

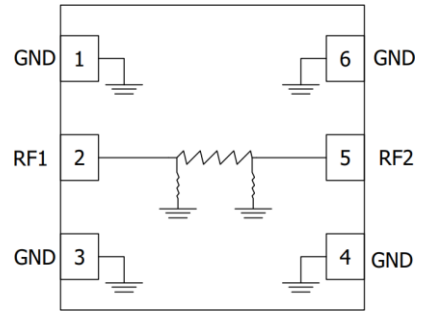
### Performance Characteristics

- Operating frequency band: DC ~ 25GHz
- 9 attenuation levels: 1, 2, 3, 4, 5, 6, 7, 8 & 10dB
- Power capacity: 2.5W
- Chip Size: 6 Lead 2x2mm SMT Package

### typical application

- Mobile infrastructure
- satellite communications
- microwave
- Instrumentation

### functional block diagram



### summarize

The CWAT15XSP2 series are broadband fixed 50 ohm matched SMT package attenuator chips that provide extremely flat attenuation of 1, 2, 3, 4, 5, 6, 7, 8, and 10 dB over the frequency band with excellent VSW performance.

and can withstand up to 2.5W power input<sup>[1]</sup>.

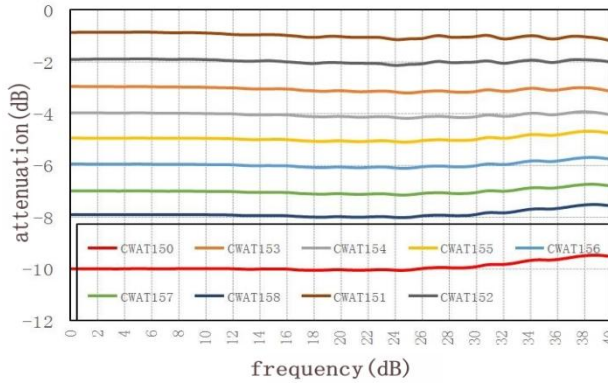
### Electrical Performance Chart (TA=+ 25 °C, 50 Ohm system)

Device Model	attenuation	return loss	attenuation tolerance	unit (of measure)
		DC~20		GHz
CWAT151SP2	1	18	±0.25	dB
CWAT152SP2	2	18	±0.25	dB
CWAT153SP2	3	18	±0.25	dB
CWAT154SP2	4	18	± 0.30	dB
CWAT155SP2	5	18	± 0.30	dB
CWAT156SP2	6	18	±0.35	dB
CWAT157SP2	7	18	±0.35	dB
CWAT158SP2	8	18	±0.35	dB
CWAT150SP2	10	18	±0.35	dB

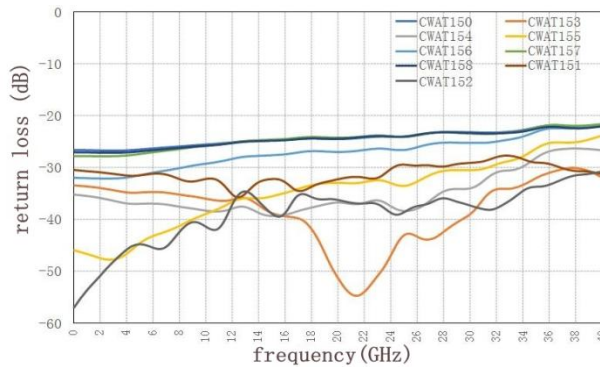
Note [1]: When tested with 4W input power, the chip works stably for 24H without any abnormality.

test curve

Attenuation vs. frequency



Return Loss vs. Frequency



Absolute maximum rating

Device Model	CWAT151	CWAT152	CWAT153	CWAT154	CWAT155	CWAT156	CWAT157	CWAT158	CWAT150	unit (of measure)
input power	40	40	40	40	40	40	40	40	40	dBm
Storage temperature	-65 to +150									°C
operating temperature	-40 to +85									°C
ESD SenCwTivity (HBM)	Class 1C	Class 1B	Class 1B	Class 2	Class 1B	Class 1B	Class 1B	Class 1B	Class 2	V

Package Information

model number	package material	Pad plating	MSL rating (1)	Package identification (2)	environmental requirement
CWAT15XSP2	Green resin compounds	NiPdAu	MSL 1	S15X XXXX	RoHS compliant

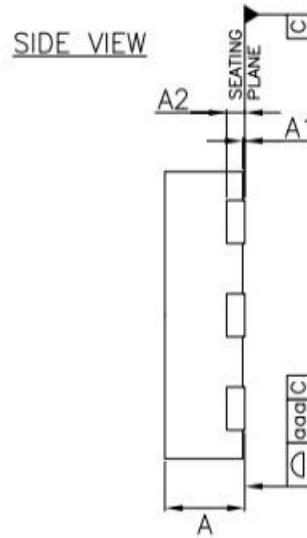
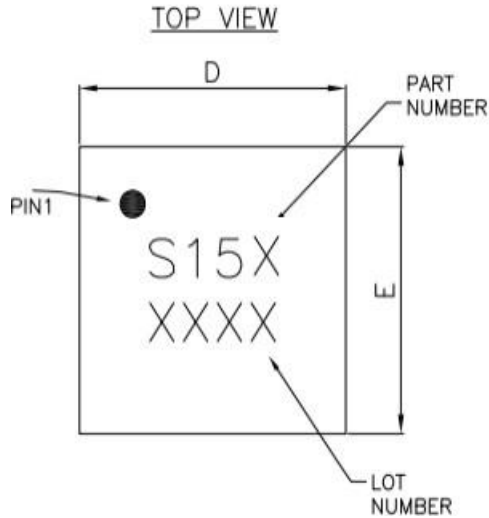
(1) Maximum reflow temperature 260° C

(2) XXXX is the lot number

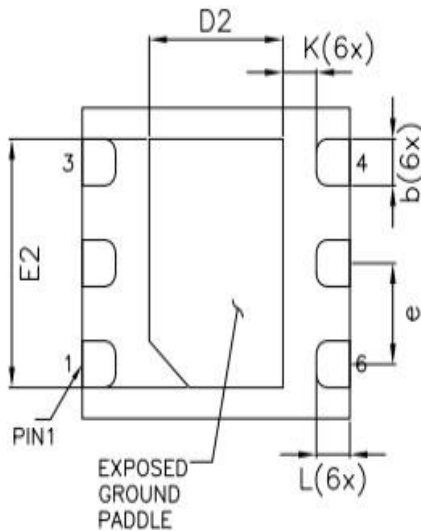
CWAT

Fixed Attenuator Series

Overall dimensions



BOTTOM VIEW



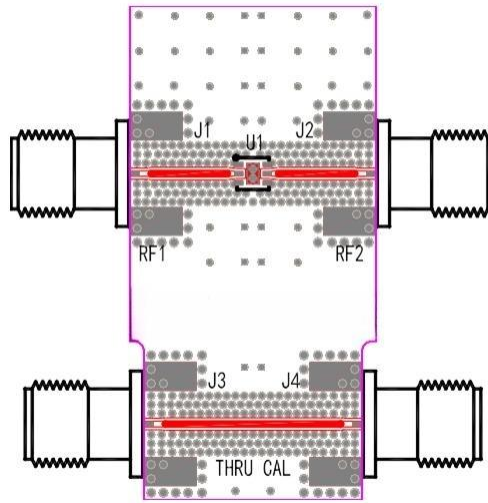
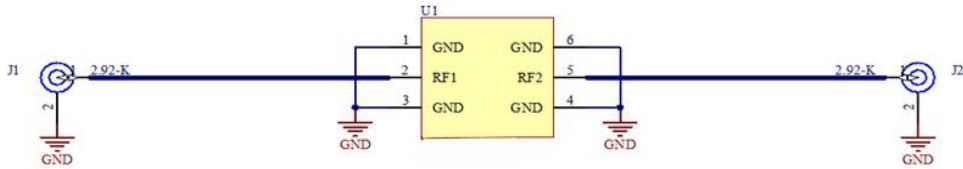
Symbol	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0.00	0.02	0.05
A2	0.20Ref		
b	0.25	0.30	0.35
D	1.95	2.00	2.05
D2	0.85	1.00	1.10
e	0.65BSC		
E	1.95	2.00	2.05
E2	1.45	1.60	1.70
K	0.20	---	---
L	0.20	0.25	0.30
aaa	0.08		

Pin Definitions	functionality	descriptive
1,3,4,6	GND	The bottom of the package must be connected to RF/DC ground.
2,5	RF1, RF2	This pin is DC coupled and matched to 50 ohms. If the input/output signals contain DC signals, capacitive isolation is required.

CWAT

Fixed Attenuator Series

evaluation board



DeCwgnator	Description
J1, J2, J3, J4	2.92-K
U1	CWAT158SP2
J1, J2, J3, J4 Recommended to use Nanjing Aowen D360B12E01-023 type SMA connector	

Circuit Board:Rogers4350B

The circuit board of the device application should be designed according to the design method of RF circuit, the signal line is designed according to 50 ohm impedance, and the ground pin of the package shell should be grounded nearby (similar to that in the figure), and there should be enough ground holes for connecting the top layer to the bottom layer grounding ground.

CWAT

Fixed Attenuator Series