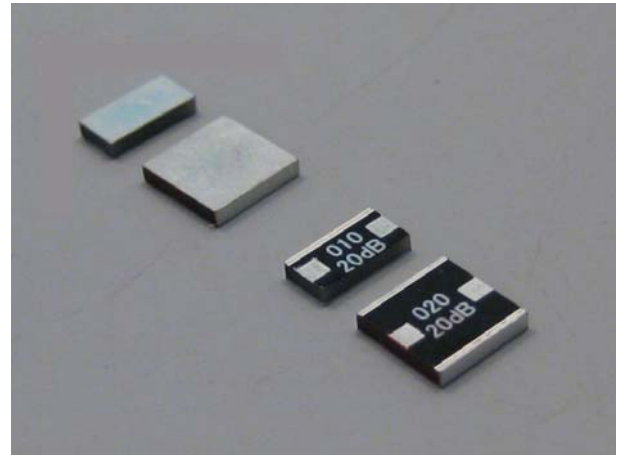


10W-150W
 SURFACE MOUNT 50 ohm
 RF POWER ATTENUATORS
 RFA010, RFA020, RFA040,
 RFA100, RFA150



Features and Applications

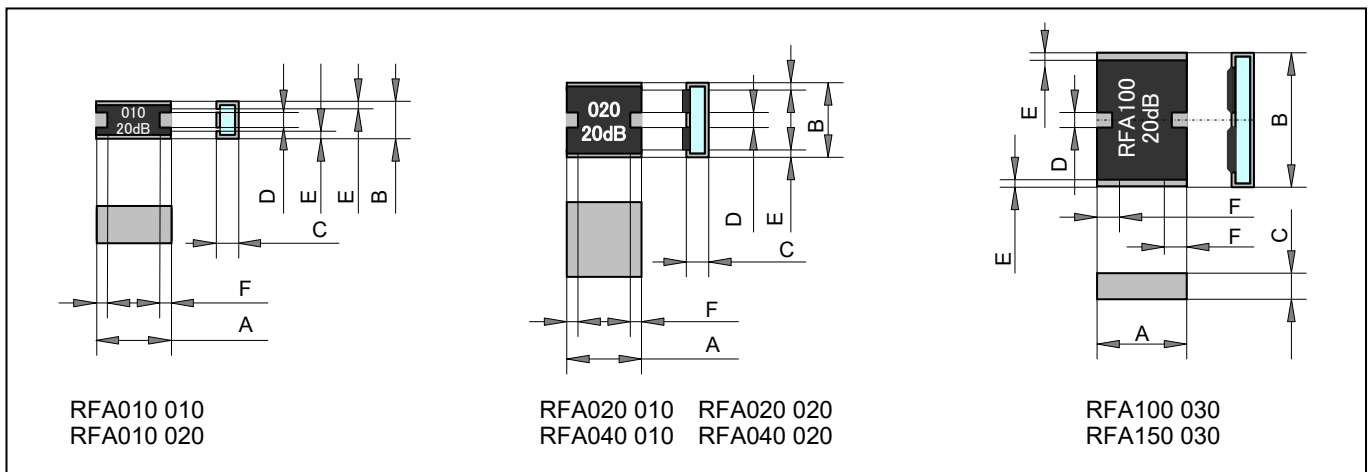
RFA010 to RFA150, 10W to 150W, surface mount small size attenuators of 10dB, 20dB and 30dB attenuation, 50ohm characteristic impedance for DC to 3GHz.

Pb free and BeO free configuration.

Long life and temperature stability of thin film technology realize better performance at a temperature range from -55C to +155C.

Applications include power detect circuit of isolator, gain control circuits, isolation circuits of power boost amplifiers at GHz, loss compensation of transmission line of data communication systems, detecting signal control of ATE-LSI test system-circuit board functional test systems, industrial measurement electronics, medical scientific electronics and many communication systems.

Dimensions (mm)



P/N	A	B	C	D	E	F	old p/n
RFA010 010	5.08+/-0.25	2.54+/-0.25	1.1 max.	1.0+/-0.3	0.2+/-0.1	(1.0)	---
RFA010 020	5.08+/-0.25	2.54+/-0.25	1.1 max.	1.0+/-0.3	0.2+/-0.1	(1.0)	---
RFA020 010	5.08+/-0.25	5.08+/-0.25	1.1 max.	1.0+/-0.3	0.2+/-0.1	(1.0)	---
RFA020 020	5.08+/-0.25	5.08+/-0.25	1.1 max.	1.0+/-0.3	0.2+/-0.1	(1.0)	---
RFA040 010	5.08+/-0.25	5.08+/-0.25	1.1 max.	1.0+/-0.3	0.2+/-0.1	(1.0)	---
RFA100 030	5.72+/-0.25	8.90+/-0.25	1.1 max.	1.1+/-0.3	0.3+/-0.1	(1.1)	RFAS100-1
RFA150 030	6.35+/-0.25	9.52+/-0.25	1.1 max.	1.1+/-0.3	0.3+/-0.1	(1.1)	RFAS150-1

SURFACE MOUNT RF POWER ATTENUATORS, 10W-150W

RFA010, RFA020, RFA040, RFA100, RFA150

Ordering Information

Type RFA100	Style 030	---	Attenuation 20dB	Code Z01	Note
RFA010	010	---	10dB	Z01	Tape Reel
RFA020	020		20dB		
RFA040			30dB		
RFA100	> 030				
RFA150	> 030				

Specifications and Performances

Model	Rated Input Power	Schematic	Impedance*2	Attenuations*1	Frequency	Note
RFA010 010	10 W	Unbalanced PAI	50 ohm	10dB, 20dB, 30dB	DC-6.0GHz	ALN
RFA010 020	10 W	Unbalanced Tee	50 ohm	10dB, 20dB, 30dB	DC-3.0GHz	ALN
RFA020 010	20 W	Unbalanced PAI	50 ohm	10dB, 20dB, 30dB	DC-3.0GHz	ALN
RFA020 020	20 W	Unbalanced Tee	50 ohm	10dB, 20dB, 30dB	DC-3.0GHz	ALN
RFA040 010	40 W	Balanced PAI	50 ohm	10dB, 20dB, 30dB	DC-3.0GHz	ALN
RFA100 030	100 W	Balanced PAI	50 ohm	10dB, 20dB, 30dB	DC-3.0GHz	ALN
RFA150 030	150 W	Balanced PAI	50 ohm	10dB, 20dB, 30dB	DC-3.0GHz	ALN

(*1) Attenuation Tolerance are +/-0.4dB at dc measurement for 20, 30dB.

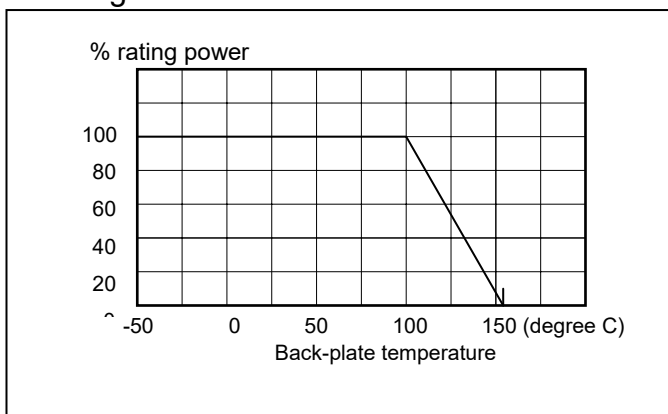
(*2) Impedance tolerance are 50 ohm +/- 2% at dc.

Note 1: Rated input wattage assume that the chip attached on proper heat-sink by solder.

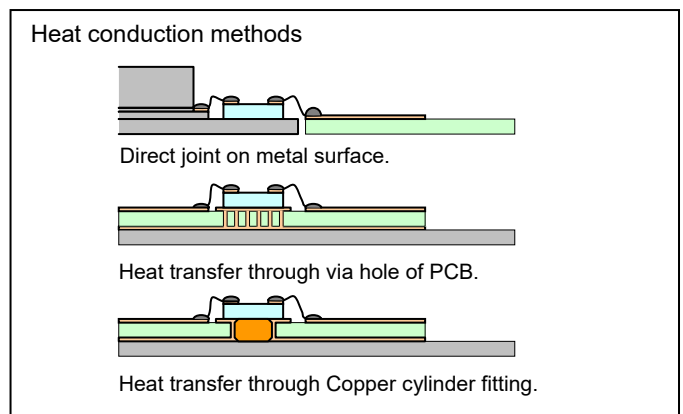
Specifications

Items	Specifications	Conditions
Tolerance of Impedance	+/- 2%	Input DC resistance in terminating output with resistor.
Tolerance of Attenuation	See above note *1.	Output DC volt in terminating out put with resistor when stable 1V DC volt source connect to input.
TC of Impedance	+/- 50ppm/K	TC of input DC resistance in terminating output with resistor.
TC of Attenuation	+/- 50ppm/K	TC of output DC volt in terminating out put with resistor when stable 1V DC volt source connect to input.
Rating Temperature	-55-100 deg C	
Soldering Heat	+/- 1%	350C, 3 seconds dipping.
Soldering capability	95% covered	
Humidity	+/- 1% impedance	Input DC resistance change Under condition of 40C temp and 90-95%RH, rating power ON-90min, OFF-30min, 1000h
Load Life	+/- 1% impedance	Input DC resistance change. Under condition of 70C temp, rating power ON-90min, OFF-30min, 1000h
Operating Temperature	-55 degC - +155 degC	
Storage Temperature	-55 degC - +155 degC	

Derating

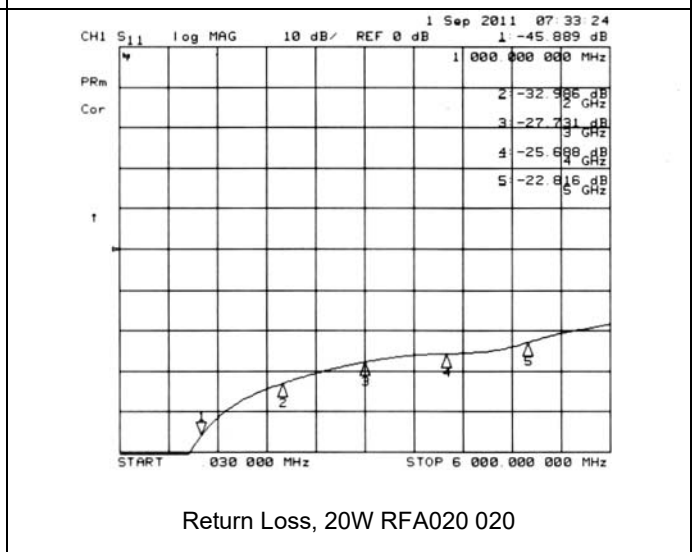
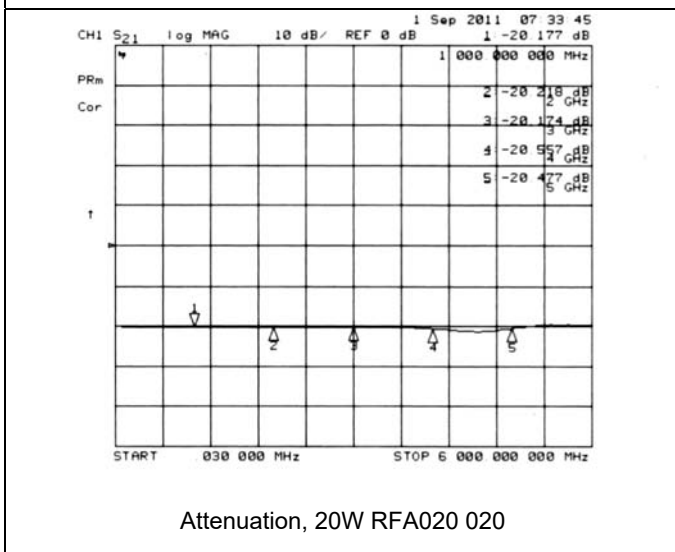
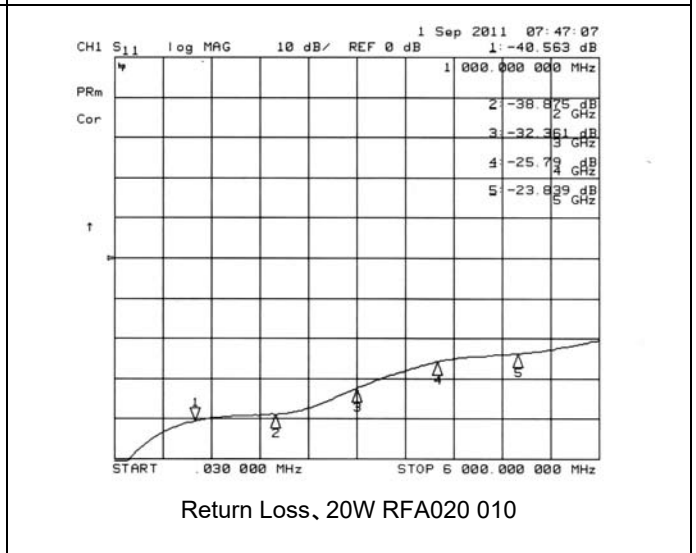
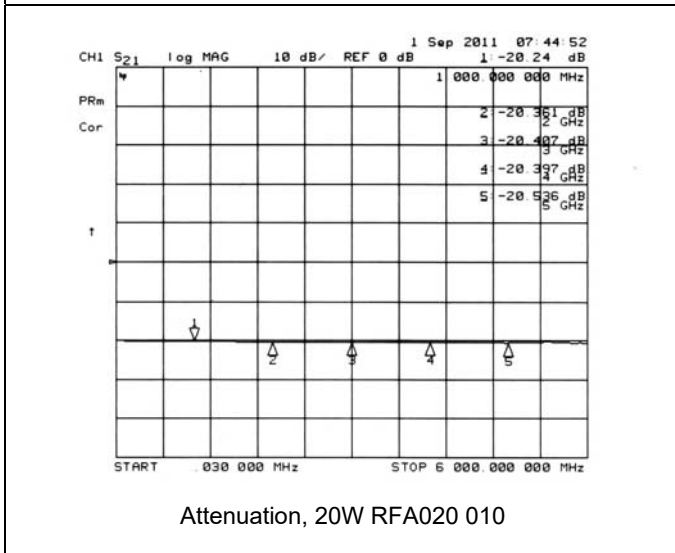
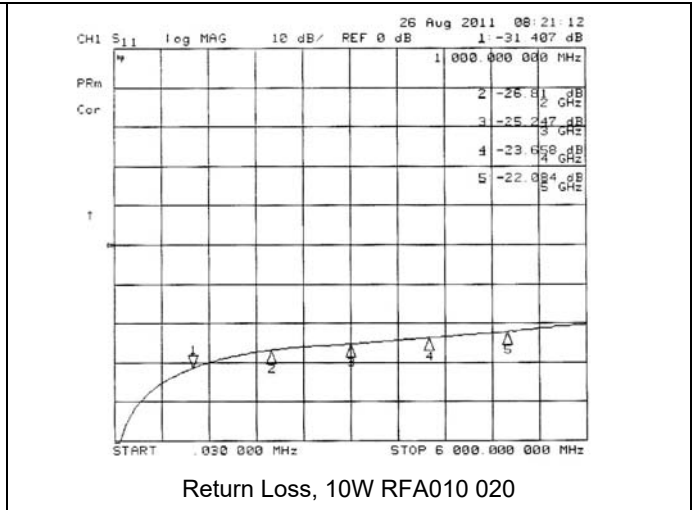
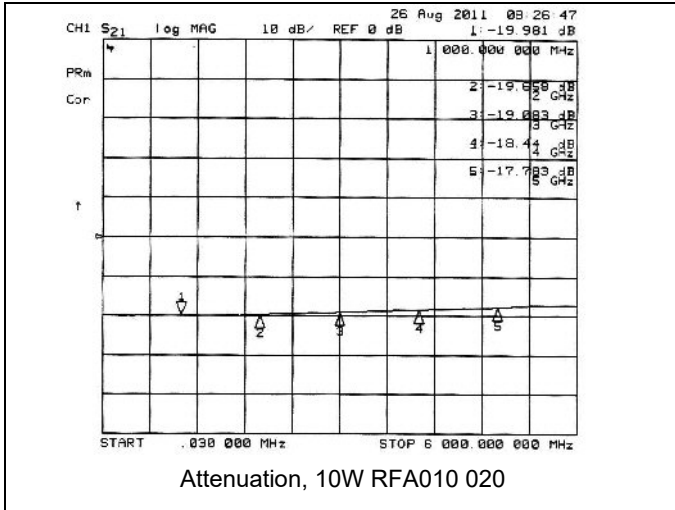


Note



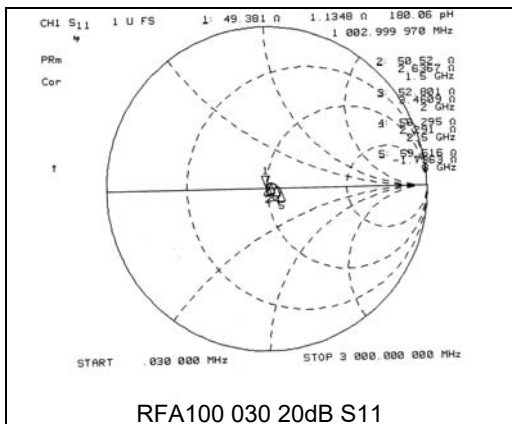
SURFACE MOUNT RF POWER ATTENUATORS, 10W-150W

RFA010, RFA020, RFA040, RFA100, RFA150



SURFACE MOUNT RF POWER ATTENUATORS, 10W-150W

RFA010, RFA020, RFA040, RFA100, RFA150



RFA100 030 20dB S11

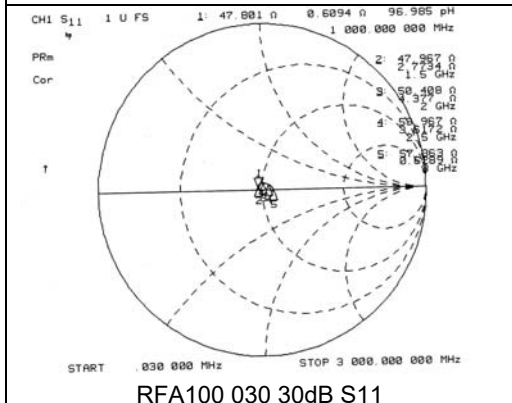
VSWR

FREQ	1GHz	1.5GHz	2GHz	2.5GHz	3GHz
AVG	1.071	1.124	1.145	1.183	1.235
STD	0.025	0.055	0.014	0.008	0.012
MAX	1.091	1.214	1.159	1.194	1.253
MIN	1.037	1.074	1.129	1.173	1.224

ATTENUATION

FREQ	1GHz	1.5GHz	2GHz	2.5GHz	3GHz
AVG	20.0	20.0	20.0	20.1	20.18
STD	0.000	0.000	0.000	0.000	0.045
MAX	20.0	20.0	20.0	20.1	20.2
MIN	20.0	20.0	20.0	20.1	20.1

RFA100 030 20dB



RFA100 030 30dB S11

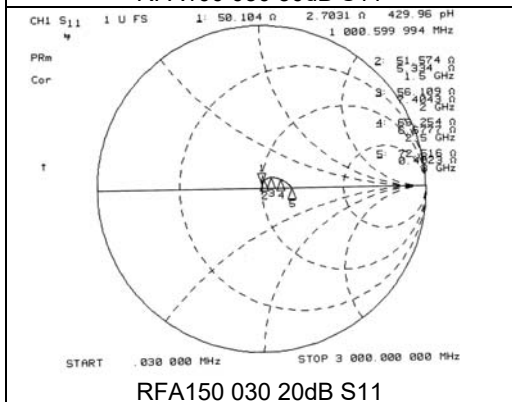
VSWR

FREQ	1GHz	1.5GHz	2GHz	2.5GHz	3GHz
AVG	1.033	1.064	1.104	1.154	1.232
STD	0.003	0.008	0.012	0.017	0.025
MAX	1.037	1.072	1.116	1.173	1.268
MIN	1.030	1.052	1.084	1.128	1.199

ATTENUATION

FREQ	1GHz	1.5GHz	2GHz	2.5GHz	3GHz
AVG	30.0	30.0	29.98	29.98	30.0
STD	0.000	0.000	0.045	0.045	0.000
MAX	30.0	30.0	30.0	30.0	30.0
MIN	30.0	30.0	29.9	29.9	30.0

RFA100 030 30dB



RFA150 030 20dB S11

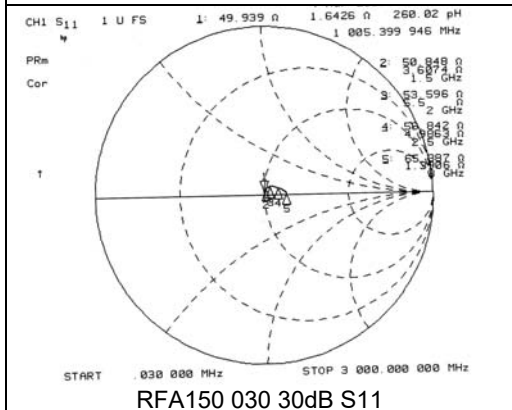
VSWR

FREQ	1GHz	1.5GHz	2GHz	2.5GHz	3GHz
AVG	1.059	1.098	1.138	1.187	1.264
STD	0.017	0.014	0.005	0.009	0.030
MAX	1.077	1.115	1.145	1.198	1.297
MIN	1.040	1.082	1.133	1.179	1.236

ATTENUATION

FREQ	1GHz	1.5GHz	2GHz	2.5GHz	3GHz
AVG	20.0	20.2	20.24	20.3	20.5
STD	0.00	0.00	0.055	0.00	0.00
MAX	20.0	20.2	20.3	20.3	20.5
MIN	20.0	20.2	20.2	20.3	20.5

RFA150 030 20dB



RFA150 030 30dB S11

VSWR

FREQ	1GHz	1.5GHz	2GHz	2.5GHz	3GHz
AVG	1.048	1.089	1.137	1.193	1.265
STD	0.044	0.044	0.031	0.002	0.048
MAX	1.127	1.168	1.193	1.195	1.290
MIN	1.028	1.068	1.121	1.190	1.180

ATTENUATION

FREQ	1GHz	1.5GHz	2GHz	2.5GHz	3GHz
AVG	30.0	30.4	30.52	30.74	30.6
STD	0.00	0.071	0.045	0.055	0.122
MAX	30.0	30.5	30.6	30.8	30.7
MIN	30.0	30.3	30.5	30.7	30.4

RFA150 030 30dB