

3.RF Circulator & Isolator

➤ 3.1 RF Circulator & Isolator

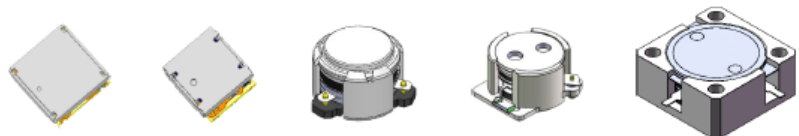
DPXXXC, PDXXXXS is a series of Low insertion loss and low intermodulation distortion circulators/isolators in both SMD and drop-in packages, which can offer good impedance matching performance. The main job of circulator is to ensure that the signal passes without loss in the forward direction, and high isolation prevention of reflected signals.

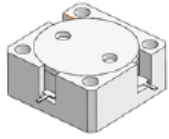
Application

- Base station
- RRH/RRU/AAU
- Small Cell, DAS
- Microwave communication
- Satellite Communication
- Radar
- Broadcasting

Key features

- Frequency: 200MHz ~ 9GHz
- Insertion loss: 0.15dB (minimum) 0.2~0.35dB (typical)
- Input and output return loss: 20dB (minimum) 25~28dB (typical)
- Isolation: 20dB (minimum) 25~30dB (typical)
- Third-order intermodulation IMD: 60dB (minimum) 65~80dB (typical)
- Input and output impedance real part: 50 ± 5 ohm (tolerance can be adjusted according to customer requirements)





Drop In (high power) Circulator & Isolator

19mm*19mm、 25.4mm*25.4mm、 31.8mm*31.8mm、
31.8mm*38.8mm ***

7

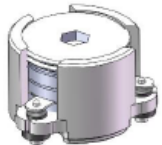
Product Series

45

Package Size

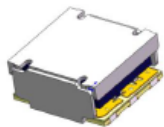
500+

PNs



SMD (high power) Circulator & Isolator

Ø7mm、 Ø10mm、 Ø12.5mm、 Ø15mm、 Ø25mm、
9mm*9mm ***



SMD (low power) Circulator & Isolator

7mm*7mm、 5mm*5mm、 4mm*4mm ***

Providing a full range of circulator & isolator products (including ferrite, waveguide, microstrip, low power, etc.)
Meeting customers diversified applications & Following customers product evolution

◆ High Power Surface Mount (SMD) Circulator & Isolator

Product Series	Working frequency (MHz)	Dimension (mm)	Power (W)	return loss (dB)	insertion loss (dB)	Isolation (dB)	third-order intermodulation (dBc)
DPxxxxC	200 – 9000	Ø7 – 38.1*38.1	20 – 500	20 Min.	0.15 – 0.35	20 Min.	60 Min.
DPxxxxS	200 – 9000	Ø7 – 38.1*38.1	20 – 500	20 Min.	0.15 – 0.35	20 Min.	60 Min.

◆ Drop In Circulator & Isolator

Product Series	Working frequency (MHz)	Dimension (mm)	Power (W)	return loss (dB)	insertion loss (dB)	Isolation (dB)	third-order intermodulation (dBc)
DPxxxxC	200 – 9000	Ø7 – 38.1*38.1	20 – 500	20 Min.	0.15 – 0.35	20 Min.	60 Min.
DPxxxxS	200 – 9000	Ø7 – 38.1*38.1	20 – 500	20 Min.	0.15 – 0.35	20 Min.	60 Min.

◆ Low Power Surface Mount (SM) Circulator & Isolator

Product Series	Working frequency (MHz)	Dimension (mm)	Power (W)	return loss (dB)	insertion loss (dB)	Isolation (dB)	third-order intermodulation (dBc)
DP-CLxxxxxxx	400 – 5000	7*7/5*5/4*4	10	12 Min.	0.6 – 0.8	12 Min.	50 Min.

φ7mm SMD series for 2.6G & 3.5G

Key parameters	Specification requirements (Ø7mm)	Dapu (Ø7mm)
Frequency (MHz)	2496 ~ 2690	2496 ~ 2690
Isolation (dB)	20	20
Return Loss (dB)	22	22
Insertion Loss (dB)	0.35	0.26
Impedance (Ω)	50	50
3 rd IMD (Max.) (dBc)	-60 (2 x 5W)	-60 (2 x 5W)
2 nd Attenuation (dB)	20	22
Power FWD/REV/PEAK (W)	30/30/150	50/50/200
Operating Temp. (°C)	-40 to +110	-40 to +125



Ø7mm

Key parameters	Specification requirements (Ø7mm)	Dapu (Ø7mm)
Frequency (MHz)	3400 ~ 3600	3400 ~ 3600
Isolation (dB)	20	20
Return Loss (dB)	22	22
Insertion Loss (dB)	0.3	0.23
Impedance (Ω)	50	50
3 rd IMD (Max.) (dBc)	-60 (2 x 5W)	-60 (2 x 5W)
2 nd Attenuation (dB)	20	25
Power FWD/REV/PEAK (W)	30/30/150	50/50/200
Operating Temp. (°C)	-40 to +110	-40 to +125

* Full temperature performance

Low power models

Part Number	Frequency	Center frequency	Insertion loss	Isolation	Return loss	Handling power	Reflection power	Size[W*L*T]	
	(MHz)	(MHz)	(dB) Max.	(dB) Min	(dB) Max.	(W) Max	(W) Max	W*L[mm] ±0.3	T[mm] ±0.2
DP-IL0520(A&B)634	617-652	634.5	1.30	9	11	5	2	5*5	2
DP-IL0520(A&B)748	729-768	748.5	1.30	9	11	5	2	5*5	2
DP-IL0520(A&B)780	758-803	780.5	1.20	11	11	5	2	5*5	2
DP-IL0520(A&B)806	791-821	806	1.10	11	11	5	2	5*5	2
DP-IL0520(A&B)873	852-894	873	1.10	10	11	5	2	5*5	2
DP-IL0520(A&B)942	925-960	942.5	0.90	13	13	5	2	5*5	2
DP-IL0520(A&B)1842	1805-1880	1842.5	0.80	14	14	5	2	5*5	2
DP-IL0520(A&B)1900	1880-1920	1900	0.65	14	14	5	2	5*5	2
DP-IL0520(A&B)1960	1930-1990	1960	0.65	14	14	5	2	5*5	2
DP-IL0520(A&B)1962	1930-1995	1962.5	0.70	14	14	5	2	5*5	2
DP-IL0520(A&B)2140	2110-2170	2140	0.65	14	14	5	2	5*5	2
DP-IL0520(A&B)2155	2110-2200	2155	0.70	14	14	5	2	5*5	2
DP-IL0520(A&B)2350	2300-2400	2350	0.70	14	14	5	2	5*5	2
DP-IL0520(A&B)2593	2496-2690	2593	0.80	12	12	5	2	5*5	2
DP-IL0520(A&B)2655	2620-2690	2655	0.65	15	14	5	2	5*5	2
DP-IL0520(A&B)3450	3300-3600	3450	0.90	10	12	5	2	5*5	2
DP-IL0520(A&B)3500	3400-3600	3500	0.90	13	12	5	2	5*5	2
DP-IL0520(A&B)3625	3550-3700	3625	0.90	13	12	5	2	5*5	2
DP-IL0520(A&B)3700	3600-3800	3700	0.90	13	12	5	2	5*5	2

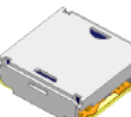
4*4mm



5*5mm



7*7mm



Operating temperature range : -40~85°C