

Product Features

- GaAs MMIC
- Very Low Distortion
- Guaranteed Broadband Power Gain
- Heat sink 99.9% copper, Ag or gold plate
- Excellent Thermal Conductivity
- Single Supply Voltage@24V
- Low DC Power Consumption
- Internal TVS
- No External Circuit Needed

Application

- CATV Trunk Amplifier
- Optical Drive Amplifier



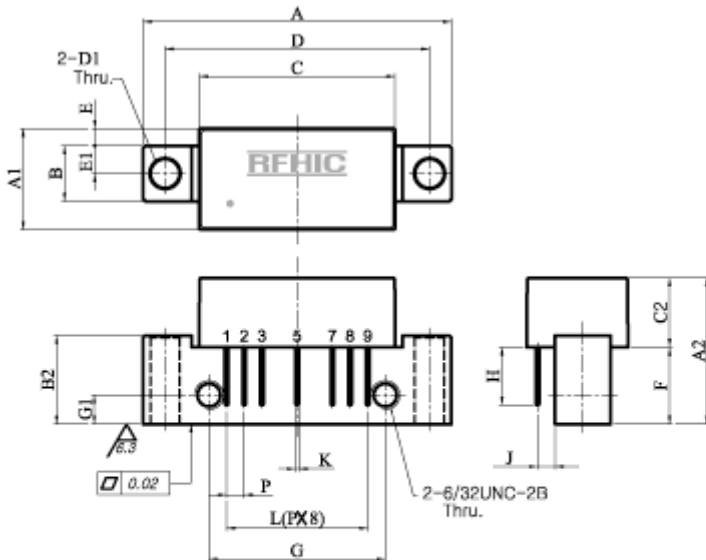
Description

The 2F8723P(2F3632) often referred to as push pull, is designed specifically for up to 870MHz CATV systems as amplifiers in trunk and line extender applications. This hybrid dynamic range amplifier module operates with a single voltage supply of 24V(DC). The 2F8723P(2F3632) uses over-voltage suppressor inside.

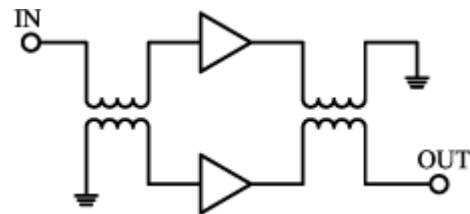
Quick Reference Data

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
G _p	Power gain	F = 50 MHz	22.5	23.5	dB
		F = 870 MHz	23.5	-	dB
I _{tot}	Total current consumption (DC)	V _{cc} = 24V	-	240	mA

Dimensions in mm



Functional Diagram



Pin No.	Function
1	RF Input
2, 3, 7, 8	Ground
5	V _{cc}
9	RF Output

DIM	MIN	TYP	MAX	DIM	MIN	TYP	MAX	DIM	MIN	TYP	MAX	DIM	MIN	TYP	MAX
A	44.3	44.4	44.6	C	27.40	27.80	28.23	E1	3.87	4.00	4.02	J	2.44	2.54	2.64
A1	14.5	14.7	14.9	C2	9.7	9.9	10.1	F	10.8	11.1	11.3	K	∅0.47	∅0.50	∅0.53
A2	20.5	20.7	21.1	D	38.05	38.1	38.15	G	25.35	25.40	25.45	L	20.10	20.32	20.55
B	7.95	8.00	8.05	D1	∅3.95	∅4.0	∅4.05	G1	4.15	4.20	4.25	P	2.44	2.54	2.64
B2	12.75	12.80	12.85	E	2.5	2.6	2.7	H	8.2	8.3	8.4				

Limiting Values

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_i	RF input voltage	-	+70	dBmV
T_{stg}	Storage temperature	-40	+100	°C
T_{mb}	Operating mounting base temperature	-20	+100	°C

Specifications

Bandwidth 45 to 870MHz; $V_{CC} = 24V$; $T_{case} = 25^\circ C$; $Z_S = Z_L = 75\Omega$

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
G_p	Power gain	$f = 45$ MHz	22.5	23.0	23.5	dB
		$f = 870$ MHz	23.5	24.0	25.0	dB
SL	Slope cable equivalent	$f = 45$ to 870 MHz	-	1.0	-	dB
FL	Flatness of frequency response	$f = 45$ to 870 MHz	-	-	0.5	dB
S_{11}	Input return loss	$f = 45$ to 80 MHz	20.0	-	-	dB
		$f = 80$ to 160 MHz	20.0	-	-	dB
		$f = 160$ to 320 MHz	19.0	-	-	dB
		$f = 320$ to 640 MHz	18.0	-	-	dB
		$f = 640$ to 860 MHz	16.0	-	-	dB
S_{22}	Output return loss	$f = 45$ to 80 MHz	20.0	-	-	dB
		$f = 80$ to 160 MHz	20.0	-	-	dB
		$f = 160$ to 320 MHz	19.0	-	-	dB
		$f = 320$ to 640 MHz	18.0	-	-	dB
		$f = 640$ to 860 MHz	16.0	-	-	dB
S_{21}	Phase response	$f = 50$ MHz	-	-171	-	deg
CTB	Composite triple beat	135 channel flat; $V_o = 40$ dBmV	-	-65	-60	dB
X_{mod}	Cross modulation	135 channel flat; $V_o = 40$ dBmV	-	-60	-55	dB
CSO	Composite second order distortion	135 channel flat; $V_o = 40$ dBmV	-	-66	-63	dB
d_2	Second order distortion	Note 1	-	-59	-57	dB
		Note 2	-	-55	-53	dB
		Note 3	-	-51	-50	dB
V_o	Output voltage	$d_{im} = -60$ dB; Note 4	63	-	-	dBmV
		$d_{im} = -60$ dB; Note 5	63	-	-	dBmV
		$d_{im} = -60$ dB; Note 6	62	-	-	dBmV
F	Noise Figure	$f = 45$ MHz	-	4.5	-	dB
		$f = 550$ MHz	-	4.6	-	dB
		$f = 750$ MHz	-	4.8	-	dB
		$f = 860$ MHz	-	4.9	-	dB
I_{tot}	Total current consumption (DC)		200	220	240	mA

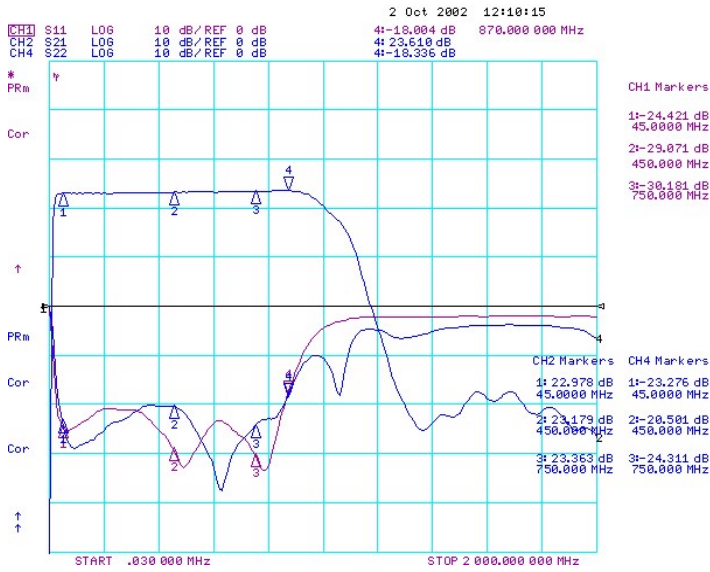
NOTE

- $f_p=55.25$ MHz; $V_p=60$ dBmV; $f_i=493.25$ MHz; $V_i=60$ dBmV; measured at $f_p+f_i=548.5$ MHz
- $f_p=55.25$ MHz; $V_p=60$ dBmV; $f_i=691.25$ MHz; $V_i=60$ dBmV; measured at $f_p+f_i=746.5$ MHz
- $f_p=55.25$ MHz; $V_p=60$ dBmV; $f_i=805.25$ MHz; $V_i=60$ dBmV; measured at $f_p+f_i=860.5$ MHz
- $f_p=540.25$ MHz; $V_p=V_o$; $f_i=547.25$ MHz; $V_i=V_o-6$ dB; $f_r=549.25$ MHz; $V_r=V_o-6$ dB; measured at $f_p+f_i-f_r=538.25$ MHz
- $f_p=740.25$ MHz; $V_p=V_o$; $f_i=747.25$ MHz; $V_i=V_o-6$ dB; $f_r=749.25$ MHz; $V_r=V_o-6$ dB; measured at $f_p+f_i-f_r=738.25$ MHz
- $f_p=851.25$ MHz; $V_p=V_o$; $f_i=858.25$ MHz; $V_i=V_o-6$ dB; $f_r=860.25$ MHz; $V_r=V_o-6$ dB; measured at $f_p+f_i-f_r=849.25$ MHz
- The module normally operates at $V_{CC}=24V$, but is able to withstand supply transients up to 28V

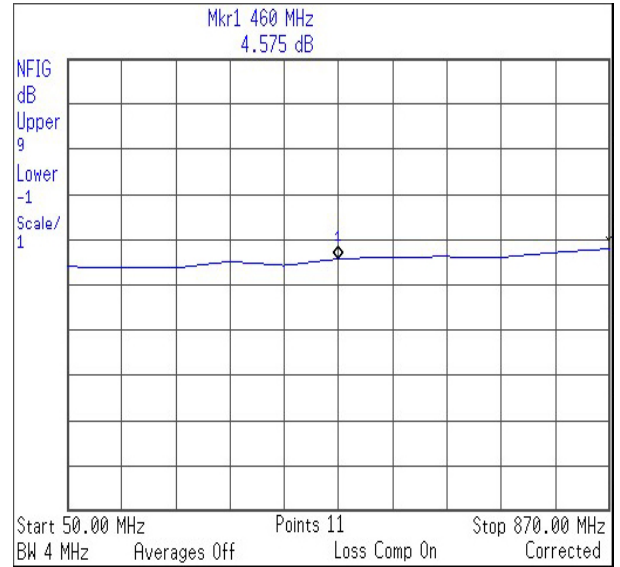
CATV Line Amplifier 2F8723P(2F3632)



S-Parameters



Noise Figure

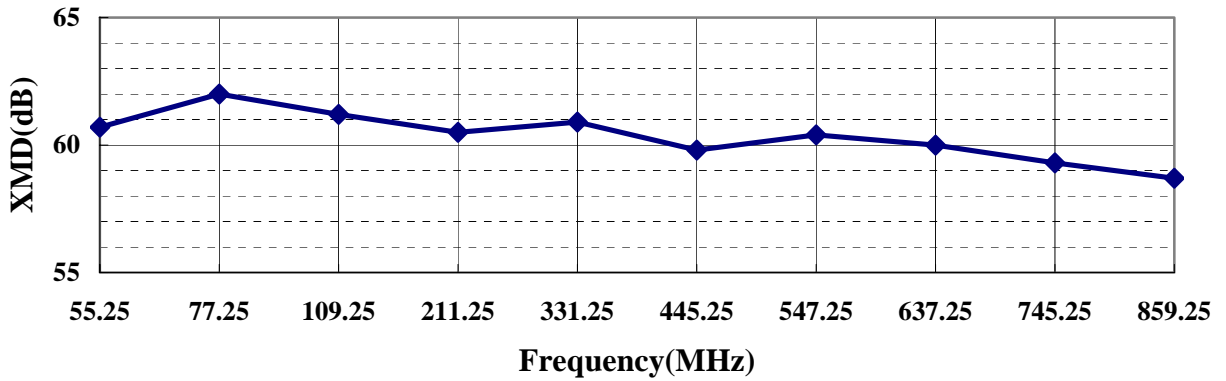


Multi - Tone Test 135ch@+40dBmV 2F8723P(2F3632)

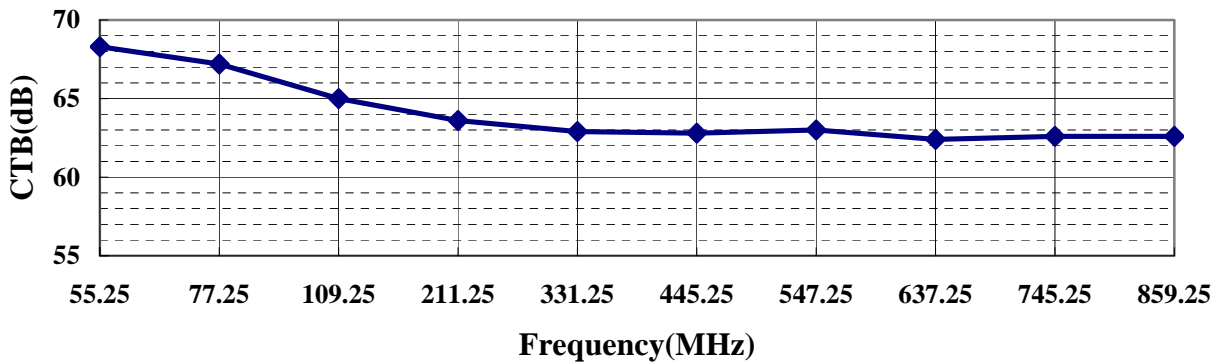
Level: +40dBmV		Tilt: 135CH FLAT									
FRQ	XMD(NCTA)	CTB_RAW	CTB_COR	N-FLR	CSU_RAW	CSU_COR	CSU_FRQ	CSL_RAW	CSL_COR	CSL_FRQ	
55.25	60.7	67.6	68.3	86.2	79.5	82	56	67.1	67.2	54	
77.25	62	66.8	67.2	86.7	69.1	69.3	78	82.8	87.2	76.62	
109.25	61.2	64.7	65	86.5	81.1	85.5	110	70.8	71.1	108	
211.25	60.5	63.4	63.6	85.3	74.1	74.9	212.5	72.3	72.8	209.99	
331.25	60.9	62.6	62.9	84.5	71.3	71.7	332.5	69.1	70.4	329.99	
445.25	59.8	62.5	62.8	84.6	70.5	70.9	446.5	68.8	69.1	444	
547.25	60.4	62.6	63	83.2	69.6	70	548.49	67.3	67.5	545.99	
637.25	60	62.1	62.4	83.3	69.1	69.4	638.5	65.6	65.7	635.99	
745.25	59.3	62.2	62.6	82.5	67.6	67.9	746.49	65.1	65.3	743.99	
859.25	58.7	62.1	62.6	81.2	64	64.1	860.49	71.8	72.9	858.49	
Min	58.7	62.1	62.4	81.2	64	64.1	56	65.1	65.3	54	
Max	62	67.6	68.3	86.7	81.1	85.5	860.49	82.8	87.2	858.49	

MSG Test Data

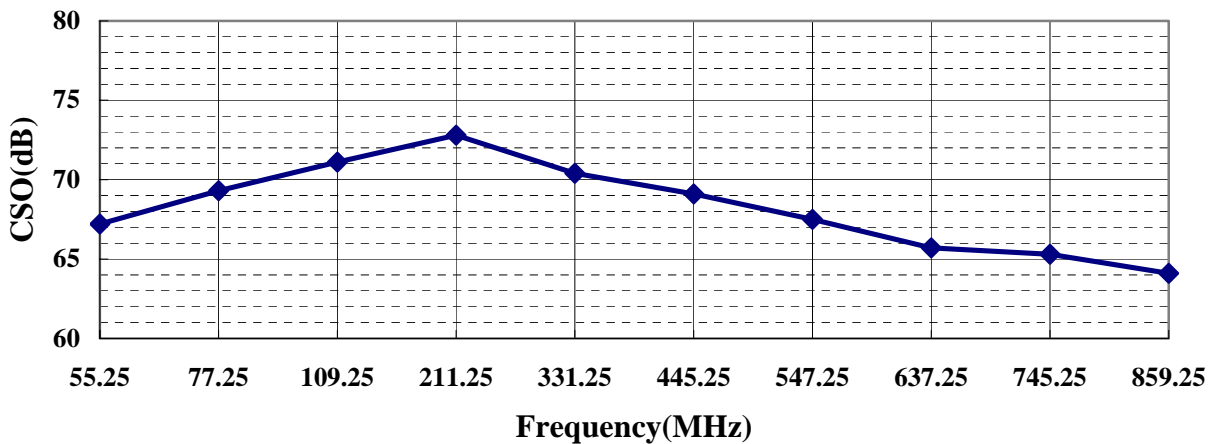
XMD vs Frequency; Vout=+40dBmV NCTA 135ch flat



CTB vs Frequency; Vout=+40dBmV NCTA 135ch flat

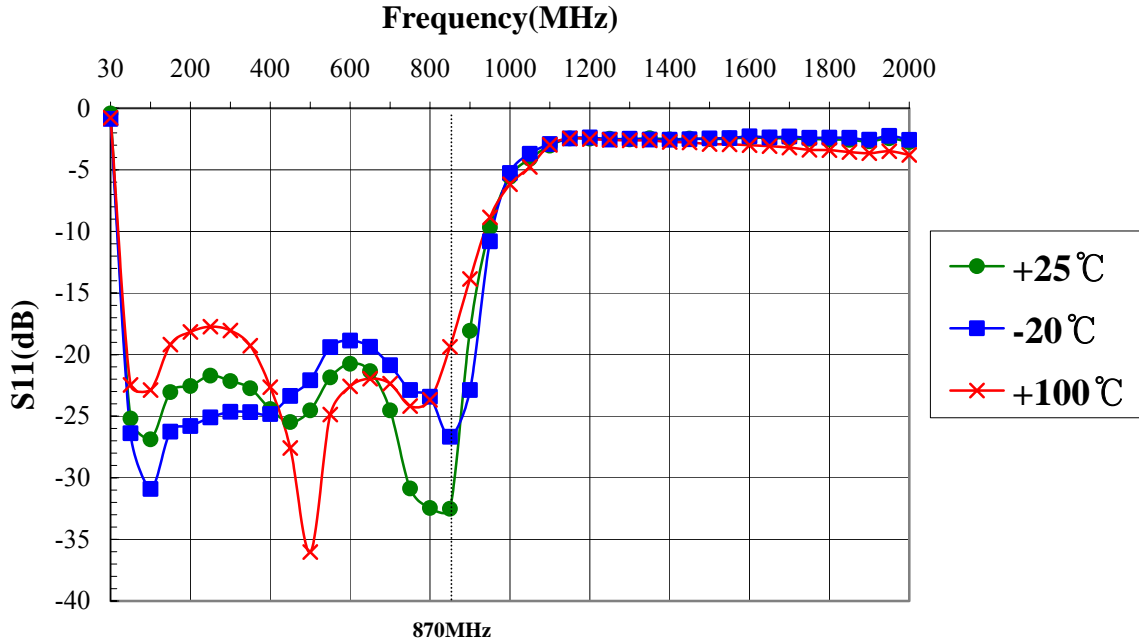


CSO vs Frequency; Vout=+40dBmV NCTA 135ch flat

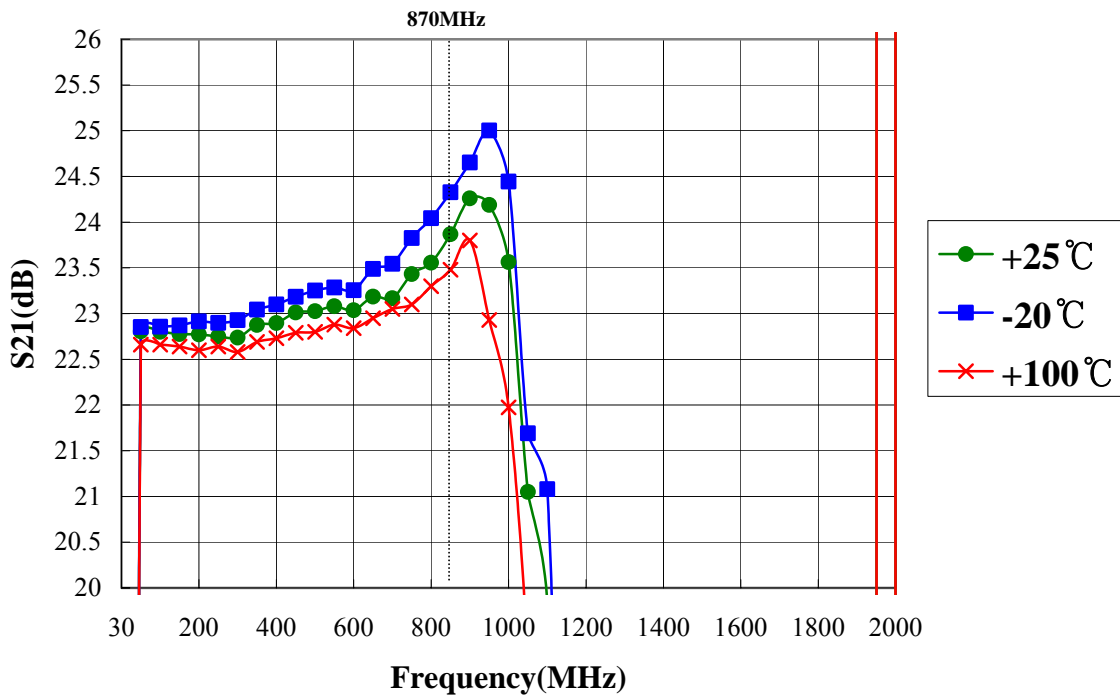


Temperature Test

S11 vs Frequency

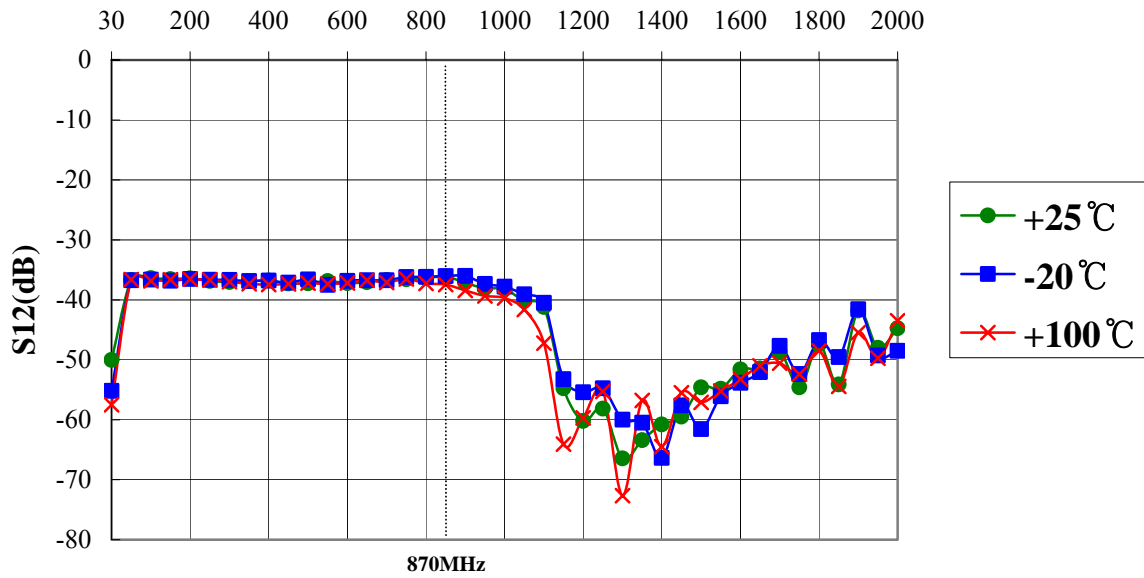


S21 vs Frequency



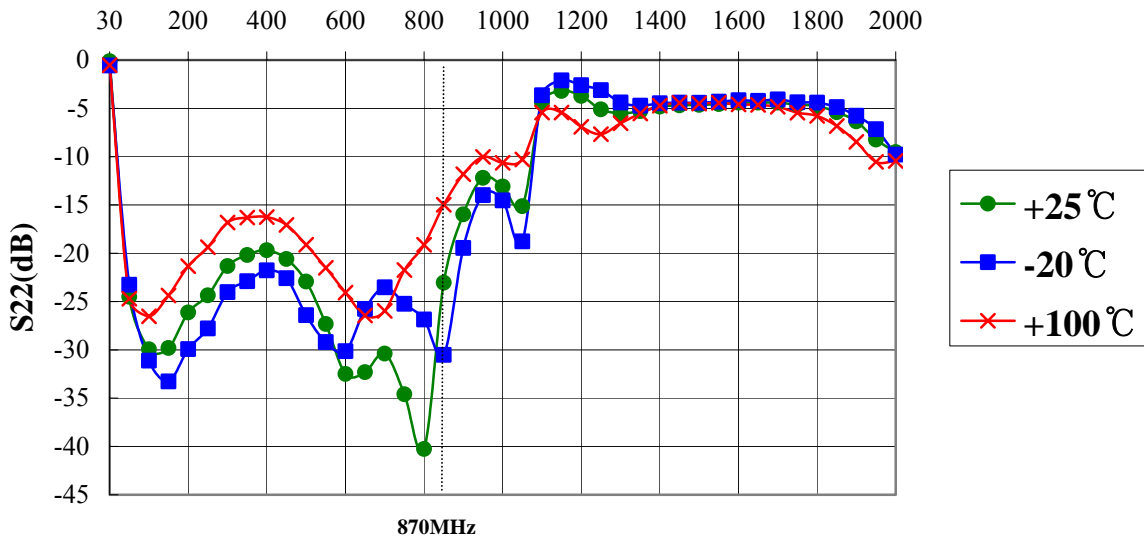
S12 vs Frequency

Frequency(MHz)

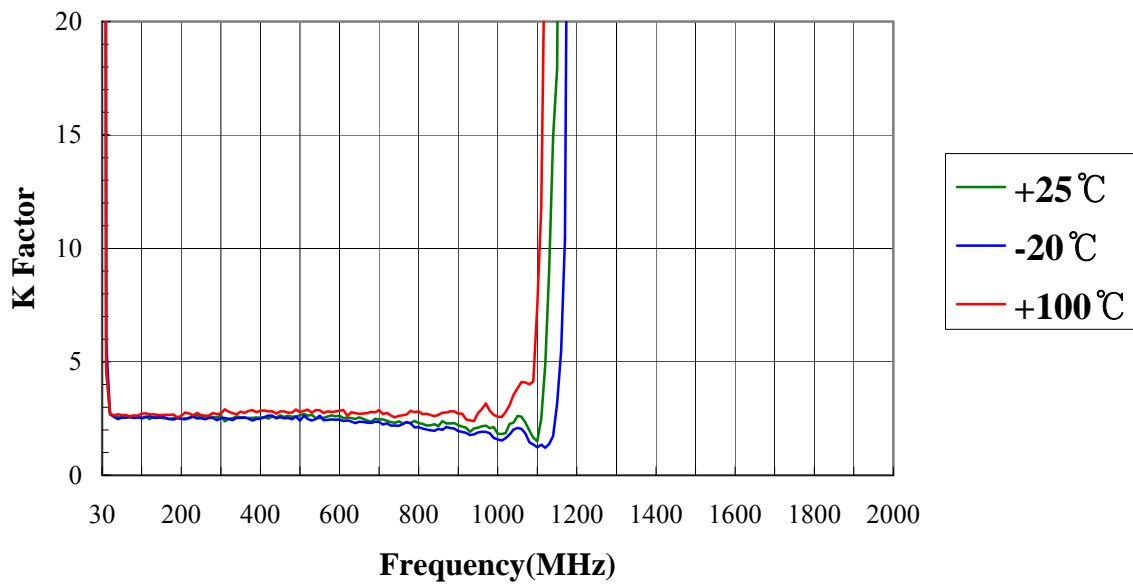


S22 vs Frequency

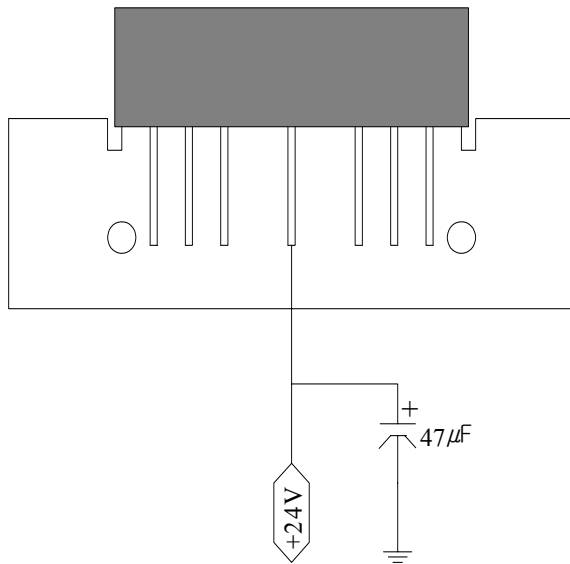
Frequency(MHz)



K Factor vs Frequency



APPLICATIONS



1. On the power input port (Pin#5), use 47uF/35V capacitor GND is recommends
2. Heat sink should be placed as tight as possible to the metal case.
3. Suitable for safely handling electrostatic-sensitive devices.
 - Person at a workbench should be earthed via a wrist strap and a resistor.
 - All mains-powered equipment should be connected to the mains via an earth-leakage switch.
 - Equipment cases should be grounded.
 - Relative humidity should be maintained between 40% and 50%.
 - An ionizer is recommended.
 - Keep static materials, such as plastic envelopes and plastic trays etc., away from the workbench.
4. One must put the power off, before adjusting the in/output matching of the system.
5. Pay close attention to the input voltage not to over power the hybrid.
6. Do not open the Plastic cover to change the matching inside the hybrid. Once opened, RFHIC will not be responsible for the hybrid.