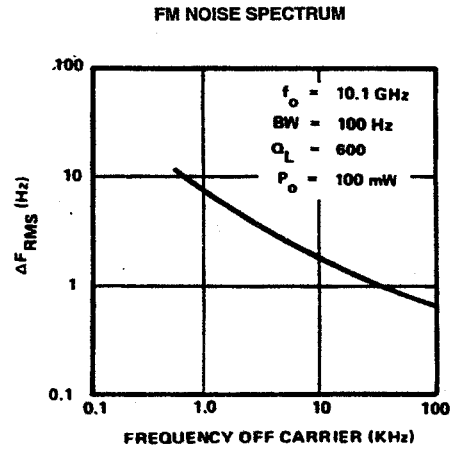
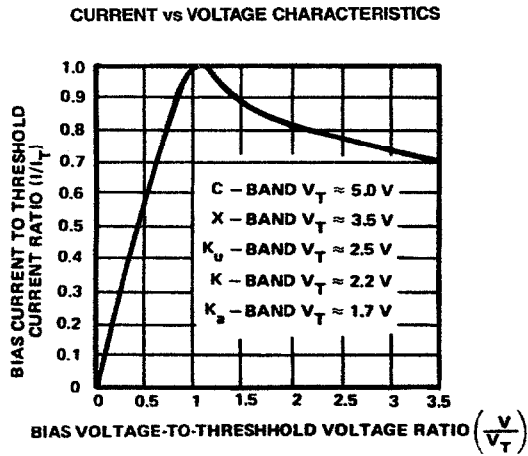


Typical Performance Curves (Con't)



Gunn Diode Mounting and Heat Sink Considerations

The rise in temperature between the diode case and the active region is defined by $\Delta T_{CA} = R_{\theta} (P_{in} - P_{out})$. In actual use the thermal drop between the ambient and the diode case must be taken into account in order to avoid exceeding the maximum active temperature of 260°C. The maximum active region temperature may be computed as follows:

Maximum active region temperature:

$$T_{AL} = T_A + \Delta T_{CA} + (P_{in} - P_{out}) R_{\theta}$$

where:

T_A = Ambient temperature

ΔT_{CA} = Temperature difference between the diode case and the ambient at operating power.

R_{θ} = Thermal resistance

T_{AL} = Active region temperature

In well designed heat sinks, the thermal difference ΔT_{CA} is usually less than 30°C for a power input of about 15 watts. This is an important factor in the design of Gunn oscillators and must be carefully considered.

Our technique for measuring thermal resistance is available upon request.