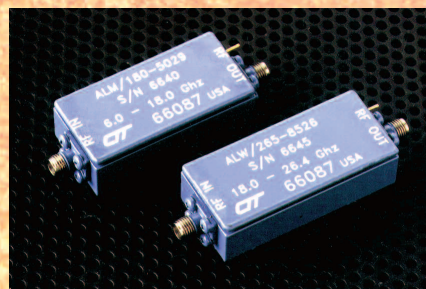


Temperature Compensated Amplifiers

0.5 GHz to 18 GHz

(-54°C to +85°C)

- ✓ **Solid-State**
- ✓ **Frequency Coverage from .05 GHz to 18 GHz**
- ✓ **MIC Thin-Film Design for High Reliability**
- ✓ **Optimum Compensation Techniques**



For applications where normal amplifier gain variations as a function of environmental temperature range exceed the allowable system limits, CTT offers amplifier designs whose gain variations have been reduced to one half that of uncompensated designs.

CTT Utilizes two techniques for compensating for gain variations:

- Integrating a PIN diode attenuator or FET (field effect transistor)
- Bias current compensation.

In the first approach, the control current of a PIN diode attenuator is automatically decreased by means of a thermistor so that at

high temperatures there is less attenuation. This compensates for the decreased gain due to an increase in ambient temperature. The attenuator is placed between the gain stages of the amplifiers so that noise figure and output power performance is minimally degraded.

In the second approach, the FET itself is compensated. In regions of low bias current, the FET gain is proportional to the current. The FET bias current is automatically increased by means of a thermistor at high temperatures to increase the gain, in order to compensate for a decrease in gain as a result of the increase in the ambient temperature.

Model Number	Frequency Response (GHz)	Gain (dB)	Gain Flatness (±dB)	Noise Figure (dB)	P1dB (+dBm)	VSWR In/Out	Volts (DC)	DC Current (mA)	Case
	Min	Min-Max	Max	Max	Min	Max	Typ	Typ	
ATM/020-4036	.5-2	36-40	1.25	4.0	15	2:1	12	200	HC4
ATM/020-4033	.5-2	33-37	1.50	4.0	20	2:1	12	320	HC4
ATM/060-4033	2-6	33-37	1.50	4.0	15	2:1	12	240	HC4
ATM/060-4031	2-6	31-35	1.50	4.0	20	2:1	12	350	HC4
ATM/080-5020	2-8	20-24	1.50	5.0	12	2:1	12	250	HC2
ATM/080-7520	2-8	20-24	1.50	7.5	20	2:1	12	280	HC2
ATM/080-5036	2-8	36-40	1.50	5.0	15	2:1	12	300	HC6
ATM/080-5033	2-8	33-37	1.50	5.0	20	2:1	12	350	HC6
ATX/0218-8522	2-18	22-28	2.50	8.5	10	2.2:1	12	450	HX4
ATX/0218-8544	2-18	36-44	2.75	8.5	10	2.2:1	12	600	HX6
ATM/180-5020	6-18	20-24	1.50	5.0	12	2:1	12	250	HX2
ATM/180-6026	6-18	26-30	1.75	6.0	15	2:1	12	300	HX4
ATM/180-7518	6-18	18-22	1.50	7.5	20	2:1	12	320	HX4
ATM/180-6030	6-18	30-35	2.00	6.0	20	2:1	12	450	HX6
ATO/180-6026	8-18	26-30	1.50	6.0	15	2:1	12	300	HX4
ATO/180-6030	8-18	30-35	2.00	6.0	20	2:1	12	450	HX6

Comments:

1. Maximum input power level will be +17 dBm CW. +20 dBm optional.
2. 0.32 inches thick flat package is optional.
3. SMA, female connectors are standard.
4. All units contain built-in voltage regulator and reverse voltage protection diode.
5. Consult the factory for any special gain, noise figure, power, voltage, etc.