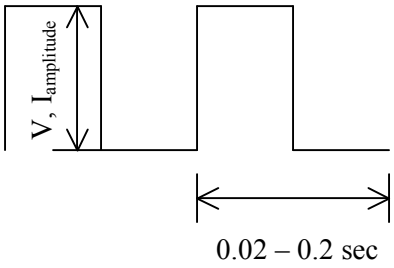
Electro Optical Components, Inc.
5464 Skylane Boulevard, Suite D, Santa Rosa, CA 95403
Toll Free: 855-EOC-6300
www.eoc-inc.com | info@eoc-inc.com

INFRARED EMITTER MIRL17-900
OPERATING SPECIFICATIONS

TO-5 or TO-39 housing.
Normal temperature and pressure.
Duty ratio = ½
Frequency =10 Hz.
For other frequencies, parameters may vary.

INPUT SIGNAL WAVEFORM
Bi-polar drive voltage may be used.



Parameters at maximum rated temperature (750 °C)	Resistance (hot) [Ohm]	50±5
	Input power [mW]	980±50
	Decay time (50% of peak) [ms]	5.4±0.4
	$I_{amplitude}$ [mA]	140±10
	$V_{amplitude}$ [V]	7±0.4

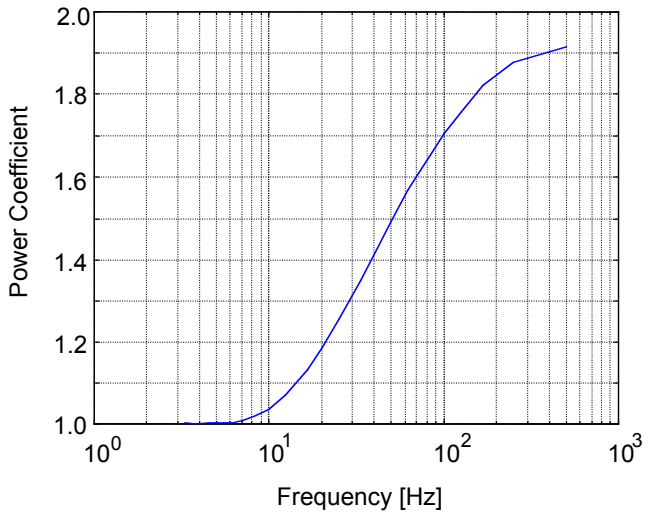
OPERATIONAL GUIDELINES

The source of the infrared radiation is a thin thermoresistive film of conducting amorphous carbon. The infrared radiation is the result of heating by passing an electric current through the film. The current can have any polarity. The maximum temperature of the film should not exceed 750°C in continuous operation. A red luminescence of the film is observed during operation at temperatures near 750°C. Short term heating (in air) up to 850°C is possible but will reduce device lifetime.

In the specifications the pulse parameters are indicated for an emitter operating without a radiator and at ambient temperature and pressure. A rectangular voltage pulse at a frequency of 5 Hz and with a duty ratio of 50% is used for heating.

The pulsed power indicated in the specifications cannot be exceeded for longer pulses. In direct current (dc) mode, it is recommended to keep the power on the emitter below 0.9x of the pulsed power indicated in the specification.

By reducing the length of the heating pulse, the membrane will not have time to reach 750°C. The pulsed power can therefore be increased to obtain a maximum of 750°C for the membrane. The increase in power is dependent on the duty ratio and frequency. For a duty ratio of 50% the power can be increased by a factor (power coefficient) given in the figure to the right.



At very high frequencies, the temperature variation of the membrane varies insignificantly during a pulse cycle and depends on the mean power during the cycle, approaching dc conditions. The mean power should then be reduced to <0.9x of the pulsed power of the standard operating condition.