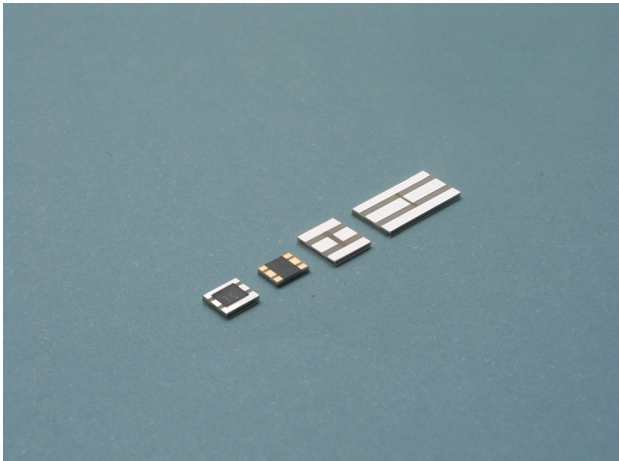


SURFACE MOUNT  
RF POWER ATTENUATORS

RFA53, RFA54, RFA55, RFA68,  
RFA85, RFA37



Features and Applications

1.5GHz-30W and 4GHz-1/4W surface mount small size attenuators of 50ohm characteristic impedance.

RFA68D, 1.5GHz-30W (attach to heat sink directly) small size power attenuator, Pb free / BeO free configuration, RFA68D has durable power consumption in power isolators and circulators.

RFA53S and RFA54D 4GHz-1/4W power and high durability against pulse / EMI accidents in small signal applications.

Face down configuration on strip line show better return loss characteristics.

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

Applications include 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 miscellaneous communication systems.

Specifications and Performances

Model	Type	Impedance (*2)	Lead	Attenuation (*1)	Frequency	Rate Power
RFA-68DD	Balance heatsink	50Ω±1Ω		10, 20, 30dB	DC- 1GHz	30W
RFA-53SD	Un-balancecoaxial	50Ω±1Ω		1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 4GHz	0.25W
RFA-53SDL	Un-balance smd	50Ω±1Ω	Leads	1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 4GHz	0.25W
RFA-54DD	Balance coaxial	50Ω±1Ω		1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 4GHz	0.25W
RFA-54DDL	Balance smd	50Ω±1Ω	Leads	1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 4GHz	0.25W
RFA-55SD	Un-balance smd	50Ω±1Ω		1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 4GHz	0.25W
RFA-55DD	Balance smd	50Ω±1Ω		1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 4GHz	0.25W
RFA-84SD	Un-balancecoaxial	50Ω±1Ω		1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 1GHz	0.50W
RFA-84SDL	Un-balance smd	50Ω±1Ω	Leads	1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 1GHz	0.50W
RFA-85SD	Un-balancecoaxial	50Ω±1Ω		1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 1GHz	0.50W
RFA-85SDL	不平衡表面実装	50Ω±1Ω	Leads	1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 1GHz	0.50W
RFA-85DD	平衡同軸用	50Ω±1Ω		1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 1GHz	0.50W
RFA-85DDL	Un-balance smd	50Ω±1Ω	Leads	1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 1GHz	0.50W
RFA-37DD	平衡同軸用	50Ω±1Ω		1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 1GHz	1.00W
RFA-37DDL	Balance smd	50Ω±1Ω	Leads	1,2,3,4,5,6,7,8,9,10,20,30,40 dB	DC- 1GHz	1.00W

(\*1) Attenuation Tolerance at DC areas shown in following,  
1,2,3,4,5,6db: +/-0.2dB, 7,8,9,10dB: +/-0.3dB, 20,30,40dB: +/-0.4dB

(\*2) 75 ohm characteristic impedance are available, please replace 7<sup>th</sup> character to C from D.

SURFACE MOUNT RF POWER ATTENUATORS

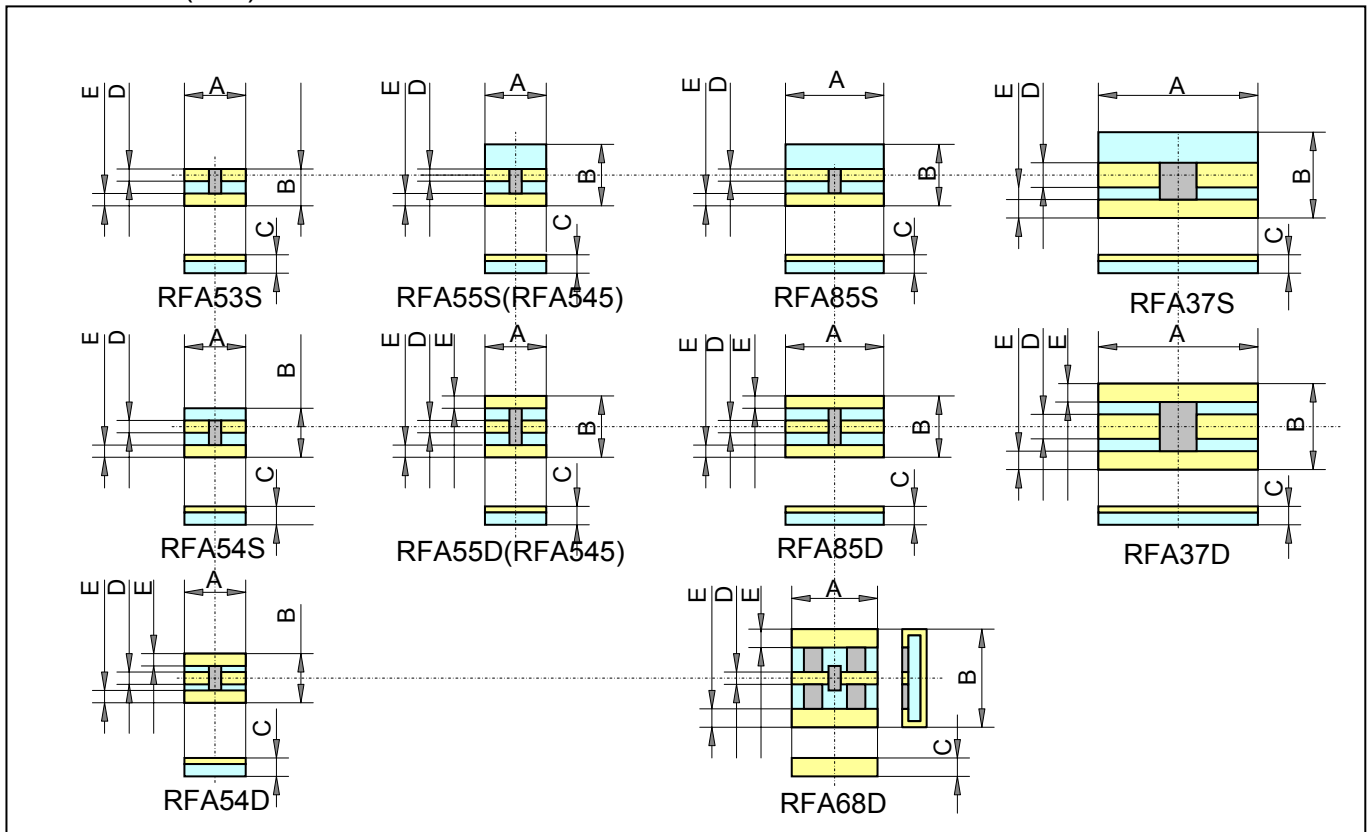
RFA53, RFA54, RFA55, RFA68, RFA85, RFA37

Ordering Information

Ordering P/N	Type	Characteristic Impedance	Attenuation	Tolerance of Impedance	Rating Power
RFA53SD15dBGZ00	RFA53SD	50ohm	15dB	G(2%)	1/4W
RFA54DD20dBGZ00	RFA54DD	50ohm	20dB	G(2%)	1/4W
RFA85DD20dBGZ00	RFA85DD	50ohm	20dB	G(2%)	1W
RFA68DD10dBGZ00	RFA68DD	50ohm	30dB	G(2%)	30W

Note 1: Rating 30W of RFA58DD assume that the chip attached on proper heat sink by solder.

Dimensions (mm)



Type	Power	A	B	C	D	E
RFA53	1/4W	5.00	2.70	0.70	1.20	0.80
RFA54S	1/2W	5.00	3.80	0.70	1.20	0.80
RFA54D	1/2W	5.00	3.80	0.70	1.20	0.80
RFA55S(RFA545S)	1/2W	5.00	4.50	0.70	1.20	1.00
RFA55D(RFA545D)	1/2W	5.00	4.50	0.70	1.20	1.00
RFA85S	1W	8.00	5.25	0.70	1.40	1.10
RFA85D	1W	8.00	5.25	0.70	1.40	1.10
RFA68D (Power)	30W	6.70	8.65	1.05	1.00	0.80
RFA37S	2W	13.00	7.00	0.70	2.00	1.40
RFA37D	2W	13.00	7.00	0.70	2.00	1.40

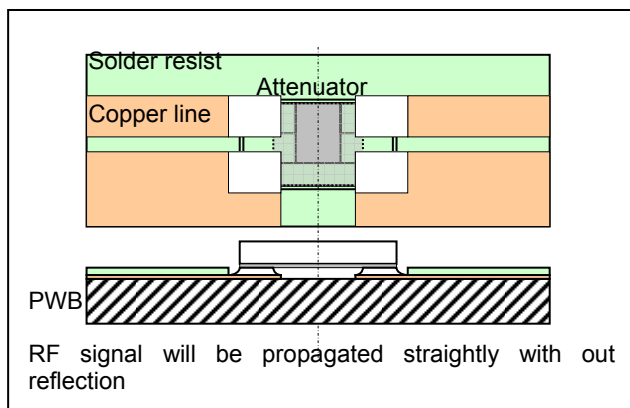
**SURFACE MOUNT RF POWER ATTENUATORS**  
**RFA53, RFA54, RFA55, RFA68, RFA85, RFA37**

**Specifications**

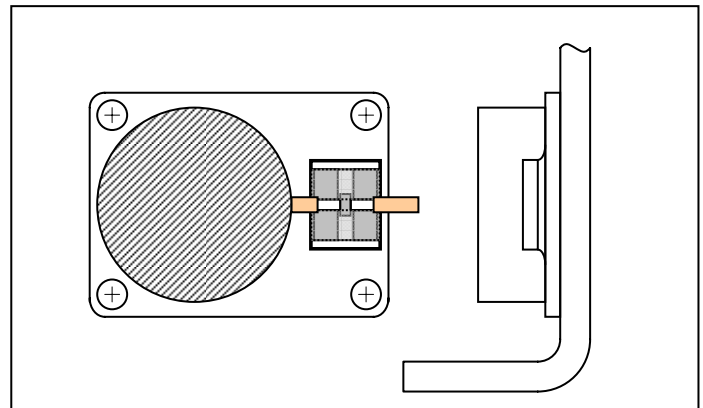
Items	Specifications	Test Conditions
Tolerance of Impedance	+/- 2%(G)	Input DC resistance in terminating output with resistor.
Tolerance of Attenuation	See Bottom of first page.	Output DC volt in terminating out put with resistor when stable 1V DC volt source connect to input.
TC of Impedance	+/- 50ppm/C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

Note: Above specifications are applied to RFA53S, RFA54D, RFA85S, RFA85D, RFA37S and RFA37D.

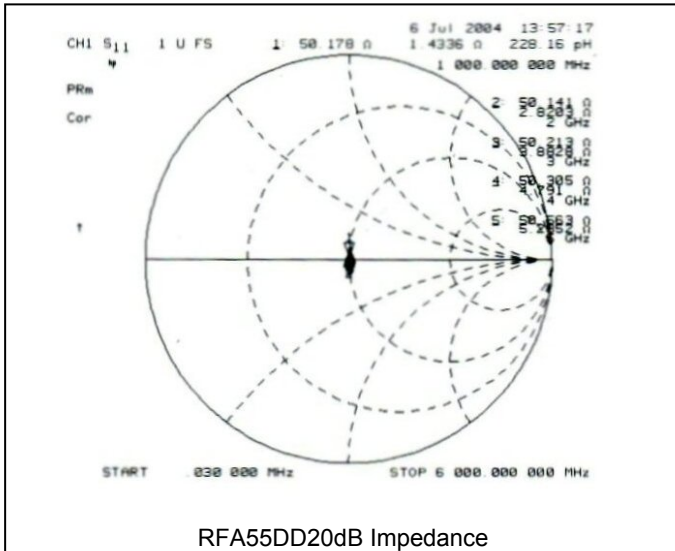
**Face Down Installation**



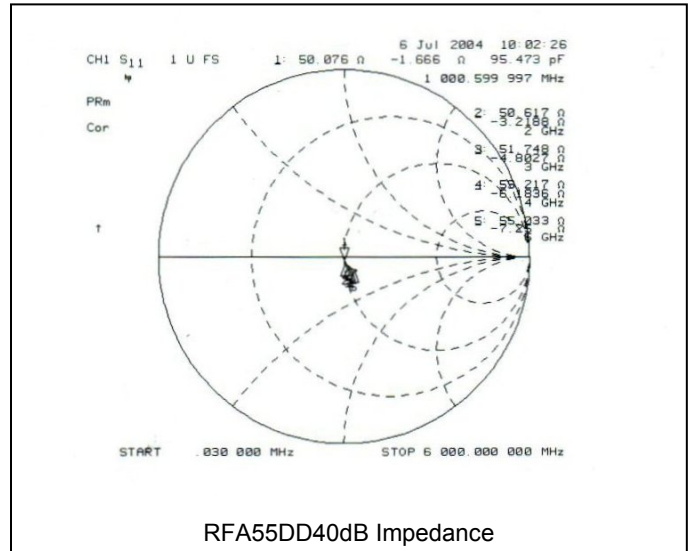
**30W Power Attenuator**



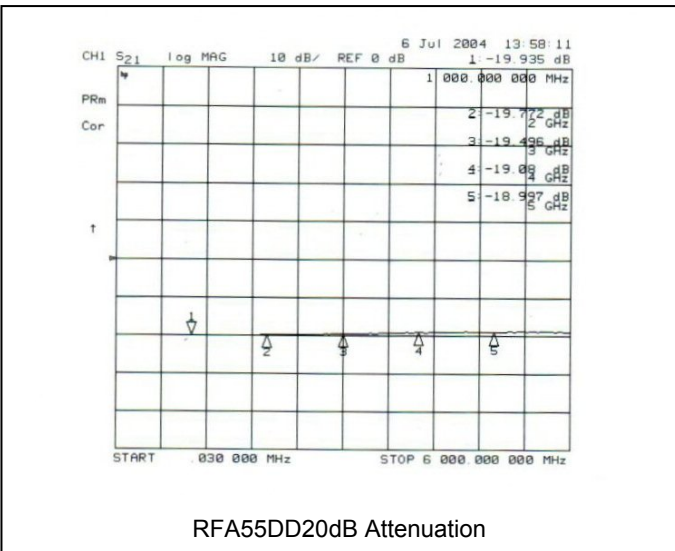
SURFACE MOUNT RF POWER ATTENUATORS  
 RFA53, RFA54, RFA55, RFA68, RFA85, RFA37



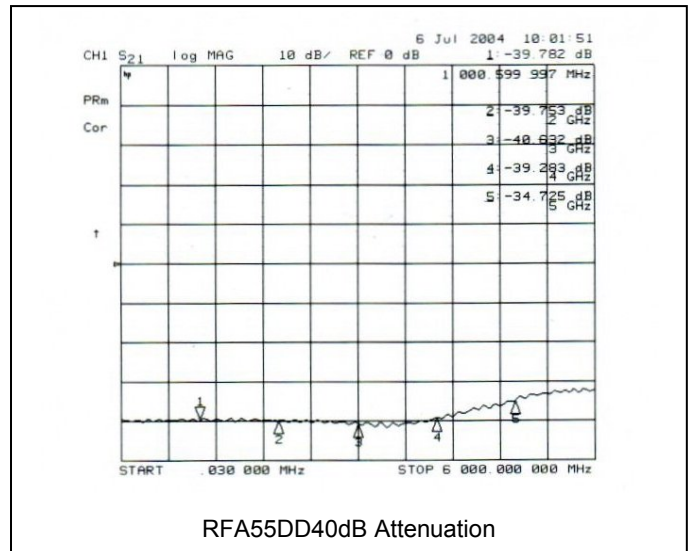
RFA55DD20dB Impedance



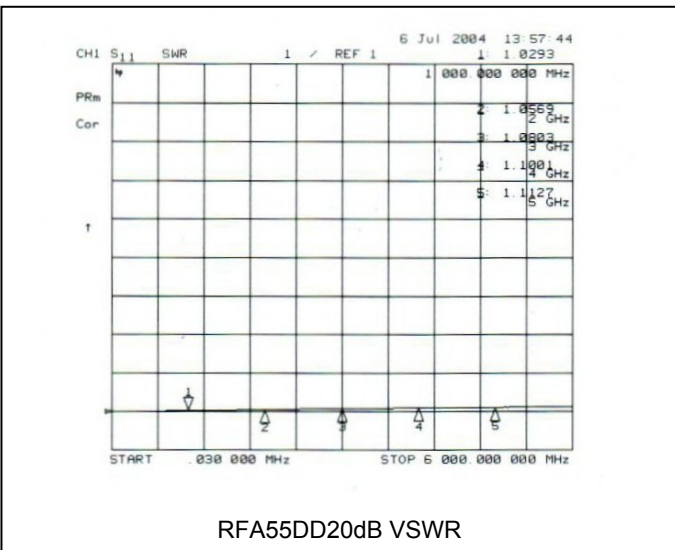
RFA55DD40dB Impedance



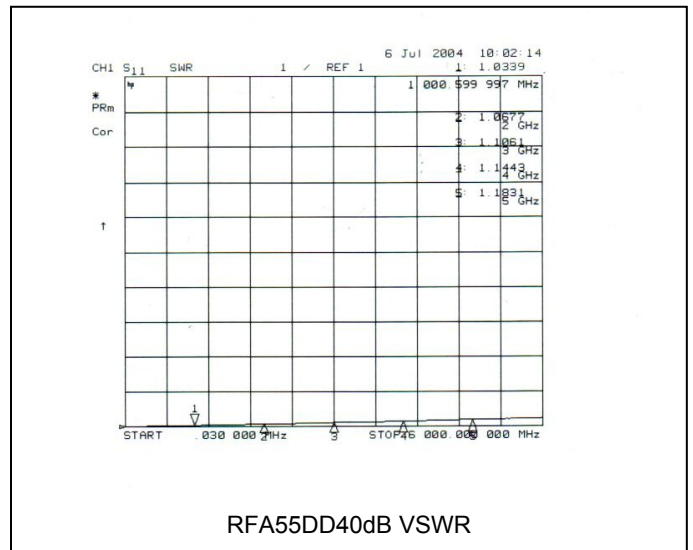
RFA55DD20dB Attenuation



RFA55DD40dB Attenuation



RFA55DD20dB VSWR



RFA55DD40dB VSWR