

AMPLIFIERS

Monolithic, Broadband 50 Ω
DC to 8 GHz

MICRO-X PLASTIC PACKAGE

ERA-SM
Case WW107



MODEL PREFIX	FREQ. (MHz)	GAIN, TYPICAL (dB)							MAXIMUM POWER (dBm)		DYNAMIC RANGE,		VSWR (:1)				ABSOLUTE MAX. RATING		DC OPERATING POWER	
		OVER FREQUENCY, GHz							Output (1 dB Comp.) Typ.	Input (no dmg)	NF (dB) Typ.	IP3 (dBm) Typ.	In DC-3 GHz	3-f _U GHz	Out DC-3 GHz	3-f _U GHz	I (mA)	P (mW)	Current (mA)	Device Volt Typ.

LOW POWER up to +13.5 dBm output NF from 2.8 dB

@ 2 GHz										@ 2 GHz										
ERA-8SM	DC-2000	31.5	25.0	19.0	15.0	12.0	—	—	+10.5	+13	3.1	+21.5	1.4	1.8	1.8	2.2	65	250	36	3.7
ERA-33SM	DC-3000	19.3	18.7	17.4	15.9	—	—	—	+13.5	+13	3.3	+30.3	1.2	—	1.25	—	75	330	40	4.3
ERA-3SM	DC-3000	22.1	21.0	18.7	16.4	—	—	—	+12.5	+13	2.8	+25.0	1.25	—	1.3	—	75	330	35	3.2
ERA-2SM	DC-6000	16.4	15.8	14.9	13.9	12.5	10.7	—	+13.0	+15	3.3	+29.0	1.4	1.2	1.2	1.4	75	330	40	3.4
ERA-1SM	DC-8000	12.3	12.1	11.8	10.9	9.7	7.9	8.2	+12.0	+15	4.3	+28.0	1.2	1.3	1.2	1.4	75	330	40	3.4
ERA-21SM	DC-8000	14.2	13.9	13.2	12.2	10.8	8.7	8.9	+12.6	+15	3.3	+28.0	1.1	1.6	1.3	1.9	75	330	40	3.5

MEDIUM POWER up to +18.4 dBm output NF from 3.5 dB

										@ 1 GHz		@ 1 GHz											
ERA-50SM	DC-2000	20.7	19.4	18.3	—	—	—	—	—	+17.2	+13	3.5	+32.5	1.3	—	1.2	—	120	650	60	4.4		
ERA-4SM	DC-4000	14.3	14.0	13.4	12.0	11.3	—	—	—	+17.3	+20	4.2	+34.0	1.2	1.2	1.3	1.8	100	650	65	4.5		
ERA-51SM	DC-4000	18.0	17.4	16.1	14.8	12.5	—	—	—	+18.1	+13	4.1	+33.0	1.1	1.2	1.2	1.4	120	650	65	4.5		
ERA-5SM	DC-4000	20.2	19.5	17.6	15.6	13.7	—	—	—	+18.4	+13	3.5	+33.0	1.3	1.3	1.2	1.3	120	650	65	4.9		
ERA-6SM	DC-4000	12.6	12.5	11.7	11.7	10.3	—	—	—	+17.1	+20	4.5	+35.0	1.3	1.2	1.2	1.2	120	650	70	5.0		
ERA-4XSM	DC-4000	14.7	14.2	13.5	12.0	11.3	—	—	—	+17.0	+20	4.2	+35.0	1.2	1.2	1.2	1.4	100	650	65	4.5		
ERA-5XSM	DC-4000	20.5	19.5	17.6	15.5	13.7	—	—	—	+18.4	+13	3.5	+35.0	1.2	1.3	1.2	1.3	120	650	65	4.9		

LOW PROFILE PLASTIC PACKAGE 3 mm x 3 mm

LEE
Case FG873



MODEL PREFIX	FREQ. (MHz)	GAIN, TYPICAL (dB)							MAXIMUM POWER (dBm)		DYNAMIC RANGE,		VSWR (:1)				MAXIMUM CURRENT RATING I (mA)	DC OPERATING POWER	
		OVER FREQUENCY, GHz							Typ. Output (1 dB Comp.) 2 GHz	Input (no dmg) f _U	NF (dB) Typ.	IP3 (dBm) Typ.	In DC-3 GHz	3-f _U GHz	Out DC-3 GHz	3-f _U GHz		Current (mA)	Device Volt Typ.

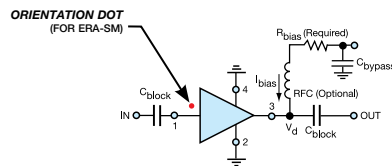
LOW POWER up to +12 dBm output NF from 4.5 dB

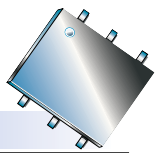
LEE-19	DC-8000	12.1	12.0	12.1	12.0	11.6	10.6	9.0	+12.0	+12.6	+15	6.5	+24.5	1.5	1.2	1.4	1.8	55	40	3.6
LEE-29	DC-8000	15.5	15.4	15.4	14.9	14.1	12.5	10.6	+11.9	+11.5	+15	5.5	+25.5	1.4	1.3	1.3	1.6	55	40	3.6
LEE-39	DC-8000	21.9	21.4	20.8	18.3	16.6	13.5	10.5	+11.6	+10.1	+13	4.5	+23.4	1.3	1.4	1.3	1.6	55	35	3.5

MEDIUM POWER up to +17.3 dBm output NF from 4.5 dB

LEE-49	DC-5000	14.0	13.9	14.3	14.0	13.1	7.8	—	+16.7	+10.7	+15	5.5	+33	1.6	1.2	1.4	1.4	85	65	4.9
LEE-59	DC-5000	20.6	20.3	19.7	15.8	13.8	7.6	—	+17.3	+11.5	+13	4.5	+33	1.5	1.5	1.5	1.6	85	65	4.8

ERA, LEE TYPICAL BIASING CONFIGURATION





SOT-89 PLASTIC PACKAGE

Gali, GVA, PHA
Case DF782



MODEL PREFIX	FREQ. (MHz)	GAIN, TYPICAL (dB)							MAXIMUM POWER (dBm) @ 2 GHz		DYNAMIC RANGE, @ 2 GHz		VSWR (:1) TYP				ABSOLUTE MAX. RATING	DC OPERATING POWER	
		OVER FREQUENCY, GHz							Output (1 dB Comp.) Typ.	Input (no dmg) Typ.	NF (dB) Typ.	IP3 (dBm) Typ.	In DC-3 GHz	3-f _L GHz	Out DC-3 GHz	3-f _L GHz		Current (mA)	Device Volt Typ.
	f _L -f _U	0.1	1	2	3	4	6	f _U											
LOW POWER up to +13.4 dBm output NF from 2.7 dB																			
Gali S66	DC-3000	22.0	20.3	17.3	15.5	—	—	—	+2.8	+13	2.7	+18.0	1.25	—	1.7	—	50	16	3.5
Gali 3	DC-3000	22.4	21.1	19.1	17.3	16.1	15.8	—	+12.5	+13	3.5	+25.0	1.5	—	1.2	—	55	35	3.3
Gali 33	DC-4000	19.3	18.7	17.5	16.3	15.5	15.8	—	+13.4	+13	3.9	+28.0	1.6	2.0	1.2	1.3	55	40	4.3
Gali 1	DC-8000	12.7	12.5	11.8	11.3	10.5	10.5	11.0	+12.2	+15	4.5	+27.0	1.3	1.7	1.4	1.8	55	40	3.4
Gali 2	DC-8000	16.2	15.8	14.8	13.7	12.7	13.2	15.1	+12.9	+15	4.6	+27.0	1.6	2.5	1.6	2.6	55	40	3.5
Gali 21	DC-8000	14.3	13.9	13.1	12.4	11.5	11.9	9.0	+12.6	+15	4.0	+27.0	1.1	1.5	1.3	2.5	55	40	3.5
INTERMEDIATE POWER up to +15.9 dBm output NF from 2.7 dB																			
Gali 19	DC-7000	12.1	11.7	11.6	10.7	10.8	10.1	11.0	+10.6	+15	6.5	+23.7	1.6	1.7	1.5	2.3	55	40	3.6
Gali 29	DC-7000	15.4	15.1	14.7	13.7	13.6	12.9	14.2	+11.2	+15	6.0	+24.7	1.5	1.6	1.5	2.3	55	40	3.6
Gali 39	DC-7000	20.8	21.1	19.7	17.7	17.0	16.1	17.6	+10.5	+13	4.9	+22.9	1.6	1.8	1.5	2.3	55	35	3.5

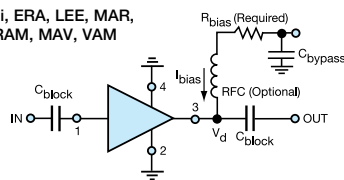
MEDIUM POWER up to +18.3 dBm output NF from 2.7 dB																			
Gali 52	DC-2000	22.9	20.8	17.8	15.9	14.4	—	—	+15.5	+13	2.7	+32.0	1.35	—	1.4	—	65	50	4.4
Gali 4F	DC-4000	14.3	14.0	13.4	13.0	12.3	13.2	—	+15.3	+20	4.0	+32.0	1.2	1.2	1.5	1.8	65	50	4.4
Gali 51F	DC-4000	18.0	17.3	15.9	14.8	13.4	13.3	—	+15.9	+13	3.5	+32.0	1.2	1.3	1.5	1.7	65	50	4.4
Gali 55	DC-4000	21.9	20.6	18.5	17.0	15.5	15.7	—	+15.0	+13	3.3	+28.5	1.25	1.35	1.3	1.5	65	50	4.3
Gali 5F	DC-4000	20.4	19.3	17.4	16.0	14.8	15.1	—	+15.7	+13	3.5	+31.5	1.2	1.2	1.4	1.4	65	50	4.3
Gali 6F	DC-4000	12.1	12.0	11.6	11.4	10.9	12.3	—	+15.8	+20	4.5	+35.5	1.5	1.5	1.9	2.2	65	50	4.8

HIGH POWER up to +22.4 dBm output NF from 2.7 dB																			
Gali 4	DC-4000	14.4	14.1	13.5	12.9	12.5	13.1	—	+17.5	+20	4.0	+34.0	1.2	1.2	1.4	1.7	85	65	4.6
Gali 5	DC-4000	20.6	19.4	17.5	16.0	14.9	15.1	—	+18.0	+13	3.5	+35.0	1.2	1.2	1.4	1.4	85	65	4.4
Gali 51	DC-4000	18.1	17.5	16.1	14.7	13.7	—	—	+18.0	+13	3.5	+35.0	1.3	1.2	1.5	1.7	85	65	4.5
Gali 6	DC-4000	12.2	12.2	11.8	11.3	11.4	12.3	—	+18.2	+20	4.5	+35.5	1.5	1.4	1.8	2.0	85	70	5.0
Gali 49	DC-5000	14.0	13.7	13.6	13.7	13.3	13.1	10.7	+16.4	+20	5.5	+33.3	1.7	1.2	1.5	1.4	85	65	5.0
Gali 59	DC-5000	20.6	19.7	18.3	16.7	15.4	—	10.2	+17.6	+13	4.3	+33.3	1.6	1.5	1.5	1.7	85	65	4.8
Gali 74	DC-1000	25.1	21.8	18.0	15.3	13.4	—	—	+18.3	+10	2.7	+38.0	1.2	—	1.6	—	130	80	4.8

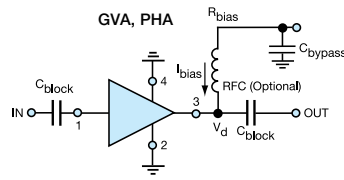
Gali 24	DC-6000	25.3	22.6	19.1	16.6	14.9	12.4	—	+19.4	+13	4.2	+36.3	1.25	1.4	1.9	2.2	160	80	5.8
Gali 84	DC-6000	25.6	22.7	19.2	16.7	15.0	11.8	—	+21.2	+13	4.4	+38.0	1.2	1.4	1.9	2.2	160	100	5.8
GVA-81	DC-7000	10.5	10.5	10.0	9.3	8.7	8.1	7.6	+19.7	+20.0	7.4	+36.6	1.3	1.3	1.3	1.4	160	TYP	NOM.
GVA-82	DC-7000	15.3	14.9	13.8	12.5	11.7	10.6	9.9	+20.6	+20.0	6.6	+36.0	1.3	1.3	1.6	1.6	160	103	5.0
GVA-83	DC-7000	20.5	19.3	17.1	15.2	13.8	12.3	11.2	+18.6	+20.0	6.2	+31.5	1.3	1.4	1.6	2.0	120	106	5.0
GVA-84	DC-7000	24.1	21.7	18.4	16.0	14.6	12.5	10.5	+20.6	+13.0	5.5	+36.6	1.2	1.3	2.0	3.0	160	72	5.0
PHA-1	50-6000	17.2	15.7	13.5	11.8	10.7	9.7	—	+22.4	+15.0	2.7	+42.0	1.35	2.0	1.4	1.9	210	108	5.0

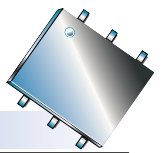
RECOMMENDED APPLICATION CIRCUITS

Gali, ERA, LEE, MAR,
RAM, MAV, VAM



GVA, PHA





AMPLIFIERS

Monolithic, Broadband 50 Ω DC to 2 GHz



RAM
Case AF190



MAR-SM
Case WW107, WW107-1



MAV-SM
Case RRR137, RRR137-1



VAM
Case MMM168

MODEL PREFIX	FREQ. (MHz)	GAIN (dB) TYPICAL at (MHz)			MAXIMUM POWER (dBm)		DYNAMIC RANGE		VSWR, (:1) Typ.		ABSOLUTE MAX. RATING (25°C)		DC OPERATING POWER	
		100	1000	2000	Output (1 dB Comp.) Typ.	Input (no damage)	NF (dB) Typ.	IP3 (dBm) Typ.	In	Out	I (mA)	P (mW)	Current (mA)	Device Volt Typ.
	$f_L - f_U$													

CERAMIC MICRO-X PACKAGE up to 12.5 dBm output NF from 2.8 dB

RAM-1	DC-1000	19.0	15.5	—	+1.5	+13	6.5	+14.0	1.3	1.3	40	200	17	5.00
RAM-2	DC-2000	12.5	11.8	11.0	+4.5	+13	5.5	+17.0	1.2	1.4	60	325	25	5.00
RAM-3	DC-2000	12.5	12.0	10.5	+10.0	+13	6.0	+23.0	1.6	1.7	80	425	35	5.00
RAM-4	DC-1000	8.5	8.0	—	+12.5	+13	6.5	+25.5	1.4	1.9	100	540	50	5.25
RAM-6	DC-2000	20.0	16.0	11.0	+2.0	+13	2.8	+14.5	1.4	1.3	50	200	16	3.50
RAM-7	DC-2000	13.5	12.5	11.0	+5.5	+13	4.5	+19.0	2.0	1.8	60	275	22	4.00
RAM-8	DC-1000	32.5	23.5	—	+12.5	+13	3.0	+27.0	#	#	65	420	36	7.80

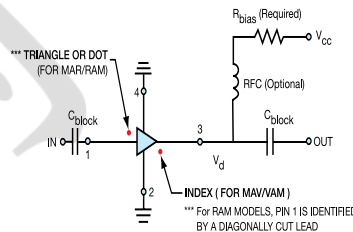
MICRO-X PLASTIC PACKAGE up to 18.5 dBm output NF from 3.0 dB

MAR-1SM	DC-1000	17.8	16.5	—	+2.5	+13	3.3	+14.0	1.3	1.2	40	200	17	5.00
MAR-2SM	DC-2000	12.5	12.0	11.0	+7.0	+13	3.7	+22.0	1.3	1.3	60	325	25	5.00
MAR-3SM	DC-2000	12.5	12.0	10.5	+10.0	+13	3.7	+28.0	1.3	1.3	70	400	35	5.00
MAR-4SM	DC-1000	8.3	8.0	—	+12.5	+13	6.0	+25.5	1.5	1.9	85	500	50	5.25
MAR-6SM	DC-2000	22.0	20.0	17.0	+3.0	+13	3.0	+14.5	1.3	1.3	50	200	16	3.50
MAR-7SM	DC-2000	13.5	12.5	11.0	+5.5	+13	3.5	+19.0	1.3	1.3	60	275	22	4.00
MAR-8ASM	DC-1000	31.5	25.0	—	+12.5	+13	3.1	+25.0	1.4	1.8	65	250	36	3.70
MAR-8SM	DC-1000	32.5	22.5	—	+12.5	+13	3.3	+27.0	#	#	65	500	36	7.80
MAV-11BSM	50-1000	12.7	11.3	9.5	+18.0	+13	4.4	+34.0	1.2	1.2	80	460	60	5.50
MAV-11SM	50-1000	12.7	10.5	—	+17.5	+13	3.6	+30.0	1.5	1.7	80	550	60	5.50

SOT PLASTIC PACKAGE up to 9 dBm output NF from 3.0 dB

VAM-3	DC-2000	11.5	11.0	9.5	+9.0	+13	6.0	+22.0	1.5	1.7	60	240	35	4.70
VAM-6	DC-2000	19.5	15.0	10.0	+2.0	+13	3.0	+14.0	1.6	1.5	40	125	16	3.30
VAM-7	DC-2000	13.0	12.0	9.8	+5.5	+13	5.0	+18.0	1.5	1.5	50	175	22	3.80

RAM, MAR, MAV, VAM TYPICAL BIASING CONFIGURATION



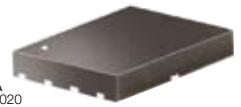
AMPLIFIERS

Dual Matched 50 Ω
DC to 4 GHz

MERA
Case DL805



MERA
Case DL1020



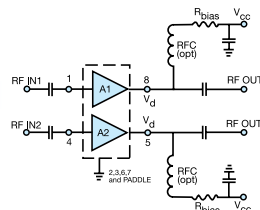
MODEL PREFIX	FREQ. (MHz)	GAIN TYPICAL, (dB)					MAXIMUM POWER (dBm)		DYNAMIC RANGE			VSWR (:1) TYP.	MAX. RATING		MATCHING		DC OPERATING POWER	
		OVER FREQUENCY, GHz	0.1	1	2	3	Output (1 dB Comp.) Typ.	Input (no dmg.)	NF (dB) Typ.	IP3 (dBm) Typ.	IP3 (dBm) Typ.		I (mA)	P (mW)	Amplitude Match* dB, Typ.	Phase Match* deg., Typ.	Current (mA)Typ.	Volt Min. Max.
	$f_L - f_U$	0.1 1 2 3 4										In Out						

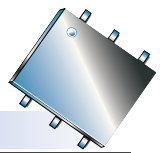
MEDIUM POWER up to +19.0 dBm output NF from 2.7 dB

MERA-7456	DC-1000	25.1	22.5	18.6	14.2	9.4	+19.0	+18.2	+14.4	+10	2.7	+36	+35	+32	1.3	2.0	130	700	DC-1 GHz 0.10 1-4 GHz 0.1	DC-1 GHz 0.6 1-4 GHz 1.0	80	4.8
MERA-7433	DC-1000	25.0	22.4	19.0	16.2	13.4	+19.0	+18.3	+14.8	+10	2.7	+36	+35	+32	1.25	1.8	130	700	0.15 0.3	0.5 1.0	80	4.8
MERA-556	DC-2200	20.5	20.2	19.0	16.7	13.0	+18.0	+17.6	+16.6	+13	3.5	+35	+35.5	+34	1.2	1.4	120	650	DC-2.2 GHz 0.10 2.2-4 GHz 0.1	DC-22 GHz 0.6 2.2-4 GHz 1.5	65	4.9
MERA-533	DC-4000	20.5	20.0	18.8	17.5	16.0	+17.9	+17.5	+16.7	+13	3.5	+35	+34	+33	1.4	1.5	120	650	0.05 0.1	0.7 2.0	65	4.9

* Matching between the 2 amplifiers

MERA TYPICAL BIASING CONFIGURATION





AMPLIFIERS

High Directivity 50 Ω
500 MHz to 5.9 GHz Supplied Voltage 2.8 to 5.0 Volts, DC

SOIC-8 LEAD PLASTIC PACKAGE

VNA
Case XX211, XX211-1



MODEL PREFIX	FREQ. (MHz)	GAIN (dB) TYPICAL					MAXIMUM POWER (dBm)		DYNAMIC RANGE		VSWR (:1) Typ.		DIRECTIVITY (dB) (Isolation-Gain) Typ.	DC OPERATING POWER	
		OVER FREQUENCY, GHz					Output (1 dB Comp.) Typ.		NF (dB) @1 GHz Typ.	IP3 (dBm) Typ.	In	Out		Current (mA)Typ.	Volt Min. Max.

up to 18.2 dBm output NF from 3.7 dB

VNA-22	500-2500	10.3 9.6	13.3 12.3	13.8 12.6	13.3 11.9	12.2 10.8	+17.0 +14.0	6.7 7.0	+29 +26	1.6 1.6	1.4 1.5	17-27 17-29	80 72	5.0 2.8
VNA-23	500-2500	15.1 14.6	18.6 17.6	18.3 17.1	16.9 15.9	14.6 13.9	+10.0 +8.5	4.7 4.7	+21 +19	1.5 1.5	1.3 1.5	15-20 14-21	32 29	5.0 2.8
VNA-25	500-2500	15.5 14.5	18.0 16.7	18.6 17.4	17.8 17.0	16.0 15.5	+18.2 +12.0	5.5 5.5	+29 +24	1.5 1.5	1.6 1.6	18-24 16-25	85 80	5.0 2.8
VNA-28	500-2500	18.1 17.5	22.4 21.1	22.8 21.0	21.6 20.1	18.3 17.5	+11.0 +9.6	3.7 3.7	+22 +19.6	1.6 1.6	1.5 1.6	16-20 15-21	33 30	5.0 2.8

LOW PROFILE PLASTIC PACKAGE 3 mm x 3 mm

MNA
Case DQ849



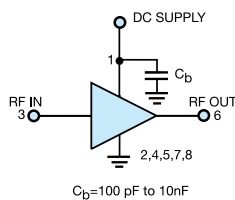
MODEL PREFIX	FREQ. (MHz)	GAIN (dB) TYPICAL					MAXIMUM POWER (dBm)		DYNAMIC RANGE		VSWR (:1) Typ.		DIRECTIVITY (dB) (Isolation-Gain) Typ.	DC OPERATING POWER	
		OVER FREQUENCY, GHz					Output (1 dB Comp.) Typ.		NF (dB) @1 GHz Typ.	IP3 (dBm) Typ.	In	Out		Current (mA)Typ.	Volt Min. Max.

up to 19.0 dBm output NF from 2.9 dB

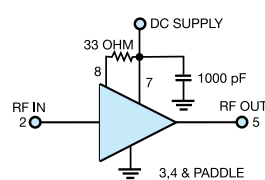
MNA-2	500-2500	10.6 9.6	12.8 11.5	12.8 11.2	12.3 10.7	11.9 10.2	+17.7 +12.9	+17.9 +12.4	5.4 5.4	+26.5 +23.2	+28.0 +24.2	1.5 1.5	1.6 1.6	20 20	76 60	5.0 2.8
MNA-3	500-2500	14.6 14.2	16.2 15.2	16.1 15.0	15.0 14.0	11.8 11.0	+11.4 +9.7	+9.5 +8.0	4.9 4.8	+19.6 +18.0	+21.3 +19.9	1.9 1.9	1.5 1.5	17 17	30 28	5.0 2.8
MNA-4	500-2500	15.6 14.3	16.6 14.6	16.4 14.5	15.8 14.1	13.3 11.7	+19.0 +13.4	+17.0 +13.7	4.8 4.8	+28.4 +23.9	+29.0 +24.9	1.5 1.5	1.7 1.7	20 20	75 67	5.0 2.8
MNA-5	500-2500	18.5 18.0	22.8 21.4	21.9 20.5	20.6 19.4	18.0 17.4	+12.2 +10.1	+8.0 +6.5	3.5 3.5	+19.4 +18.0	+21.0 +20.0	1.6 1.6	1.9 1.9	17 17	28 26	5.0 2.8
MNA-6	500-2500	19.4 18.6	23.5 21.5	23.6 21.2	23.0 21.0	20.2 19.0	+18.0 +14.1	+15.8 +13.2	2.9 2.9	+27.1 +23.4	+28.0 +25.0	1.5 1.5	1.6 1.9	17 17	81 65	5.0 2.8
MNA-7	1500-5900	1.5 15.9 13.7	2.0 17.2 15.4	3.5 17.4 15.8	5.0 17.2 16.7	5.9 10.8 9.8	+15.6 +12.7	+15.9 +13.1	@2 GHz 6.9 6.9	@2 GHz +28.4 +24.1	@5.9 GHz +28.6 +23.8	2.0 2.0	1.5 1.5	20 24	73 65	5.0 2.8

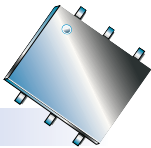
TYPICAL BIASING CONFIGURATIONS

VNA Models



MNA Models





AMPLIFIERS High IP3 50 & 75 Ω
5 MHz to 1 GHz

HELA
Case CM624



KIT No. PREFIX*	APPLICATION CHART	FREQUENCY (MHz)	OHMS	GAIN (dB) TYPICAL at MHz				MAXIMUM POWER (dBm)			DYNAMIC RANGE		VSWR (:1) Typ.		DC OPERATING POWER	
				Min.	Typ.	Max.	Typ. Flatness	Output (1 dB Comp.) Typ.	Input (no damage) Min.	+20	NF (dB) Typ.	IP3 (dBm) Typ.	In	Out	Volt Typ.	Current (mA)

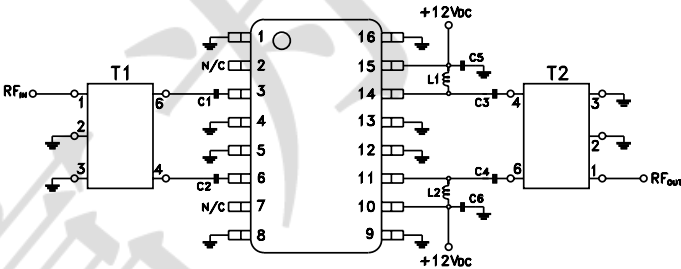
up to 30 dBm output NF from 3.5 dB

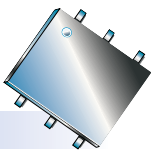
HELA-10A	A	50-1000	75	9.5	12.0	13.0	±0.4	+30	+26	+20	3.5	+47	1.22	1.22	12	525
HELA-10B	B	50-1000	50	9.5	12.0	13.0	±0.4	+30	+26	+20	3.5	+47	1.22	1.22	12	525
HELA-10C	C	5-450	75	9.3	11.4	12.5	±0.4	+30	+26	+20	3.5	+48	1.30	1.22	12	525
HELA-10D	D	8-300	50	9.3	11.0	12.5	±0.4	+30	+26	+20	3.5	+48	1.20	1.20	12	525

*Kit Contains HELA-10 plus Transformers (T1 & T2)

APPLICATION CIRCUIT	T1	T2	C1 to C6	L1, L2	PCB LAYOUT	EVALUATION BOARD
HELA-10A	ADTL1-18-75	ADTL1-18-75	0.01μF	0.75μH	B14-TB-30	TB-16
HELA-10B	ADTL1-12	ADTL1-12	0.01μF	0.75μH	B14-TB-17	TB-17
HELA-10C	ADT1-1WT	ADTL1-4-75	0.039μF	3.3μH	B14-TB-16	TB-30
HELA-10D	ADTL1.5-1	ADTL1.5-1	0.039μF	3.3μH	B14-TB-17	TB-45

APPLICATION SCHEMATIC DIAGRAM (see table above for values C1 to C6, L1&L2)





AMPLIFIERS Ultra Low Noise 50 Ω
50 MHz to 6 GHz



MODEL PREFIX	FREQ. (MHz)	NF (dB)	GAIN (dB)	OUTPUT POWER (dBm)	IP3 (dBm)	VSWR (:1)		DIRECTIVITY (dB)	DC OPERATING POWER	
						In	Out		(Isolation-Gain)	Voltage (V) Typ.
Typical specifications unless other wise noted										
NF from 0.55 dB IP3 up to +38 dBm										
TAMP-960LN	824-960	0.55	18.0	+16.5	+30.0	1.1	1.4	6.5	5.0	40
TAMP-242LN	1710-2400	0.65	13.0	+17.0	+33.5	1.6	1.2	7.5	5.0	40
TAMP-362LN	3300-3600	0.90	12.0	+11.0	+26.0	1.3	1.3	7.5	5.0	20
TAMP-362GLN	3300-3600	0.90	20.0	+16.0	+29.0	1.3	1.3	20.0	5.0	100
TAMP-242GLN	1710-2400	0.85	30.0	+20.0	+39.0	1.2	1.4	11.0	5.0	120
TAMP-272LN	2300-2700	0.90	14.0	+18.0	+33.0	1.4	1.5	7.6	5.0	70
RAMP-33LN	50-3000	1.10	16.0	+16.5	+30.0	2.0	1.4	8.0	5.0	70
RAMP-72LN	470-700	0.90	19.5	+21.0	+37.0	1.5	1.3	5.0	5.0	90
PMA-545	50-6000	0.80	14.2	+20.3	+36.0	2.3	1.3	6.0	3.0	80
PMA-5451	50-6000	1.00	13.7	+16.8	+30.8	2.3	1.7	7.8	3.0	30
PMA-5452	50-6000	0.90	14.0	+18.3	+34.1	2.1	1.6	7.5	3.0	40
PMA-5453	50-6000	0.90	14.3	+19.6	+37.8	2.1	1.4	7.2	3.0	60
PMA-5454	50-6000	1.00	13.5	+15.2	+28.1	2.1	1.7	8.0	5.0	20
PMA-5455	50-6000	1.00	14.0	+19.1	+32.7	2.1	1.4	7.5	5.0	40
PMA-5456	50-6000	1.00	14.4	+21.5	+36.0	1.9	1.4	7.1	5.0	60
PSA-545	50-900	1.00	14.9	+20.2	+36.5	2.1	1.5	7.2	3.0	20
PSA-5451	50-4000	1.00	13.7	+16.8	+30.8	2.3	1.7	7.8	3.0	30
PSA-5452	50-4000	0.90	14.3	+19.6	+37.8	2.1	1.4	7.2	3.0	60
PSA-5453	50-4000	1.00	13.5	+15.2	+28.1	2.1	1.7	8.0	5.0	20
PSA-5454	50-4000	1.00	14.0	+19.1	+32.7	2.1	1.4	7.5	5.0	40

(1) Specifications at midband for PMA, PSA series.

AMPLIFIERS Ultra Low Noise,
450 MHz to 6 GHz E-PHEMT TRANSISTORS



MODEL PREFIX	FREQ. (MHz)	NF (dB) @ 2000 MHz	GAIN (dB)				OUTPUT POWER (dBm)	IP3 (dBm)	DC OPERATING POWER		
			0.9	OVER FREQUENCY, GHz	2.0	3.9			5.8	VDS (V)	IDS (mA)
			Output (1 dB Compression)								
Typical specifications unless other wise noted											
NF from 0.5 dB											
SAV-551	450-6000	0.5	20.9	15.9	11.2	7.6	+17.5	+24.3	3	15	
SAV-581	450-6000	0.5	22.3	17.0	12.0	8.3	+19.0	+30.6	3	30	
SAV-541	450-6000	0.5	23.2	17.6	12.5	8.7	+19.2	+33.1	3	60	
TAV-551	450-6000	0.5	21.3	16.3	11.3	8.4	+17.5	+23.5	3	15	
TAV-581	450-6000	0.5	22.9	17.3	12.1	8.8	+18.3	+30.3	3	30	
TAV-541	450-6000	0.5	23.8	17.9	12.7	9.5	+19.1	+33.6	3	60	

