

Phase Shifters



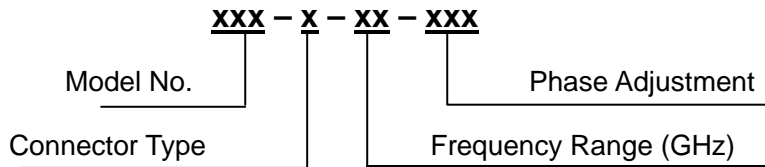
- ◇ DC-18GHz, up to 100W
- ◇ Phase Adjustment 10°/GHz to 900°/GHz
- ◇ Ordinary, Direct Reading and Digital Reading type choice
- ◇ Low Loss, High Reliability
- ◇ Custom Designs Available

Description

Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

In this section, you can find the phase shifters with individual data sheets containing product description, specifications and outline drawings by a quick reference guide.

Order Information



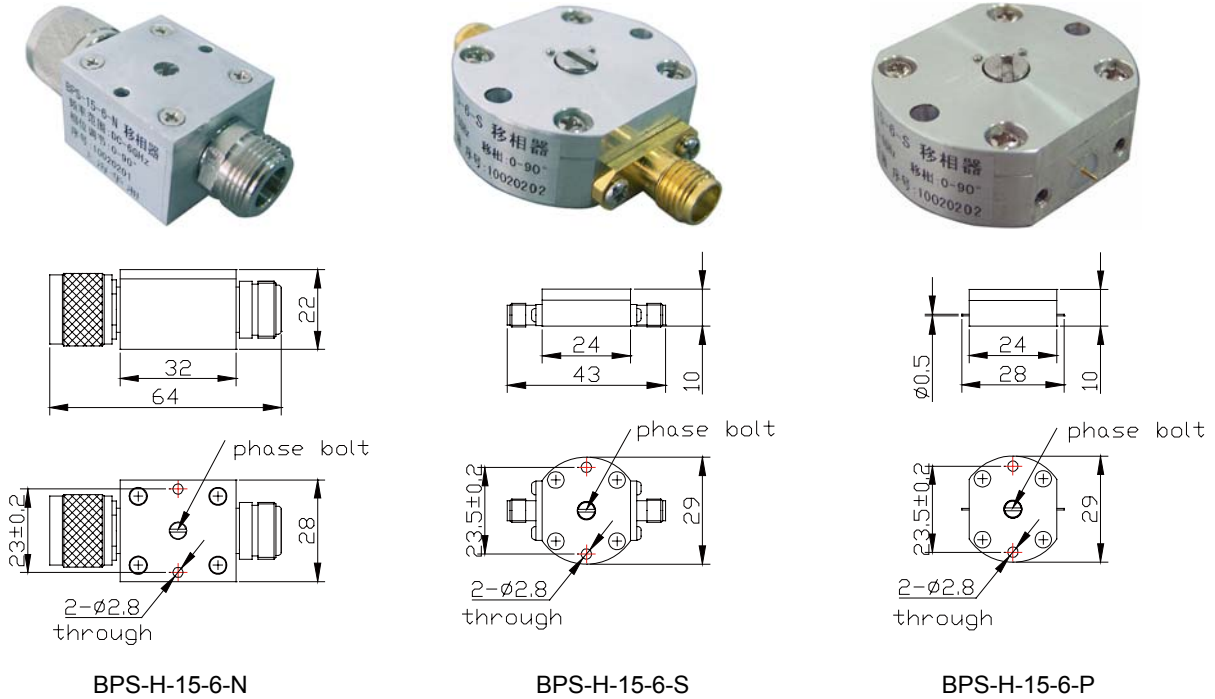
Please confirm with us the main parameters of phase shifters such as frequency range, phase adjustment, connector type and dimensions Type (if have any), or your special demand.

Phase Shifters

Phase Shifters...4mW-100W DC-18GHz

Model Number	Average Power(W)	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment	Connector Type	Page No	Pictures
BPS-H	10	DC-6	≤1.50	≤1.25	90° with 15° /GHz	N,SMA	6-3	
BPS-S	50	DC-18	≤1.60	≤1.5	360° with 20° /GHz	SMA	6-4	
BPS-SMA	50	DC-18	≤1.50	≤0.75	180° with 10° /GHz	SMA	6-5	
BPS-G	50	DC-1	≤1.05	≤0.2	0-120°	SMA	6-6	
SHX-YXQ-002	/	0.00854	≤1.25	≤0.3	27.5° ±1°	BNC	6-7	
CKBPS-607 6 Bit Digital	4mW	0.4-0.45	≤1.60	≤7	360°	SMA	6-8	
TKE-45-8-S	50	DC-8	≤1.50	≤1.25	360° with 45° /GHz	SMA(K,K)	6-9	
TKE-60-8-X-X	100	DC-8	≤1.50	≤1.25	480° with 60° /GHz	N,SMA	6-10	
TKE-90-8-X-X	100	DC-8	≤1.50	≤1.50	720° with 90° /GHz	N,SMA	6-11	
TKE-180-4-X-X	100	DC-4	≤1.50	≤2.0	720° with 180° /GHz	N,SMA	6-12	
TKE-360-2-X-X	100	DC-2	≤1.50	≤2.0	720° with 360° /GHz	N,SMA	6-13	
TKE-720-0.5 -N-A	100	DC-0.5	≤1.50	≤2.0	360° with 720° /GHz	N	6-14	
TKE-900-1-X-A	100	DC-1	≤1.50	≤2.0	900° with 900° /GHz	N,SMA	6-15	
TKE-2000 -0.09-X-A	100	0.09	≤1.30	≤2.0	0-2000°	N,,SMA	6-16	

Model BPS-H 15°/GHz DC-6GHz 10 Watts



Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

BPS-H phase shifters' average power 10W, frequency range DC-6GHz, adjustable phase 15°per GHz and totally 90° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Gold Plated	Beryllium Copper Gold Plated	Aluminum, Blue Spray Painting	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	N: 64×28×22mm SMA:43×29×10mm Lead:28×29×10mm	N:105g SMA:25g Lead:20g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
BPS-H-15-6-N	DC-6	≤1.5	≤1.25	0~90°
BPS-H-15-6-S				
BPS-H-15-6-P				

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 10W

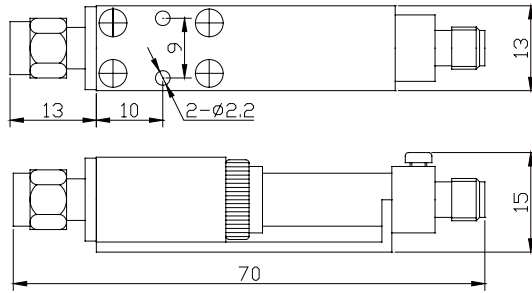
PEAK POWER: 500W (5μs pulse width with 2% duty cycle)

CONNECTOR TYPE: SMA (F, F), N (M, F), Lead

Notes:

1. Dimensions Tolerance ±2%

Model BPS-S 20°/GHz DC-18GHz 50 Watts



Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

BPS-S phase shifters' average power 50W, frequency range DC-18GHz, adjustable phase 20°per GHz and totally 360° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Male Pin	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Gold Plated	Brass Gold Plated	Beryllium Copper Gold Plated	Brass Gold Plated	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	70×13×15mm	50g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
BPS-S-2-40	DC-2	1.25	≤0.35	0-40°
BPS-S-3-60	DC-3	1.30	≤0.5	0-60°
BPS-S-6-120	DC-6	1.40	≤0.75	0-120°
BPS-S-9-180	DC-9	1.50	≤1.0	0-180°
BPS-S-12-240	DC-12	1.60	≤1.25	0-240°
BPS-S-18-360	DC-18	1.60	≤1.5	0-360°

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 50W

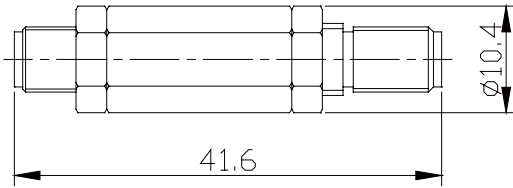
PEAK POWER: 5KW (5μs pulse width with 1% duty cycle)

CONNECTOR TYPE: SMA (M, F)

Notes:

1. Dimensions Tolerance ±2%

Model BPS-SMA 10°/GHz DC-18GHz 50 Watts



Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

BPS-SMA phase shifters' average power 50W, frequency range DC-18GHz, adjustable phase 10°per GHz and totally 180° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Gold Plated	Beryllium Copper Gold Plated	Brass Gold Plated	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	Φ10.4×41.6 (max 50.5) mm	15g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
BPS-SMA	DC-18	1.3 to 4GHz 1.5 to 18GHz	0.5dB to 12GHz 0.75dB to 18GHz	0-180°

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 50W

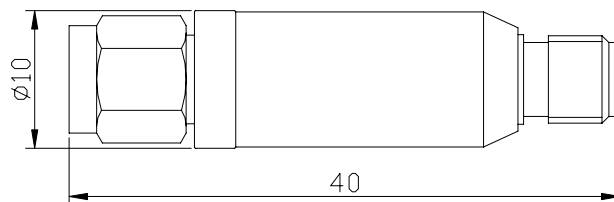
PEAK POWER: 5KW (5μs pulse width with 1% duty cycle)

CONNECTOR TYPE: SMA(F,F)

Notes:

1. Dimensions Tolerance ±2%

Model BPS-G-1-XX 990-1130MHz 50 Watts



Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

BPS-G-1-XX phase shifters' average power 50W, frequency range 990-1130MHz, adjustable phase 10°per GHz and totally 60°,120° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Gold Plated	Beryllium Copper Gold Plated	Aluminum	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	∅10×40mm	10g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment	Phase accuracy
BPS-G-1-60	1	1.05	≤0.1	60°	±1°
BPS-G-1-120	1	1.05	≤0.2	120°	±1°

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 50W

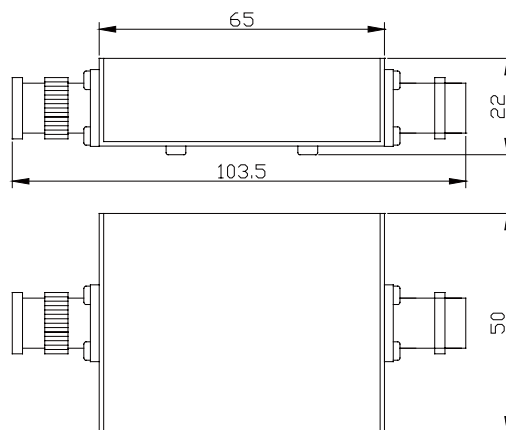
PEAK POWER: 5KW (5μs pulse width with 1% duty cycle)

CONNECTOR TYPE: SMA(M,F)

Notes:

1. Dimensions Tolerance ±2%

Model SHX-YXQ-002 27.5° 8.54MHz 50 Watts



Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

SHX-YXQ-002 phase shifters' frequency 8.54MHz, totally 27.5° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Male Pin	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Nickel Plated	Brass Gold Plated	Beryllium Copper Gold Plated	Aluminum, Black Anodize	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	103.5×50×22mm	70g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(MHz)	Max VSWR	Insertion Loss(dB)
SHX-YXQ-002	8.54	1.25	≤0.3

NOMINAL IMPEDANCE: 50Ω

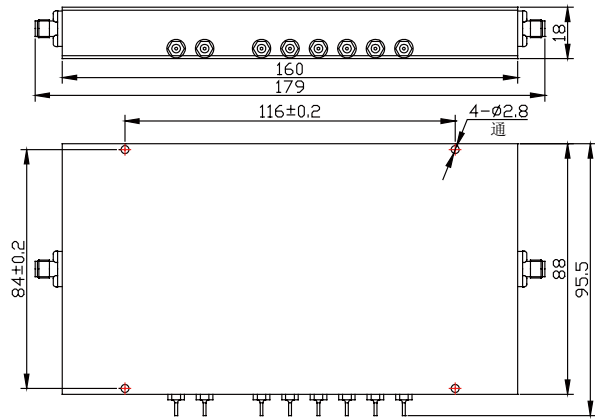
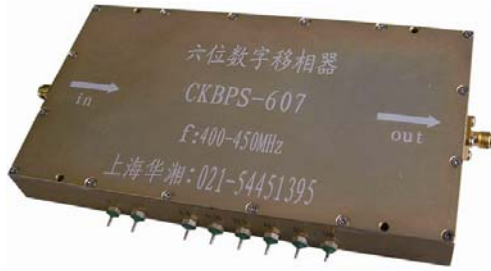
AVERAGE POWER: 50W

CONNECTOR TYPE: BNC (M, F)

Notes:

1. Dimensions Tolerance ±2%

Model CKBPS-607 360°/5.62° 400-450MHz 4mW



Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

CKBPS-607 phase shifters' frequency 400-450MHz, totally 360° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Nickel Plated	Beryllium Copper Gold Plated	Aluminum, Anodic Oxidation	-40°C~+70°C	179×95.5×18mm	120g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

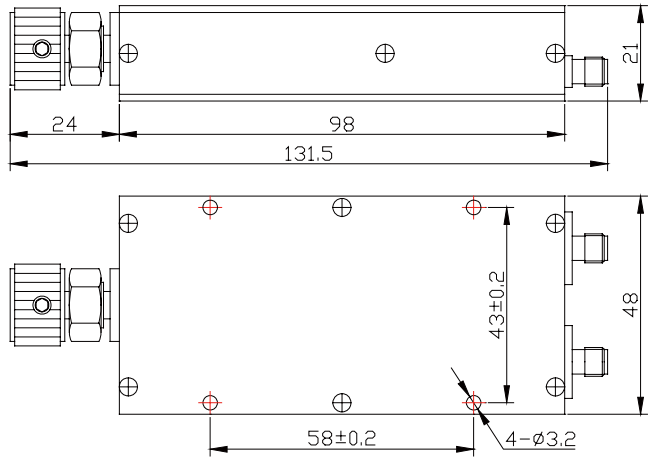
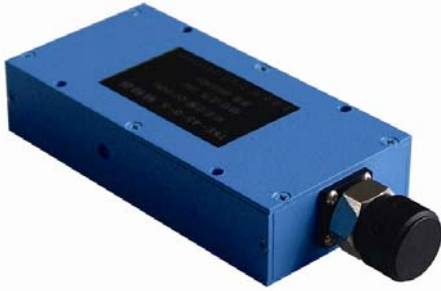
Model Number	Frequency Range(MHz)	Max VSWR	Insertion Loss(dB)	Phase Range	Phase accuracy	Phase step
CKBPS-607	400-450	1.60	≤7.0	0~360°	≤±3°	5.62°

NOMINAL IMPEDANCE: 50Ω
AVERAGE POWER: 4mW
OPERATING VOLTAGE: DC 5V
SWITCHING TIME: ≤150ns
CONNECTOR TYPE: SMA (F, F)

Notes:

1. Dimensions Tolerance ±2%

Model TKE-45-8-S 45°/GHz DC-8GHz 50 Watts



Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

TKE-45-8-S phase shifters' average power 50W, frequency range DC-8GHz, adjustable phase 45° per GHz and totally 360° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Gold Plated	Beryllium Copper Gold Plated	Aluminum, Blue Spray Painting	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	131.5×48×21mm	200g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
TKE-45-1-S	DC-1	1.20	≤0.3	0-45°
TKE-45-2-S	DC-2	1.30	≤0.5	0-90°
TKE-45-4-S	DC-4	1.40	≤0.75	0-180°
TKE-45-6-S	DC-6	1.50	≤1.0	0-270°
TKE-45-8-S	DC-8	1.50	≤1.25	0-360°

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 50W

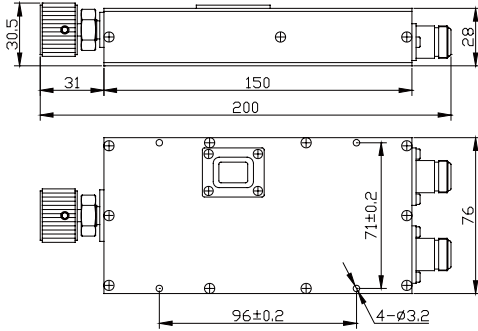
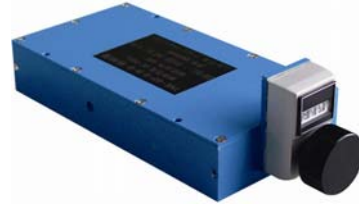
PEAK POWER: 5KW (5μs pulse width with 1% duty cycle)

CONNECTOR TYPE: SMA (F, F)

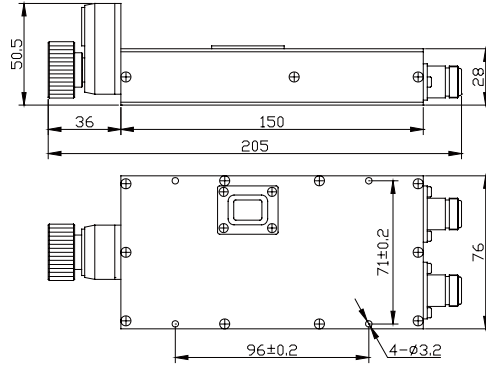
Notes:

1. Dimensions Tolerance ±2%

Model TKE-60-8-X-X 60°/GHz DC-8GHz 100 Watts



Analog



Digital

Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

TKE-60-8-X-X phase shifters' average power 50W, frequency range DC-8GHz, adjustable phase 60°per GHz and totally 480° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Nickel Plated	Beryllium Copper Gold Plated	Aluminum, Blue Spray Painting	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	Analog: 200×76×30.5mm Digital: 205×76×50.5mm	490g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
TKE-60-1-X-X	DC-1	1.20	≤0.3	0~60°
TKE-60-2-X-X	DC-2	1.30	≤0.5	0~120°
TKE-60-3-X-X	DC-3	1.40	≤0.8	0~180°
TKE-60-4-X-X	DC-4	1.40	≤1.0	0~240°
TKE-60-6-X-X	DC-6	1.50	≤1.0	0~360°
TKE-60-8-X-X	DC-8	1.50	≤1.25	0~480°

Notes: The first X refer to connector type, the second X refer to display mode.

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 100W

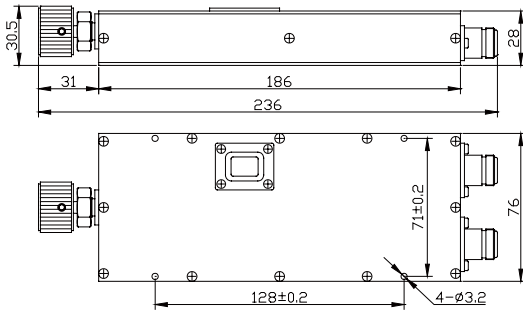
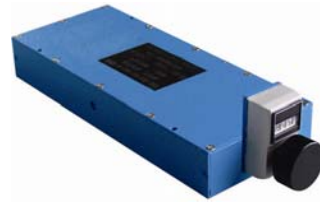
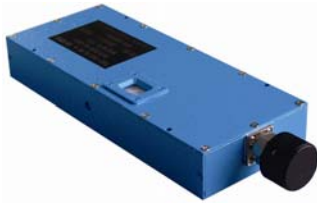
PEAK POWER: 5KW (5μs pulse width with 2% duty cycle)

CONNECTOR TYPE: N (F, F), SMA (F, F)

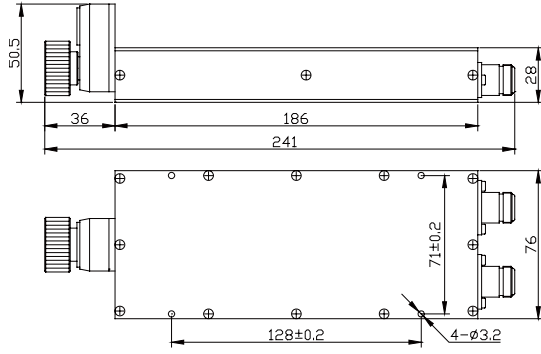
Notes:

1. Dimensions Tolerance ±2%
2. Dimensions and specifications refer to connector type N unless otherwise specified.

Model TKE-90-8-X-X 90°/GHz DC-8GHz 100 Watts



Analog



Digital

Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

TKE-90-8-X-X phase shifters' average power 100W, frequency range DC-8GHz, adjustable phase 90° per GHz and totally 720° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Nickel Plated	Beryllium Copper Gold Plated	Aluminum, Blue Spray Painting	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	Analog: 236×76×30.5mm Digital: 241×76×50.5mm	550g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
TKE-90-1-X-X	DC-1	1.20	≤0.5	0~90°
TKE-90-2-X-X	DC-2	1.30	≤0.8	0~180°
TKE-90-3-X-X	DC-3	1.40	≤1.2	0~270°
TKE-90-4-X-X	DC-4	1.40	≤1.2	0~360°
TKE-90-6-X-X	DC-6	1.50	≤1.4	0~540°
TKE-90-8-X-X	DC-8	1.50	≤1.5	0~720°

Notes: The first X refer to connector type, the second X refer to display mode.

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 100W

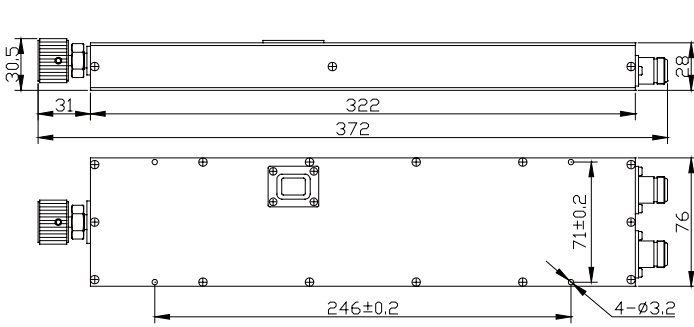
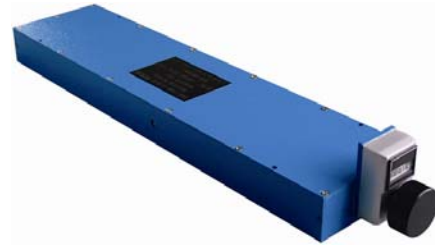
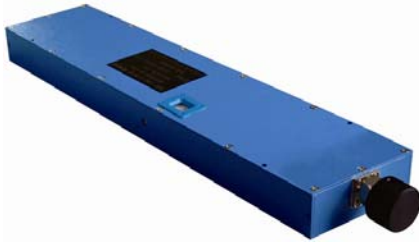
PEAK POWER: 5KW (5μs pulse width with 2% duty cycle)

CONNECTOR TYPE: N (F, F), SMA (F, F)

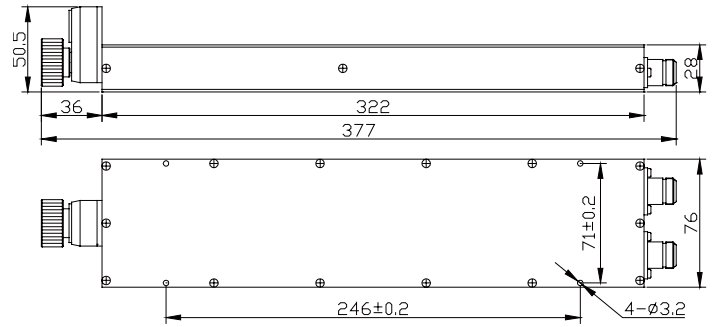
Notes:

1. Dimensions Tolerance ±2%
2. Dimensions and specifications refer to connector type N unless otherwise specified.

Model TKE-180-4-X-X 180°/GHz DC-4GHz 100 Watts



Analog



Digital

Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

TKE-180-4-X-X phase shifters' average power 100W, frequency range DC-4GHz, adjustable phase 180°per GHz and totally 720° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Nickel Plated	Beryllium Copper Gold Plated	Aluminum, Blue Spray Painting	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	Analog: 272×76×30.5mm Digital: 277×76×50.5mm	795g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
TKE-180-1-X-X	DC-1	1.40	≤1.0	0~180°
TKE-180-2-X-X	DC-2	1.50	≤1.5	0~360°
TKE-180-3-X-X	DC-3	1.50	≤1.75	0~540°
TKE-180-4-X-X	DC-4	1.50	≤2.0	0~720°

Notes: The first X refer to connector type, the second X refer to display mode.

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 100W

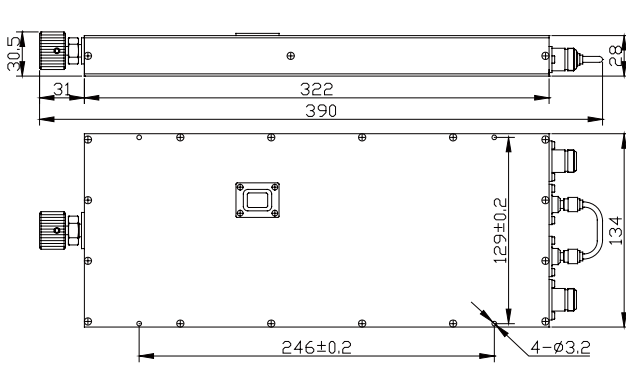
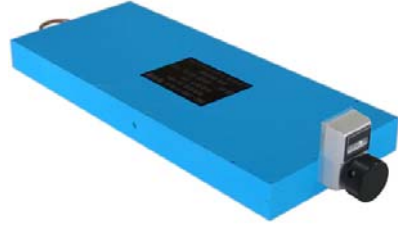
PEAK POWER: 5KW (5μs pulse width with 2% duty cycle)

CONNECTOR TYPE: N (F, F), SMA (F, F)

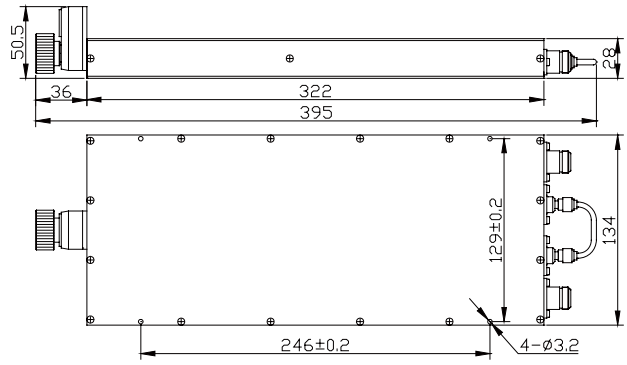
Notes:

1. Dimensions Tolerance ±2%
2. Dimensions and specifications refer to connector type N unless otherwise specified.

Model TKE-360-2-X-X 360°/GHz DC-2GHz 100 Watts



Analog



Digital

Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

TKE-360-2-X-X phase shifters' average power 100W, frequency range DC-2GHz, adjustable phase 360°per GHz and totally 720° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Nickel Plated	Beryllium Copper Gold Plated	Aluminum, Blue Spray Painting	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	Analog: 390×76×30.5mm Digital: 395×76×50.5mm	1800g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
TKE-360-1-X-X	DC-1	1.40	≤1.5	0~360°
TKE-360-2-X-X	DC-2	1.50	≤2.0	0~720°

Notes: The first X refer to connector type, the second X refer to display mode.

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 100W

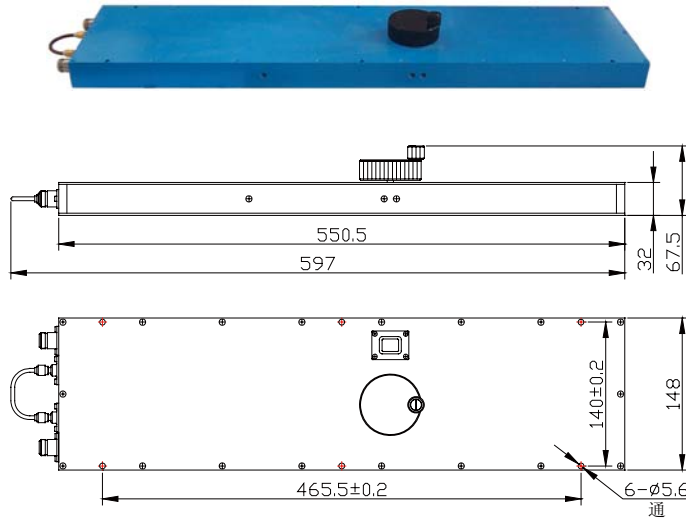
PEAK POWER: 5KW (5μs pulse width with 2% duty cycle)

CONNECTOR TYPE: N (F, F), SMA (F, F)

Notes:

1. Dimensions Tolerance ±2%
2. Dimensions and specifications refer to connector type N unless otherwise specified.

Model TKE-720-0.5-N-A 720°/GHz DC-0.5GHz 100 Watts



Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

TKE-900-1-X-A phase shifters' average power 100W, frequency range DC-0.5GHz, adjustable phase 720°per GHz and totally 720° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Nickel Plated	Beryllium Copper Gold Plated	Aluminum, Blue Spray Painting	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	597×148×67.5mm	2.55Kg

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
TKE-720-0.5-N-A	DC-0.5	1.5	≤2.0	0-360°

Notes: X refers to connector type.

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 100W

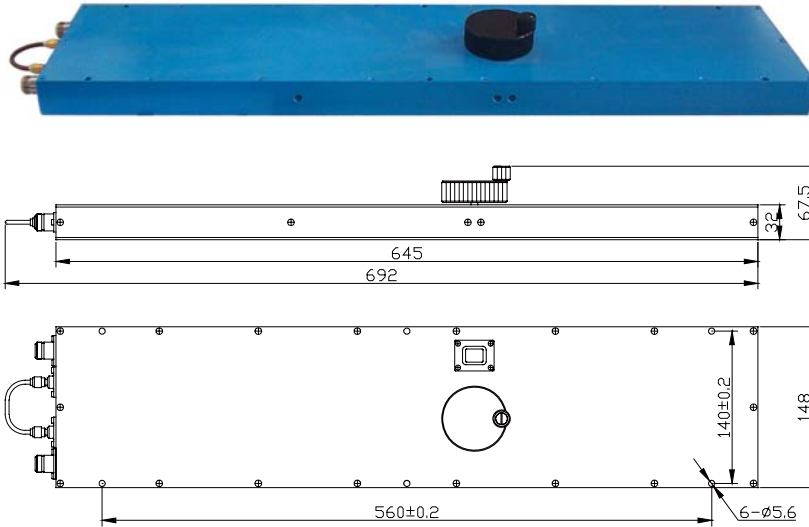
PEAK POWER: 5KW (5μs pulse width with 2% duty cycle)

CONNECTOR TYPE: N (F, F)

Notes:

1. Dimensions Tolerance ±2%
2. Dimensions and specifications refer to connector type N unless otherwise specified.

Model TKE-900-1-X-A 900°/GHz DC-1GHz 100 Watts



Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

TKE-900-1-X-A phase shifters' average power 100W, frequency range DC-1GHz, adjustable phase 900°per GHz and totally 900° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Nickel Plated	Beryllium Copper Gold Plated	Aluminum, Blue Spray Painting	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	692×148×67.5mm	2700g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(GHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
TKE-900-1-X-A	DC-1	1.5	≤2.5	0-900°

Notes: X refers to connector type.

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 100W

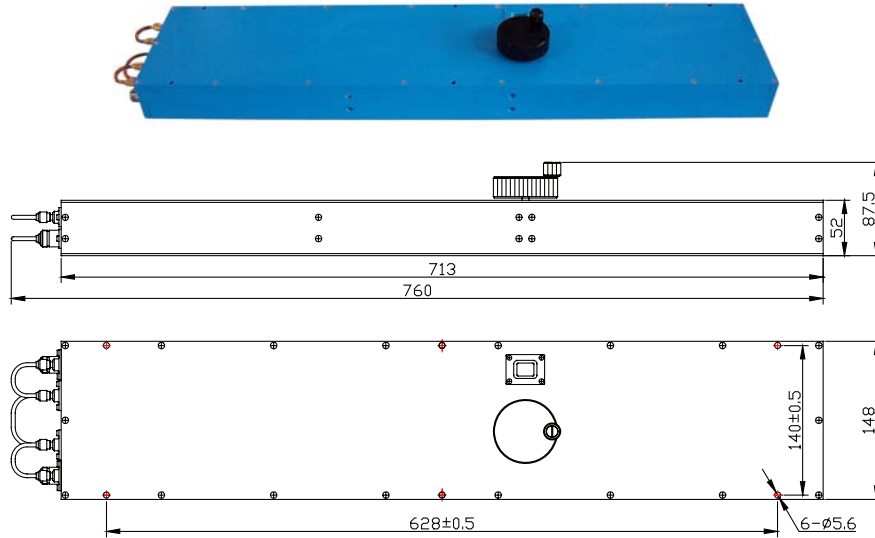
PEAK POWER: 5KW (5μs pulse width with 2% duty cycle)

CONNECTOR TYPE: N (F, F), SMA (F, F)

Notes:

1. Dimensions Tolerance ±2%
2. Dimensions and specifications refer to connector type N unless otherwise specified.

Model TKE-2000-0.09-X-A 2000°/GHz 90±2MHz 100 Watts



Phase shifters are used to continuously transform the delay of signal and adjust phase of measure system in RF transmission system and mainly used in phase-controlled antenna array radar.

TKE-2000-0.09-X-A phase shifters' average power 100W, frequency range 90±2MHz, adjustable phase 2000° per GHz and totally 180° phase adjustable.

MECHANICAL SPECIFICATIONS

Connectors	Female Pin	Housing	Temp Range	Dimensions	Weight
Brass Nickel Plated	Beryllium Copper Gold Plated	Aluminum, Blue Spray Painting	Operating: -10°C~+50°C Non-operating: -40°C~+70°C	760×148×87.5mm	4260g

RoHS Compliant: Yes

ELECTRICAL SPECIFICATIONS

Model Number	Frequency Range(MHz)	Max VSWR	Insertion Loss(dB)	Phase Adjustment
TKE-2000-0.09-X-A	90±2	1.3	≤2.0	0-180°

NOMINAL IMPEDANCE: 50Ω

AVERAGE POWER: 100W

PEAK POWER: 5KW (5μs pulse width with 2% duty cycle)

CONNECTOR TYPE: N (F, F), SMA (F, F)

Notes:

1. Dimensions Tolerance ±2%
2. Dimensions and specifications refer to connector type N unless otherwise specified.