



$$T_{RX} = \frac{T_2 - Y \cdot T_1}{Y - 1}$$

$$T_0 = 290\text{K}$$

$$F_{dB} = 10 \log_{10} \left[1 + \frac{T_2 - Y \cdot T_1}{(Y - 1) \cdot T_0} \right]$$

| Resistor type | Temperature |
|------------------------------|---------------------|
| Antenna into cold sky | $\sim 20\text{K}$ |
| Liquid N_2 cooled R | $\sim 77\text{K}$ |
| Antenna into absorber | $\sim 290\text{K}$ |
| R at room temperature | $\sim 290\text{K}$ |
| Light-bulb filament as R | $\sim 2000\text{K}$ |
| Ionized gas as R | $\sim 10^4\text{K}$ |
| Avalanche breakdown | $\sim 10^6\text{K}$ |