7.20	WCu10	PSS
BTP14-31	14	2.54	Two Sides	20.83	12.70	7.70	18.83	7.20	WCu15	PSS
BTP14-32	14	2.54	Two Sides	20.83	12.70	7.20	18.83	7.70	WCu15	PSS
BTP14-33	14	2.54	Two Sides	20.83	12.70	8.50	18.83	7.70	WCu15	PSS
BTP14-34	14	2.54	Two Sides	20.80	12.70	8.20	18.80	8.30	WCu15	PSS
BTP14-35	14	2.54	Two Sides	20.83	12.70	7.70	18.83	7.20	WCu15	PSS
BTP14-36	14	2.54	Two Sides	20.83	12.70	7.78	17.23	7.20	WCu10	PSS
BTP14-37	14	2.54	Two Sides	20.83	12.70	7.80	18.83	7.10	WCu10	PSS
BTP14-38	14	2.54	Two Sides	20.83	12.70	7.20	18.83	7.20	WCu10	PSS
BTP14-39	14	2.54	Two Sides	20.83	12.70	9.14	18.83	7.20	WCu10	PSS
BTP14-40	14	2.54	Two Sides	20.83	12.70	9.00	18.83	7.00	WCu10	PSS
BTP14-41	14	2.54	Two Sides	20.83	12.70	7.80	16.79	7.20	WCu10	PSS
BTP14-42	14	2.54	Two Sides	20.83	12.70	9.14	18.83	7.20	WCu10	PSS
BTP14-43	14	2.54	Two Sides	20.83	12.70	8.00	18.83	7.70	WCu15	PSS
BTP14-44	14	2.54	Two Sides	20.83	12.70	7.60	18.83	7.30	WCu15	PSS
BTP14-45	14	2.54	Two Sides	27.00	12.70	8.05	25.00	7.90	WCu15	PSS

SMD Packages for Discrete Devices

For discrete devices, SMD Packages are available in wider range of shapes and sizes and are generally designed to be placed on PCB boards.



◆ SMD Packages for Discrete Devices

• Parameters of SMD Packages (Unit: mm)

Package P/N	Overall Dimension			Die Cavity Dimension	
	Length	Width	Height	Length	Width
SMD-0.1H	4.00	3.50	1.93	1.55	2.20
SMD-0.1z	6.0	3.5	2.8	2.6	2.6
SMD-0.2z	7.95	5.50	2.70	3.0	3.2
SMD-0.3z	8.00	6.00	4.20	4.50	4.50
SMD-0.5e	10.20	7.50	3.00	4.05	5.40
SMD-0.5z	10.20	7.50	3.02	4.05	5.40
SMD-0.5J	10.20	7.50	3.00	4.35	5.40
SMD-1N	15.85	11.40	3.53	8.60	8.60
SMD-1S	15.85	11.41	3.33	8.65	8.65
SMD-1Z	15.88	11.43	3.20	8.40	8.20
SMD-2N	17.60	13.40	3.40	10.00	9.80

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Authorized Distributor Information

Note: All the data provided in this selection guide is subject to change without notice. The right is reserved to make changes to specifications and other information at any time.

