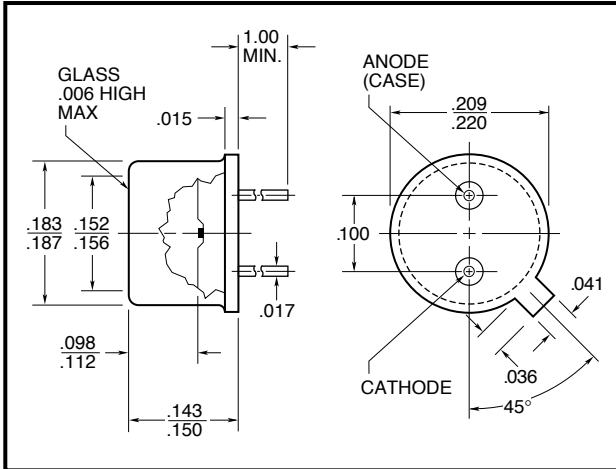


HIGH-POWER GaAlAs IR EMITTERS

OD-880W



FEATURES

- High reliability liquid-phase epitaxially grown GaAlAs
- 880nm peak emission for optimum matching with ODD-45W photodiode
- Wide range of linear power output
- Hermetically sealed TO-46 package
- Wide emission angle to cover a large area

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified. Window caps are welded to the case.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS | | |
|--|-----------------------|-----|------|-----|-----------------|----|-------|
| Total Power Output, P_O | $I_F = 100\text{mA}$ | 18 | 20 | | mW | | |
| Radiant Intensity, I_e | | | | | | 16 | mW/sr |
| Peak Emission Wavelength, λ_P | $I_F = 50\text{mA}$ | | 880 | | nm | | |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | | | | 80 | nm |
| Half Intensity Beam Angle, θ | | | | | | 80 | Deg |
| Forward Voltage, V_F | $I_F = 100\text{mA}$ | | 1.55 | 1.9 | Volts | | |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts | | |
| Capacitance, C | $V_R = 0\text{V}$ | | 17 | | pF | | |
| Rise Time | | | 0.5 | | μsec | | |
| Fall Time | | | 0.5 | | μsec | | |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|-------|
| Power Dissipation ¹ | 190mW |
| Continuous Forward Current | 100mA |
| Peak Forward Current (10 μs , 400Hz) ² | 3A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|-----------------|
| Storage and Operating Temperature Range | -55°C TO 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 400°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 135°C/W Typical |

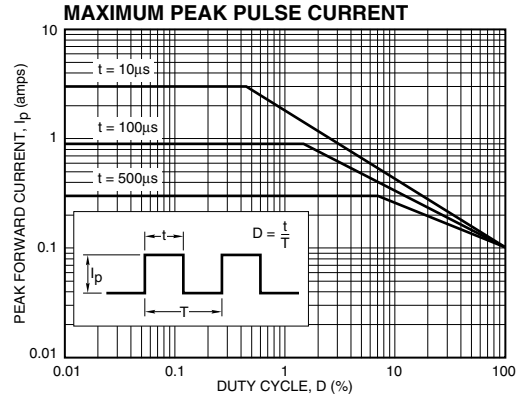
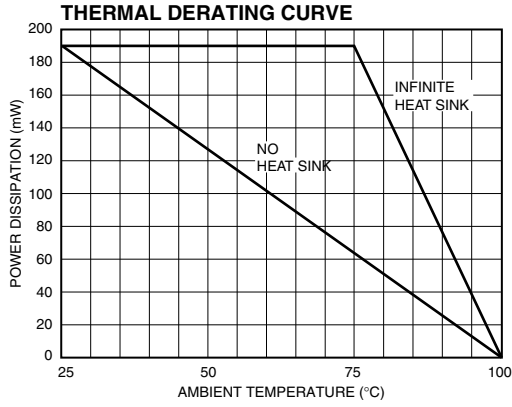
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

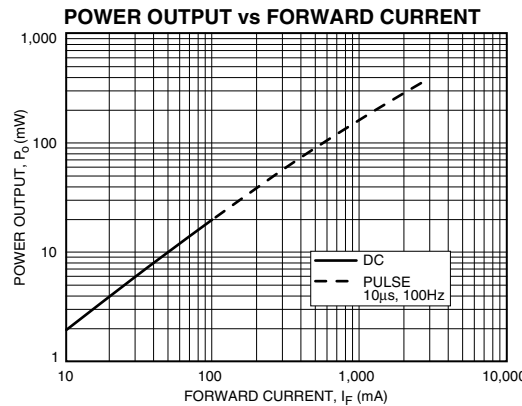
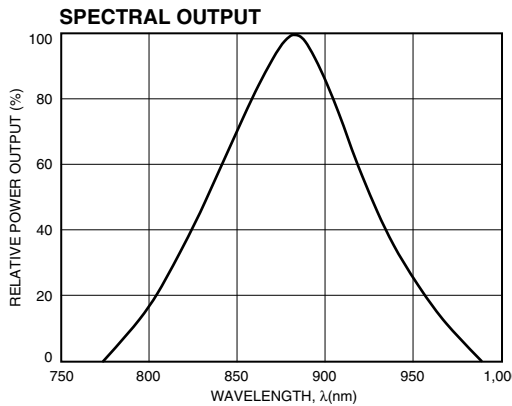
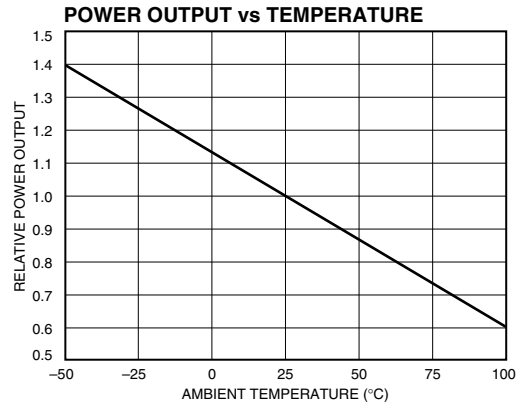
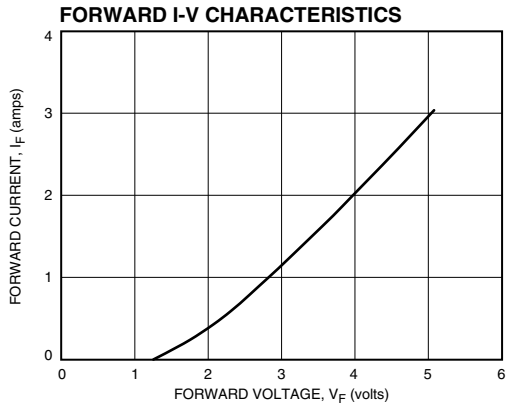
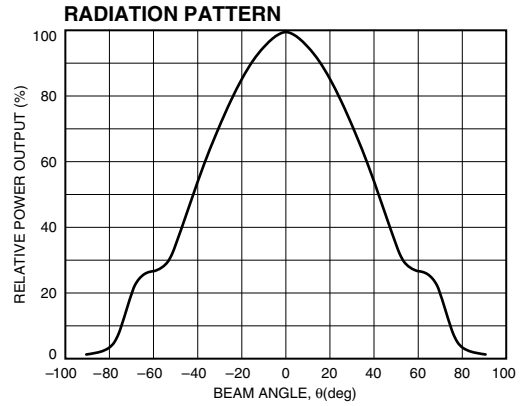
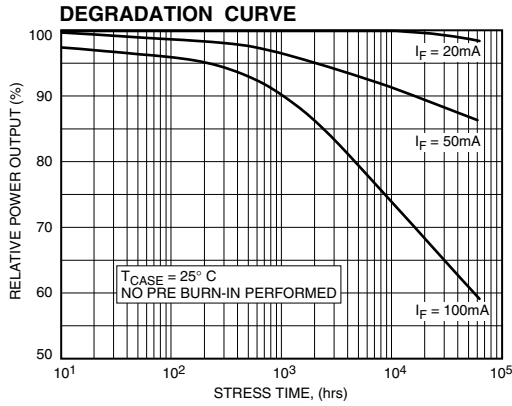
HIGH-POWER GaAlAs IR EMITTERS

OD-880W

MAXIMUM RATINGS

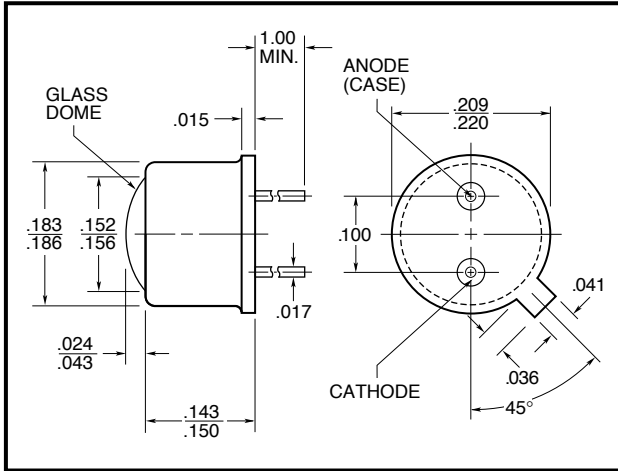


TYPICAL CHARACTERISTICS



HIGH-POWER GaAlAs IR EMITTERS

OD-880L



FEATURES

- High reliability liquid-phase epitaxially grown GaAlAs
- 880nm peak emission for optimum matching with ODD-45W photodiode
- Wide range of linear power output
- Hermetically sealed TO-46 package
- Medium emission angle for best coverage/power density

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified. Window caps are welded to the case.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS | | |
|--|-----------------------|-----|------|-----|-----------------|----|-------|
| Total Power Output, P_O | $I_F = 100\text{mA}$ | 18 | 20 | | mW | | |
| Radiant Intensity, I_e | | | | | | 50 | mW/sr |
| Peak Emission Wavelength, λ_P | $I_F = 50\text{mA}$ | | 880 | | nm | | |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | | | | 80 | nm |
| Half Intensity Beam Angle, θ | | | | | | 35 | Deg |
| Forward Voltage, V_F | $I_F = 100\text{mA}$ | | 1.55 | 1.9 | Volts | | |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts | | |
| Capacitance, C | $V_R = 0\text{V}$ | | 17 | | pF | | |
| Rise Time | | | 0.5 | | μsec | | |
| Fall Time | | | 0.5 | | μsec | | |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|-------|
| Power Dissipation ¹ | 190mW |
| Continuous Forward Current | 100mA |
| Peak Forward Current (10 μs , 400Hz) ² | 3A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|-----------------|
| Storage and Operating Temperature Range | -55°C TO 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 400°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 135°C/W Typical |

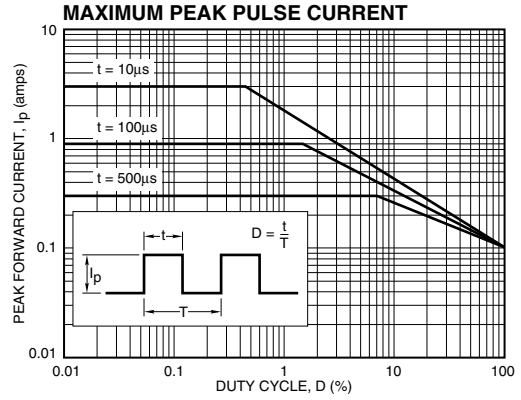
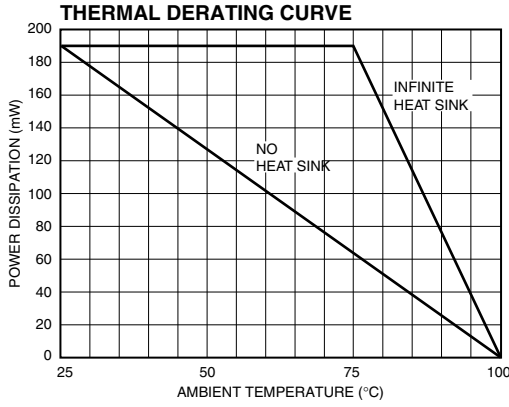
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

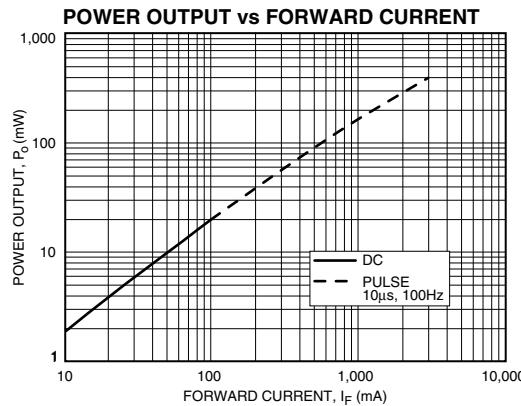
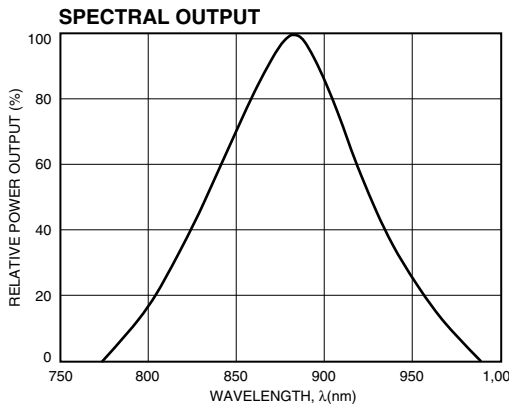
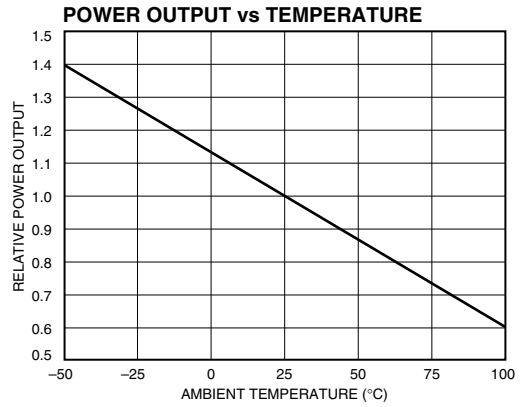
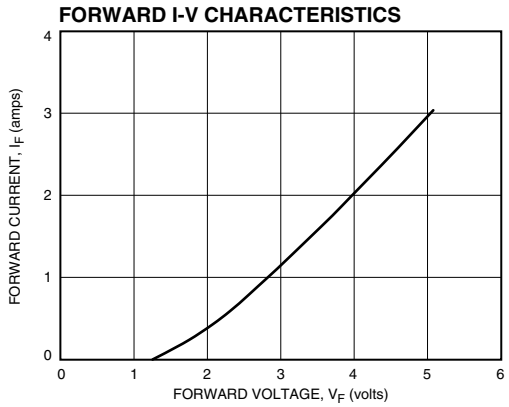
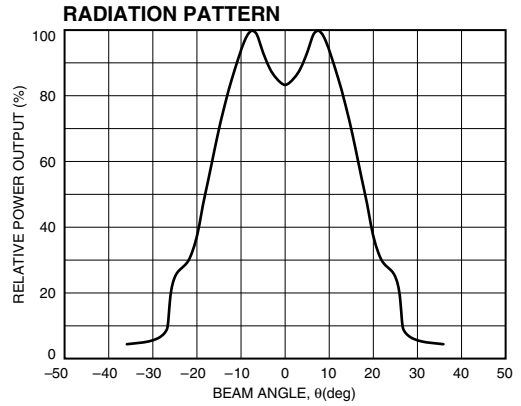
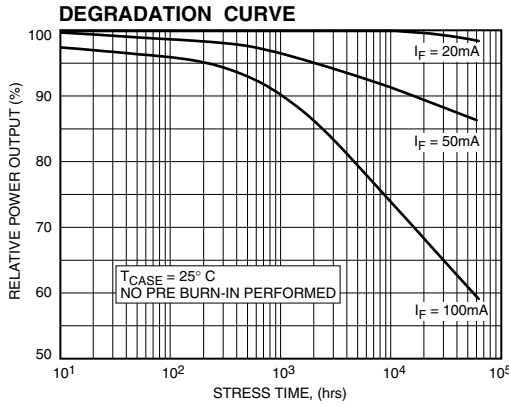
HIGH-POWER GaAlAs IR EMITTERS

OD-880L

MAXIMUM RATINGS

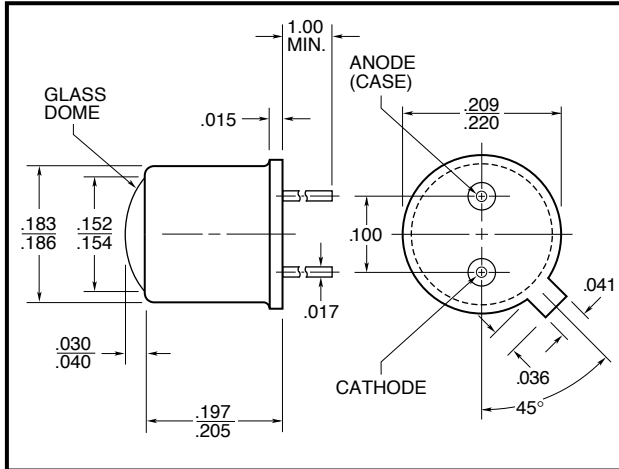


TYPICAL CHARACTERISTICS



HIGH-POWER GaAlAs IR EMITTERS

OD-880F



FEATURES

- High reliability liquid-phase epitaxially grown GaAlAs
- 880nm peak emission for optimum matching with ODD-45W photodiode
- Wide range of linear power output
- Hermetically sealed TO-46 package
- Narrow angle for long distance applications
- OD-880F1 selected to meet minimum radiant intensity

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified. Window caps are welded to the case.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|---------------------|-----|------------|-----|-----------|
| Total Power Output, P_o | OD-880F OD-880F1 | 15 | 17 | | mW |
| Radiant Intensity, I_e | OD-880F OD-880F1 | 120 | 135 160 | | mW/sr |
| Peak Emission Wavelength, λ_p | | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Half Intensity Beam Angle, θ | | | 8 | | Deg |
| Forward Voltage, V_F | | | 1.55 | 1.9 | Volts |
| Reverse Breakdown Voltage, V_R | | 5 | 30 | | Volts |
| Capacitance, C | | | 17 | | pF |
| Rise Time | | | 0.5 | | μ sec |
| Fall Time | | | 0.5 | | μ sec |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|-------|
| Power Dissipation ¹ | 190mW |
| Continuous Forward Current | 100mA |
| Peak Forward Current (10 μ s, 400Hz) ² | 3A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|-----------------|
| Storage and Operating Temperature Range | -55°C to 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 350°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 115°C/W Typical |

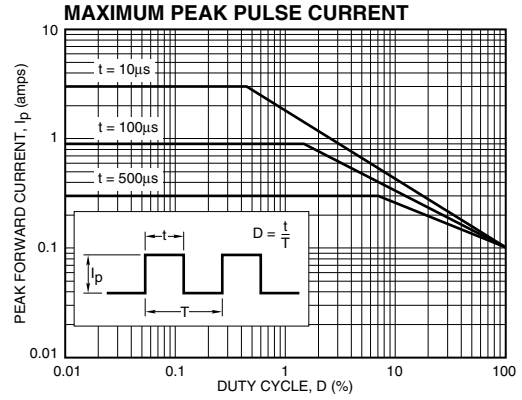
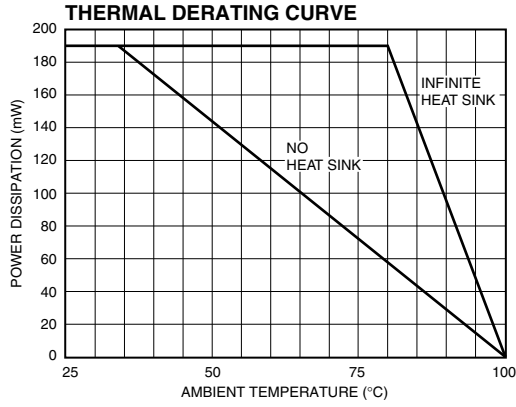
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

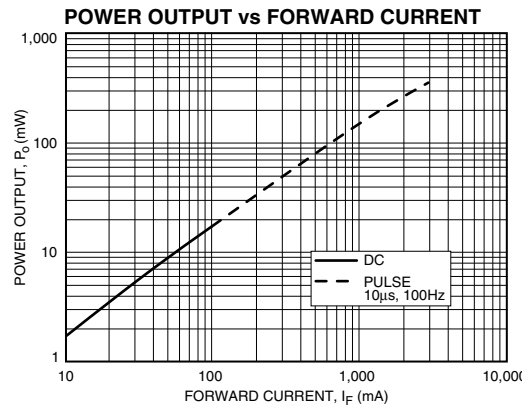
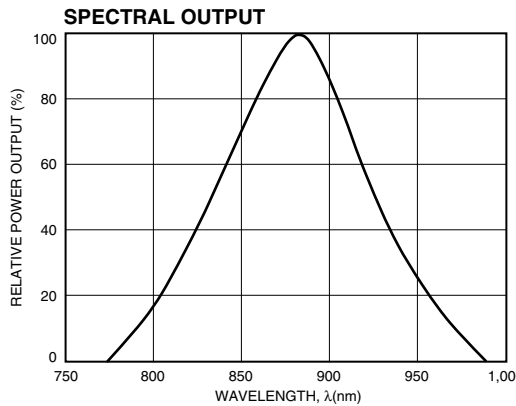
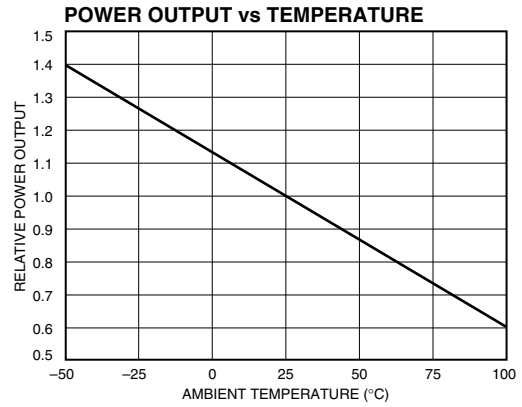
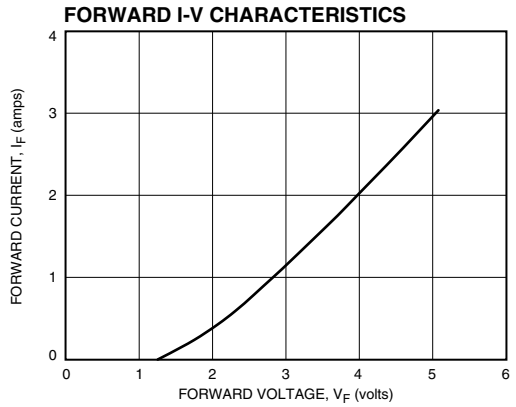
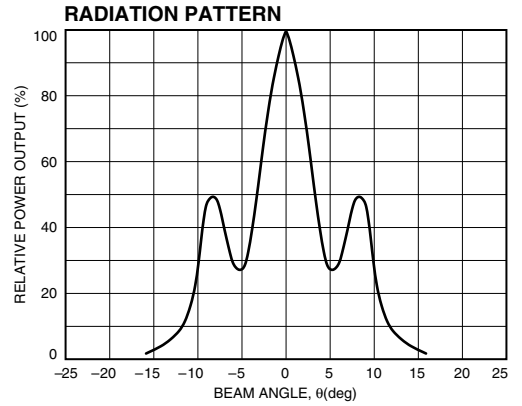
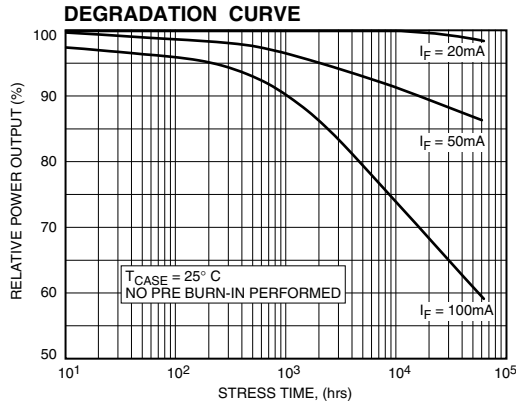
HIGH-POWER GaAlAs IR EMITTERS

OD-880F

MAXIMUM RATINGS

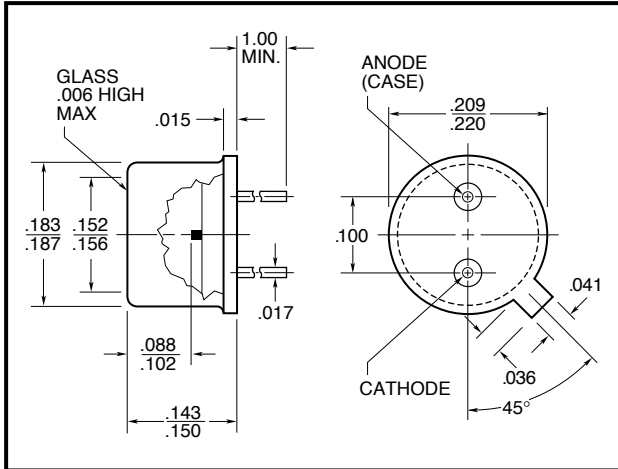


TYPICAL CHARACTERISTICS



HIGH-POWER GaAlAs IR EMITTERS

OD-148W



FEATURES

- Open center of emission
- High reliability liquid-phase epitaxially grown GaAlAs
- Hermetically sealed TO-46 package
- OD-148-C chip used

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified. Window caps are welded to the case.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|-----------------------|-----|------|-----|-----------------|
| Total Power Output, P_O | $I_F = 100\text{mA}$ | 8 | 10 | | mW |
| Peak Emission Wavelength, λ_P | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Half Intensity Beam Angle, θ | | | | 95 | |
| Forward Voltage, V_F | $I_F = 100\text{mA}$ | | 1.55 | 1.9 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 17 | | pF |
| Rise Time | | | 0.5 | | μsec |
| Fall Time | | | 0.5 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|-------|
| Power Dissipation ¹ | 190mW |
| Continuous Forward Current | 100mA |
| Peak Forward Current (10 μs , 400Hz) ² | 3A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|-----------------|
| Storage and Operating Temperature Range | -55°C TO 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 400°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 135°C/W Typical |

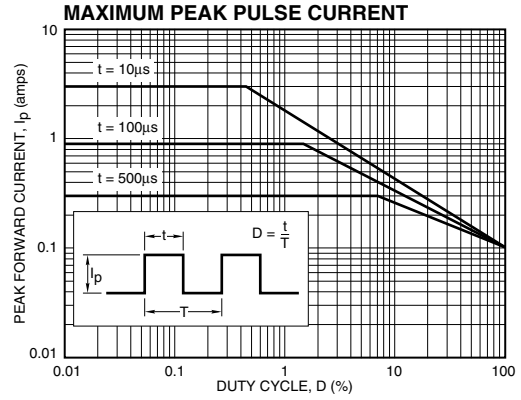
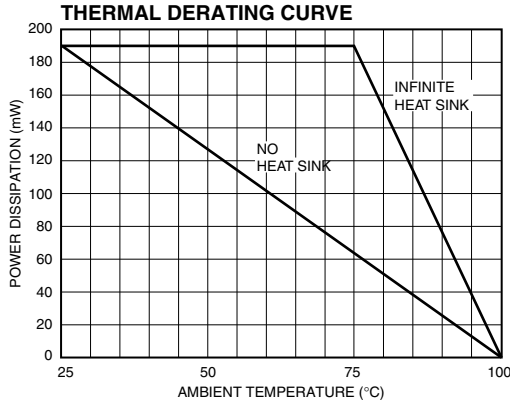
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

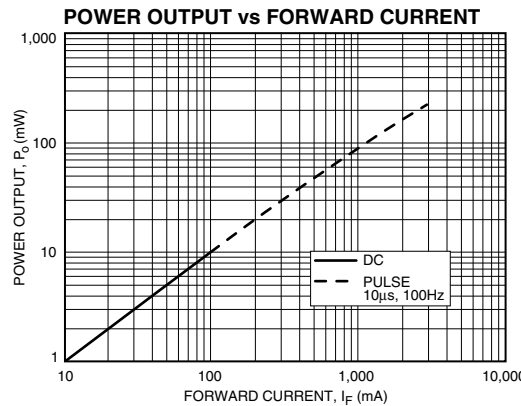
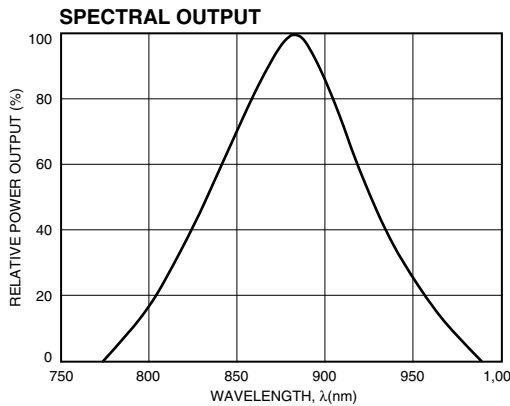
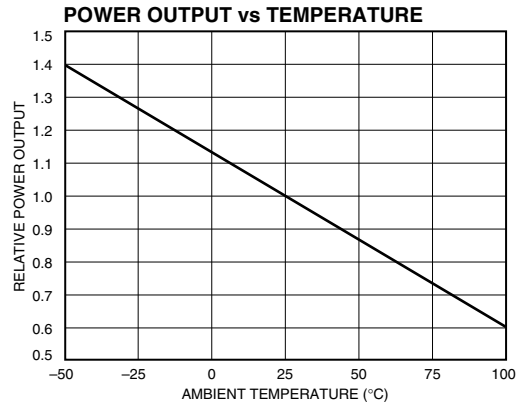
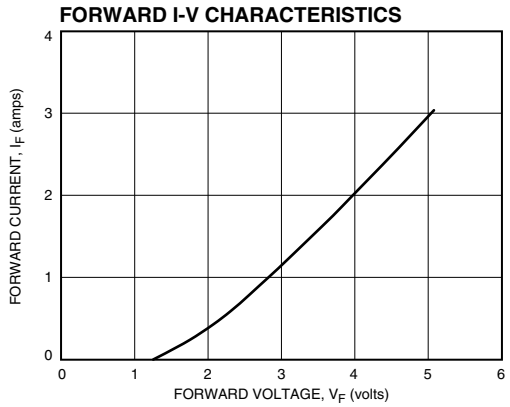
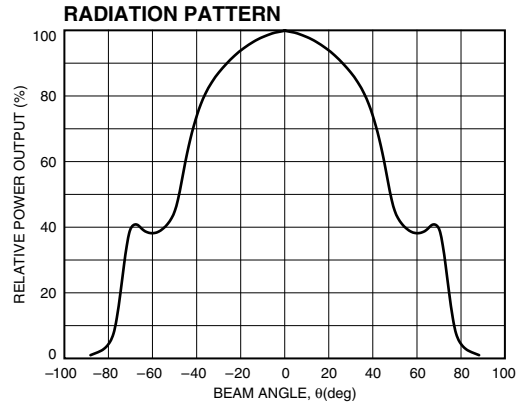
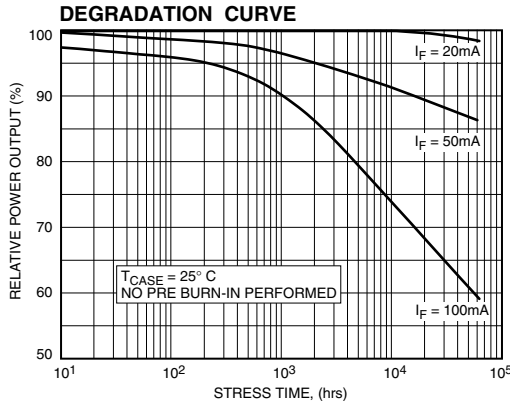
HIGH-POWER GaAlAs IR EMITTERS

OD-148W

MAXIMUM RATINGS

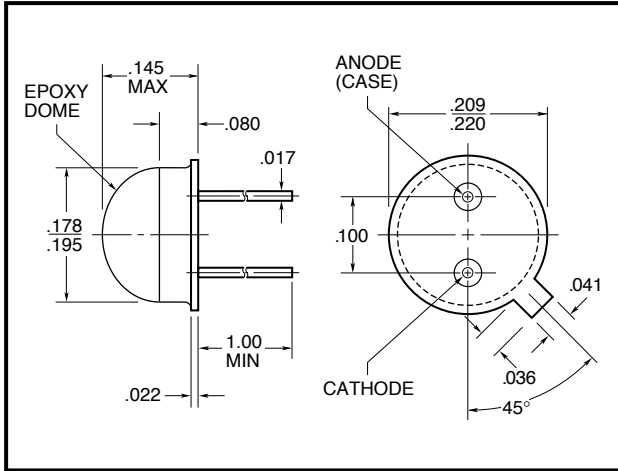


TYPICAL CHARACTERISTICS



HIGH-POWER GaAlAs IR EMITTERS

OD-880E



FEATURES

- High reliability liquid-phase epitaxially grown GaAlAs
- 880nm peak emission
- High uniform output
- TO-46 Header

All dimensions are nominal in inches unless otherwise specified.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|-----------------------|-----|------|-----|-----------------|
| Total Power Output, P_o | $I_F = 100\text{mA}$ | 20 | 30 | | mW |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Half Intensity Beam Angle, θ | | | 90 | | Deg |
| Forward Voltage, V_F | $I_F = 100\text{mA}$ | | 1.55 | 1.9 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 17 | | pF |
| Rise Time | | | 0.5 | | μsec |
| Fall Time | | | 0.5 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|-------|
| Power Dissipation ¹ | 190mW |
| Continuous Forward Current | 100mA |
| Peak Forward Current (10 μs , 400Hz) ² | 3A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|-----------------|
| Storage and Operating Temperature Range | -55°C TO 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 400°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 135°C/W Typical |

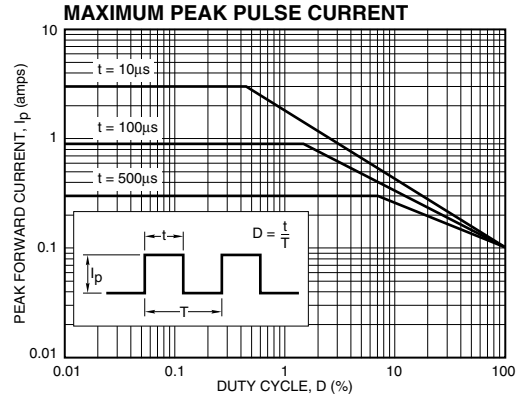
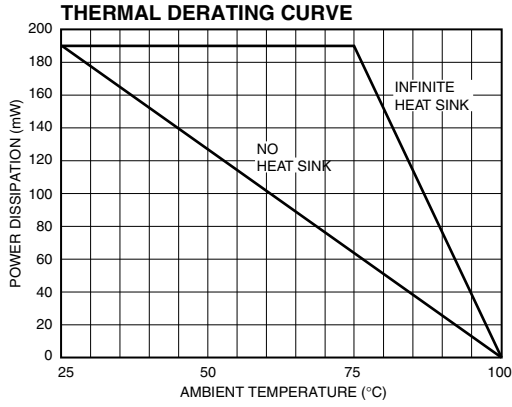
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

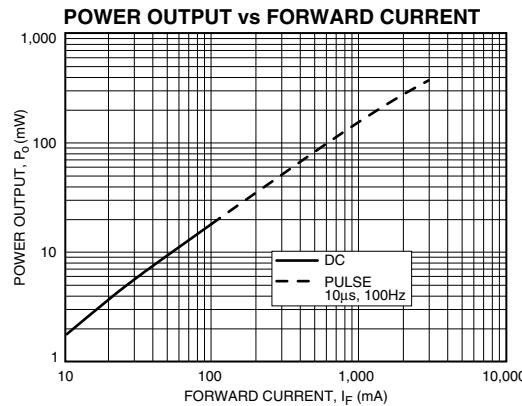
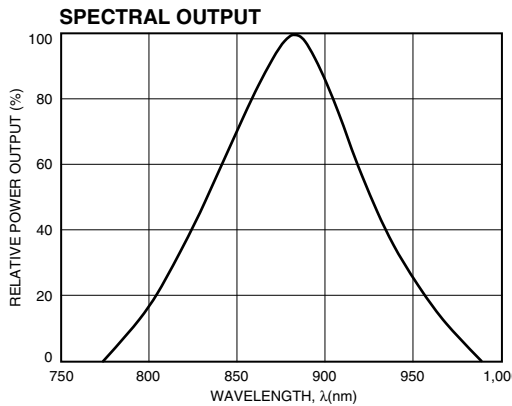
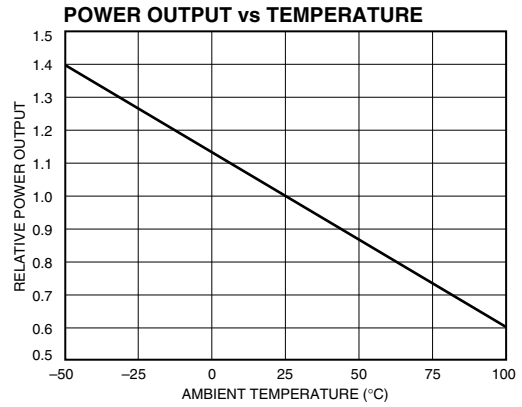
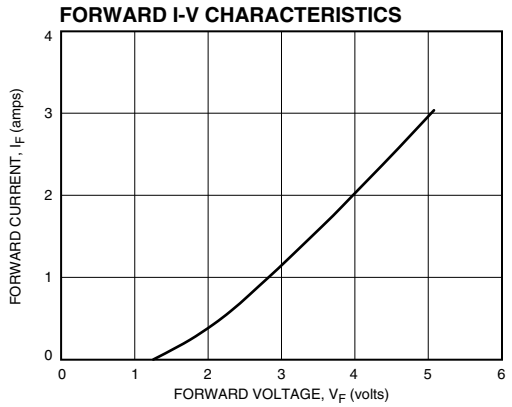
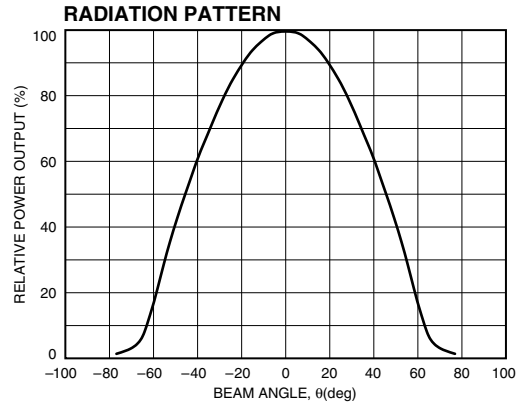
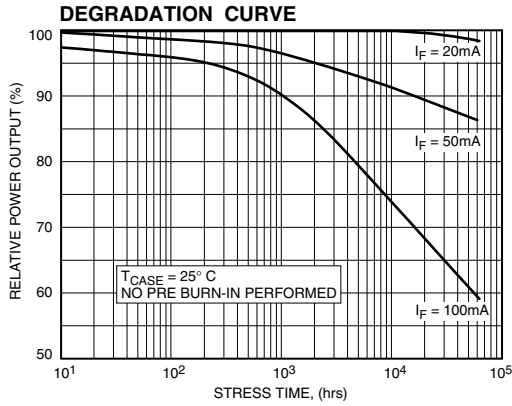
HIGH-POWER GaAlAs IR EMITTERS

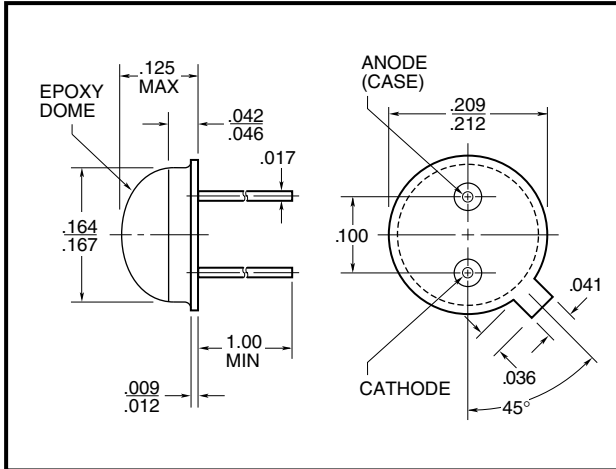
OD-880E

MAXIMUM RATINGS



TYPICAL CHARACTERISTICS



HIGH-POWER GaAlAs IR EMITTERS**OD-880****FEATURES**

- Very high power output
- Wide angle of emission
- High reliability liquid-phase epitaxially grown GaAlAs
- TO-46 Header

All metal surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|-----------------------|-----|------|-----|-----------------|
| Total Power Output, P_o | $I_F = 100\text{mA}$ | 25 | 30 | | mW |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Half Intensity Beam Angle, θ | | | | 80 | |
| Forward Voltage, V_F | $I_F = 100\text{mA}$ | | 1.55 | 1.9 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 17 | | pF |
| Rise Time | | | 0.5 | | μsec |
| Fall Time | | | 0.5 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|-------|
| Power Dissipation ¹ | 190mW |
| Continuous Forward Current | 100mA |
| Peak Forward Current (10 μs , 400Hz) ² | 3A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|-----------------|
| Storage and Operating Temperature Range | -55°C TO 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 400°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 135°C/W Typical |

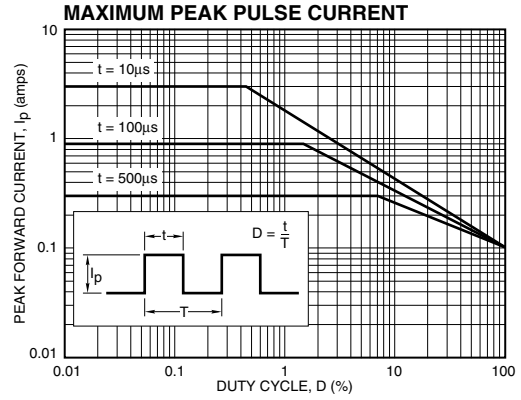
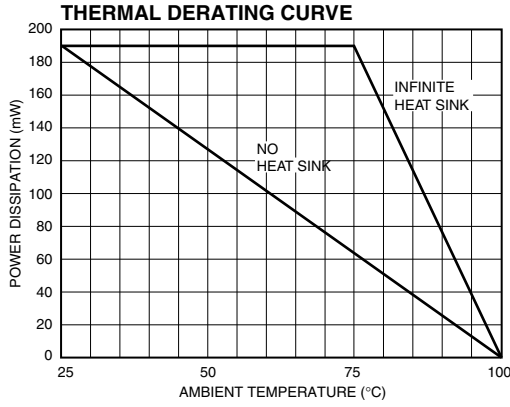
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

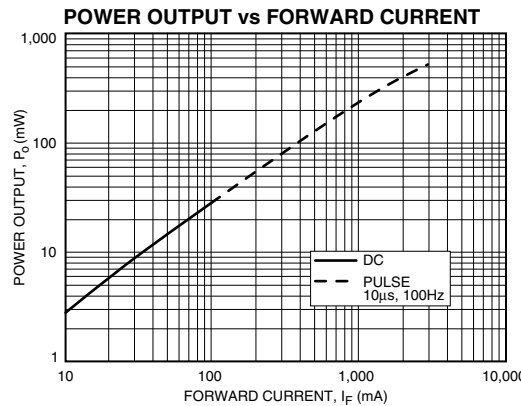
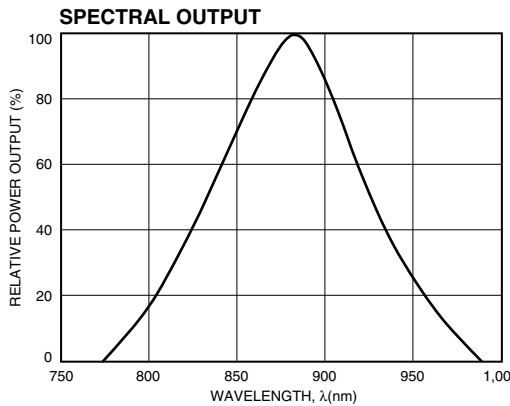
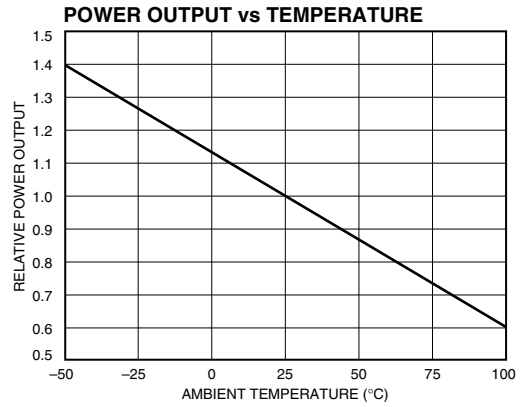
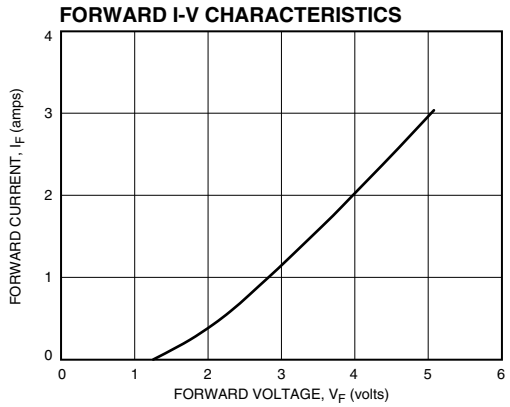
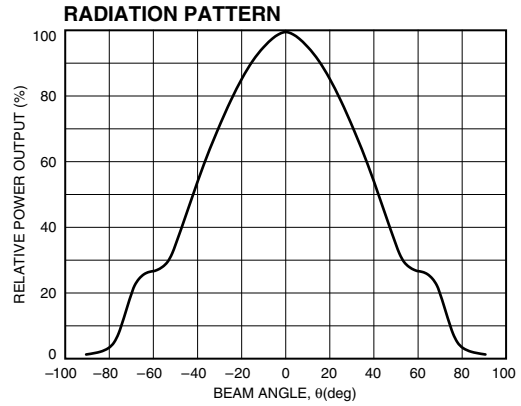
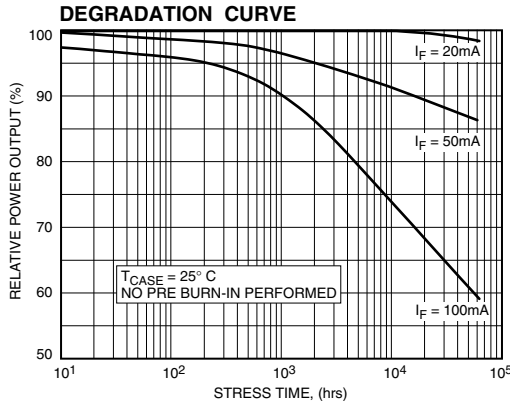
HIGH-POWER GaAlAs IR EMITTERS

OD-880

MAXIMUM RATINGS

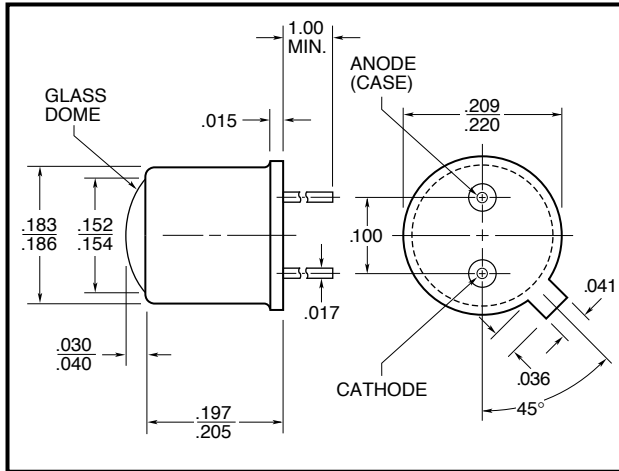


TYPICAL CHARACTERISTICS



HIGH-POWER GaAlAs IR EMITTERS

OD-24F



FEATURES

- High current capability
- 880nm peak emission for optimum matching with ODD-45W photodiode
- Hermetically sealed TO-46 package
- Narrow angle of emission

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified. Window caps are welded to the case.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS | | |
|--|-----------------------|-----|-----|-----|-----------------|-----|-------|
| Total Power Output, P_o | $I_F = 200\text{mA}$ | 25 | 30 | | mW | | |
| Radiant Intensity, I_e | | | | | | 220 | mW/sr |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm | | |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | | | | 80 | nm |
| Half Intensity Beam Angle, θ | | | | | | 8 | Deg |
| Forward Voltage, V_F | $I_F = 100\text{mA}$ | | 1.5 | 1.8 | Volts | | |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts | | |
| Capacitance, C | $V_R = 0\text{V}$ | | 60 | | pF | | |
| Rise Time | | | 0.7 | | μsec | | |
| Fall Time | | | 0.7 | | μsec | | |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|-------|
| Power Dissipation ¹ | 360mW |
| Continuous Forward Current | 200mA |
| Peak Forward Current (10 μs , 230Hz) ² | 7A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|-----------------|
| Storage and Operating Temperature Range | -55°C TO 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 350°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 115°C/W Typical |

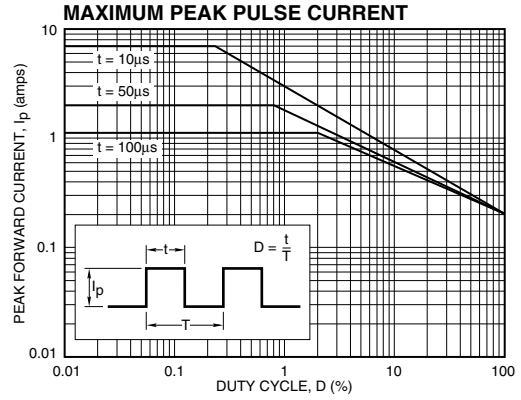
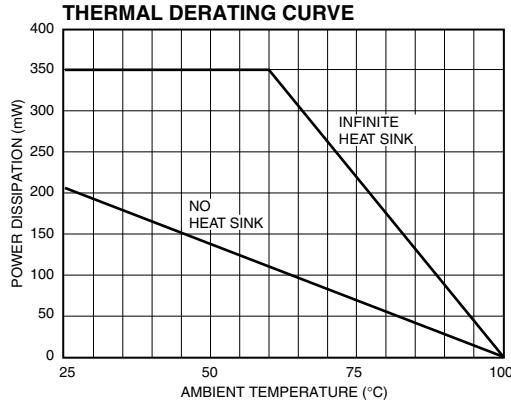
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

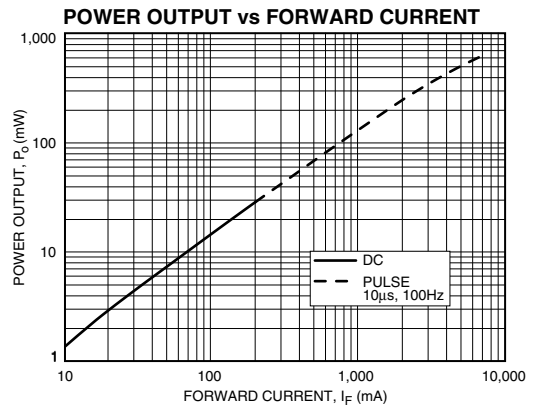
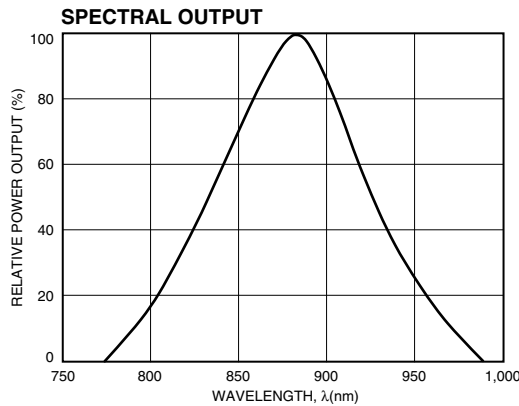
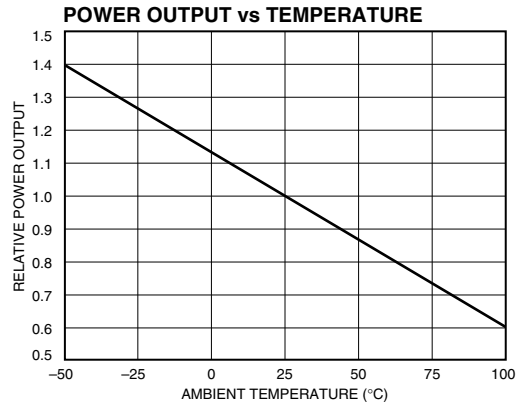
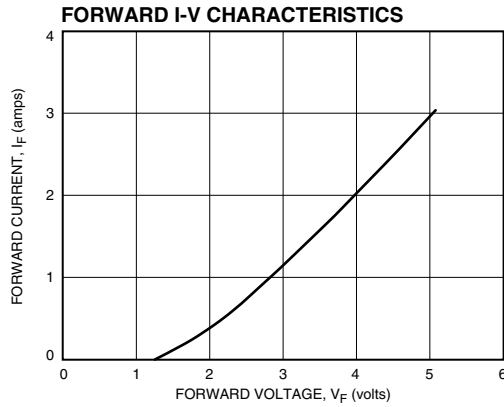
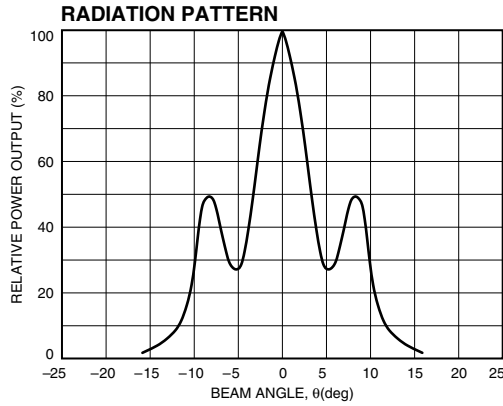
HIGH-POWER GaAlAs IR EMITTERS

OD-24F

MAXIMUM RATINGS

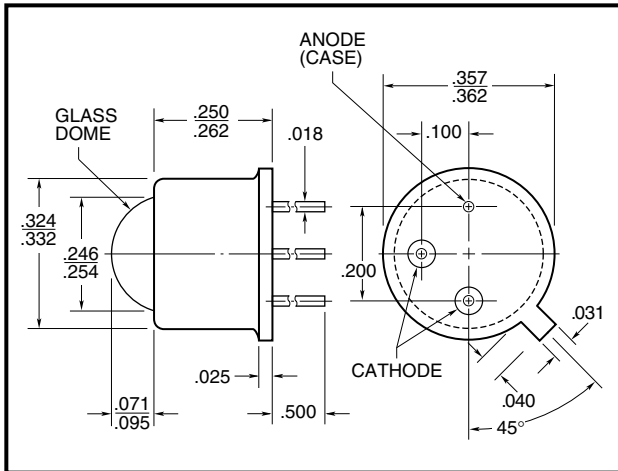


TYPICAL CHARACTERISTICS



SUPER HIGH-POWER GaAIAs IR EMITTERS

OD-50L



FEATURES

- Ultra high power output
- Four wire bonds on die corners
- Very narrow optical beam
- Standard 3-lead TO-39 hermetic package
- Chip size .030 x .030 inches

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified. Two cathode pins **must be** externally connected together.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|--|-----|-----------|-----|-----------------|
| Total Power Output, P_o | $I_F = 500\text{mA}$ $I_F = 10\text{A}$ | 40 | 50 600 | | mW |
| Radiant Intensity, I_e | $I_F = 500\text{mA}$ | | 500 | | mW/sr |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Half Intensity Beam Angle, θ | | | 7 | | Deg |
| Forward Voltage, V_F | $I_F = 500\text{mA}$ | | 1.65 | 2 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 90 | | pF |
| Rise Time | | | 0.7 | | μsec |
| Fall Time | | | 0.7 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|--------|
| Power Dissipation ¹ | 1000mW |
| Continuous Forward Current | 500mA |
| Peak Forward Current (10 μs , 400Hz) ² | 10A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|-----------------|
| Storage and Operating Temperature Range | -55°C to 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 150°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 60°C/W Typical |

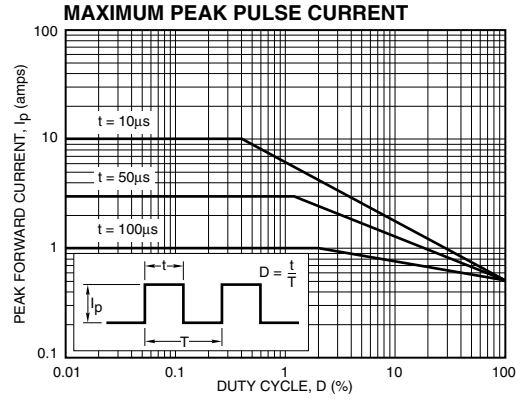
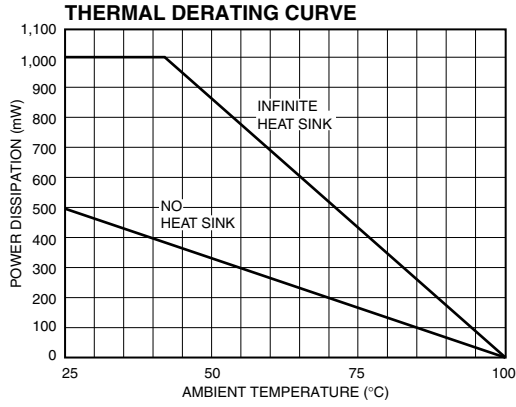
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

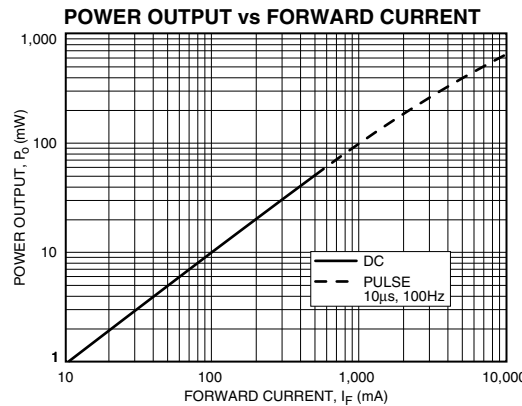
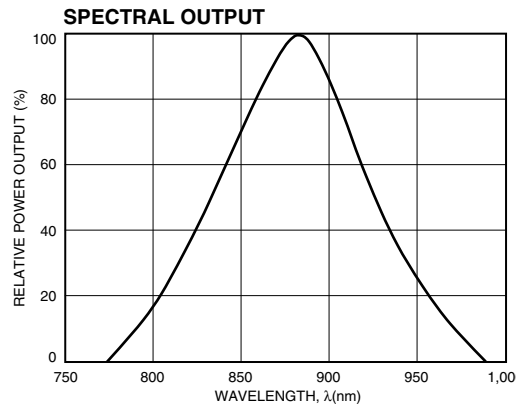
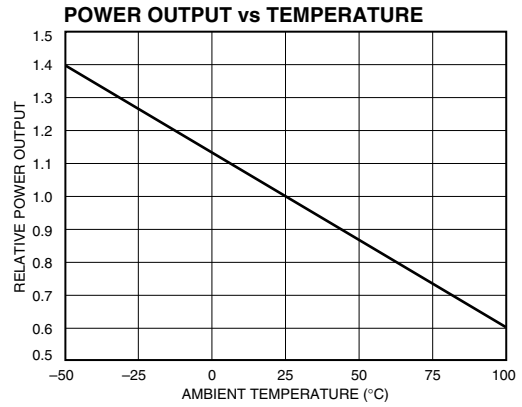
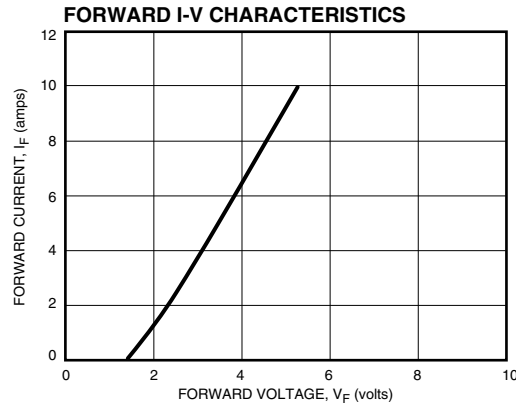
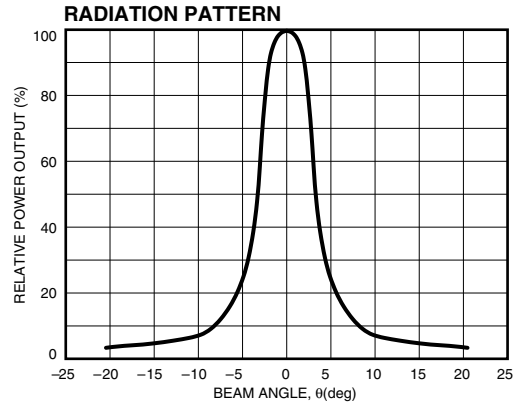
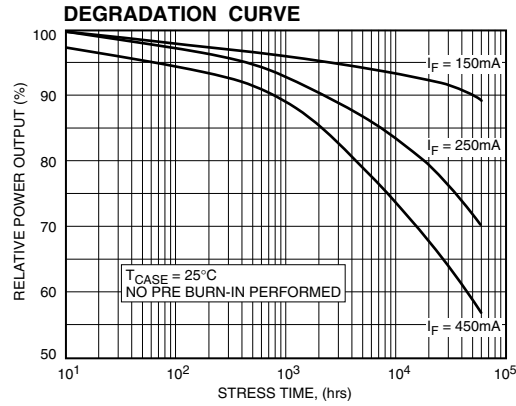
SUPER HIGH-POWER GaAlAs IR EMITTERS

OD-50L

MAXIMUM RATINGS

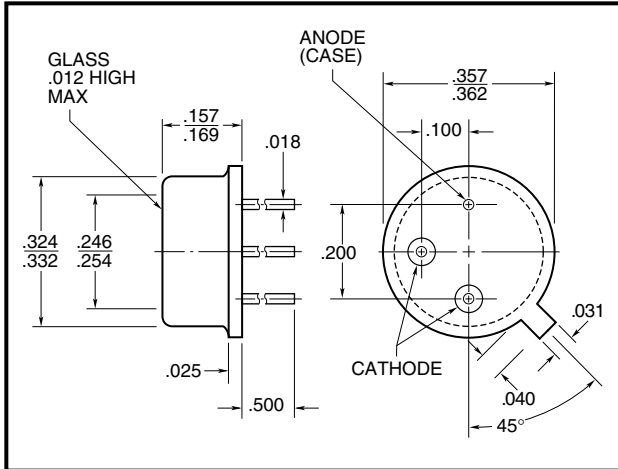


TYPICAL CHARACTERISTICS



SUPER HIGH-POWER GaAlAs IR EMITTERS

OD-50W



FEATURES

- Ultra high power output
- Four wire bonds on die corners
- Very uniform optical beam
- Standard 3-lead TO-39 hermetic package
- Chip size .030 x .030 inches

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified. Two cathode pins ***must be*** externally connected together.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|--|-----|------------|-----|-----------------|
| Total Power Output, P_o | $I_F = 500\text{mA}$ $I_F = 10\text{A}$ | 60 | 75 1000 | | mW |
| Radiant Intensity, I_e | $I_F = 500\text{mA}$ | | 60 | | mW/sr |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Half Intensity Beam Angle, θ | | | 110 | | Deg |
| Forward Voltage, V_F | $I_F = 500\text{mA}$ | | 1.65 | 2 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 90 | | pF |
| Rise Time | | | 0.7 | | μsec |
| Fall Time | | | 0.7 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|--------|
| Power Dissipation ¹ | 1000mW |
| Continuous Forward Current | 500mA |
| Peak Forward Current (10 μs , 400Hz) ² | 10A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|-----------------|
| Storage and Operating Temperature Range | -55°C to 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 145°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 75°C/W Typical |

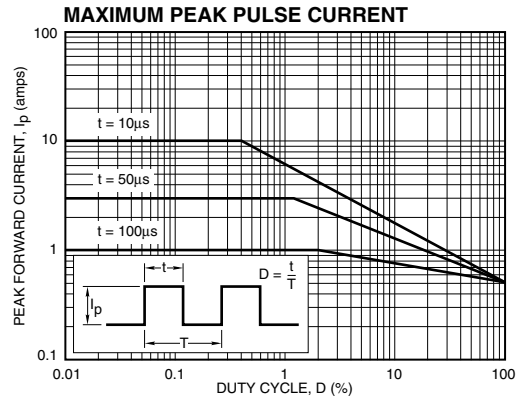
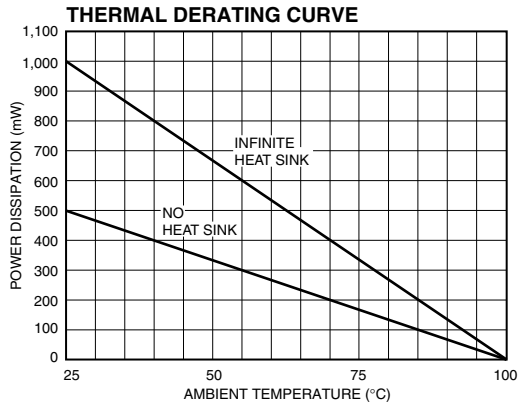
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

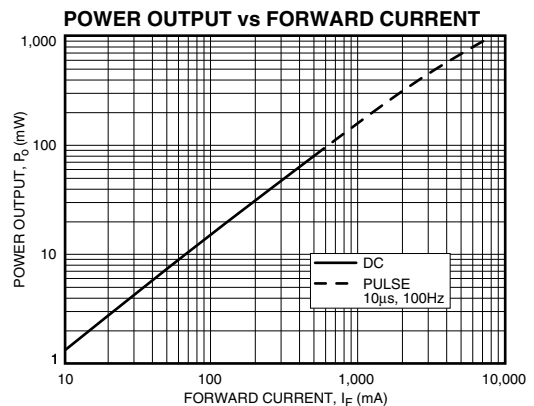
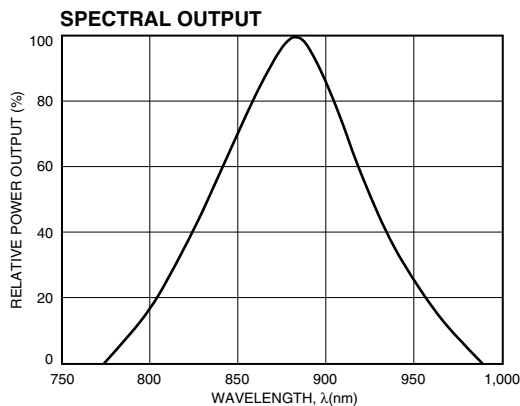
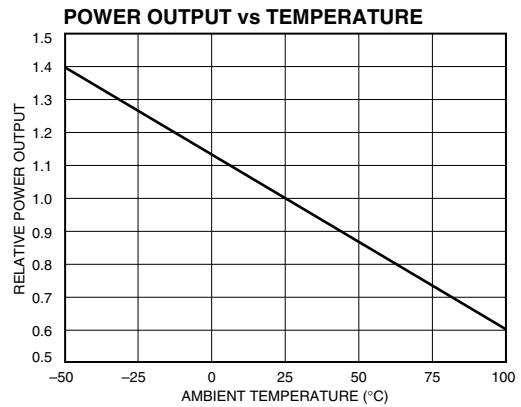
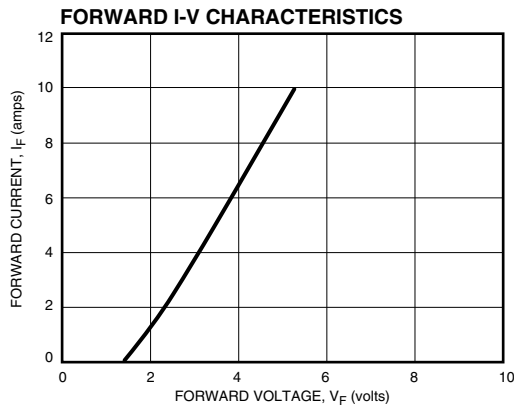
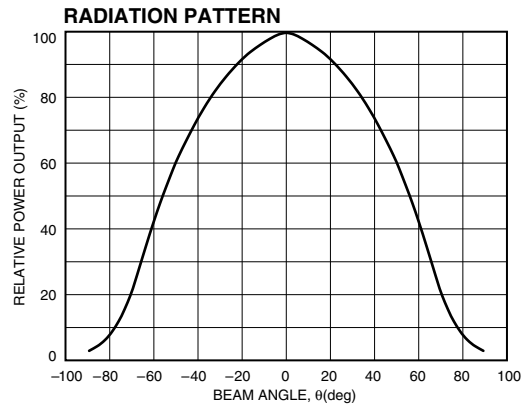
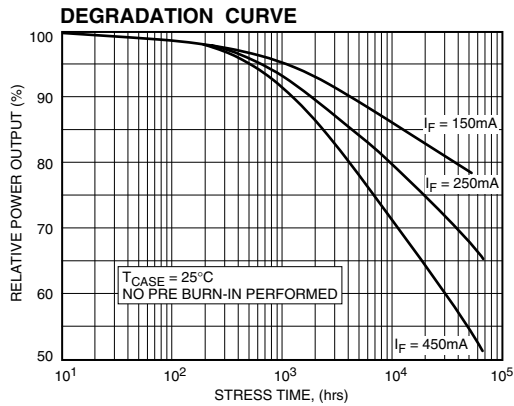
SUPER HIGH-POWER GaAlAs IR EMITTERS

OD-50W

MAXIMUM RATINGS

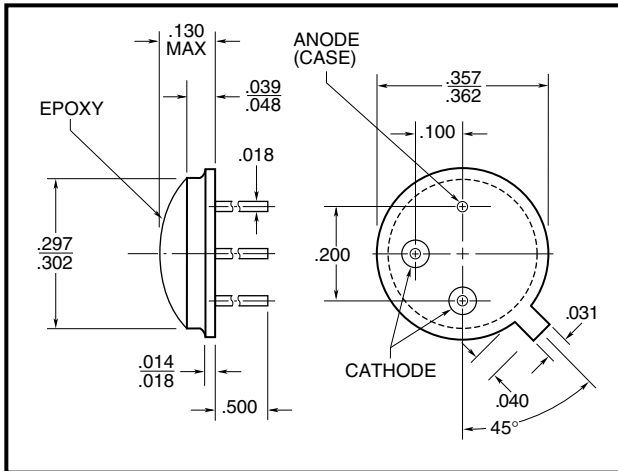


TYPICAL CHARACTERISTICS



SUPER HIGH-POWER GaAlAs IR EMITTERS

OD-100



FEATURES

- Ultra high power output
- Four wire bonds on die corners
- Very uniform optical beam
- Standard 3-lead TO-39 hermetic package
- Chip size .030 x .030 inches

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified. Two cathode pins ***must be*** externally connected together.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|--|-----|-------------|-----|-----------------|
| Total Power Output, P_o | $I_F = 500\text{mA}$ $I_F = 10\text{A}$ | 80 | 100 1300 | | mW |
| Radiant Intensity, I_e | $I_F = 500\text{mA}$ | | 60 | | mW/sr |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Half Intensity Beam Angle, θ | | | | 110 | |
| Forward Voltage, V_F | $I_F = 500\text{mA}$ | | 1.65 | 2 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 90 | | pF |
| Rise Time | | | 0.7 | | μsec |
| Fall Time | | | 0.7 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|---------|
| Power Dissipation ¹ | 1000 mW |
| Continuous Forward Current | 500mA |
| Peak Forward Current (10 μs , 400Hz) ² | 10A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|-----------------|
| Storage and Operating Temperature Range | -55°C to 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 145°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 75°C/W Typical |

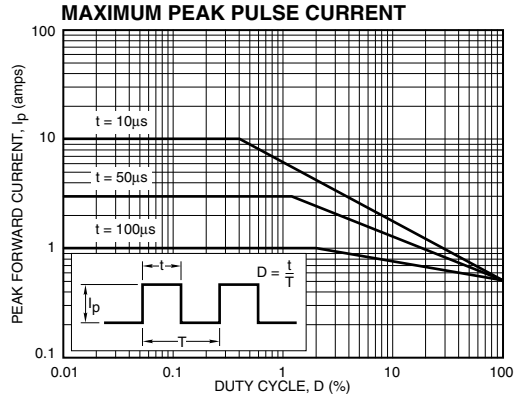
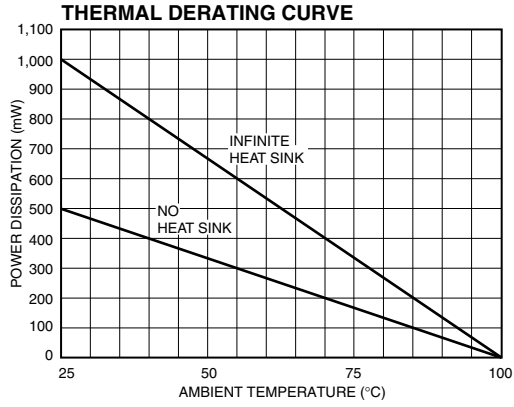
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

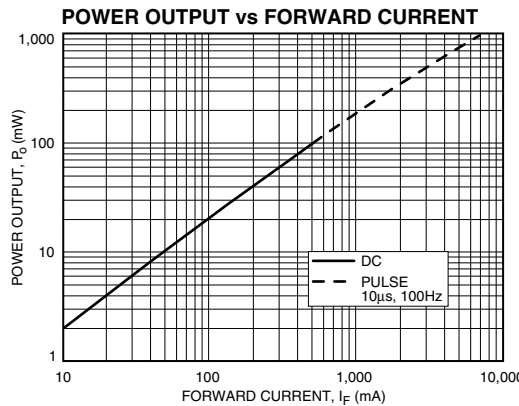
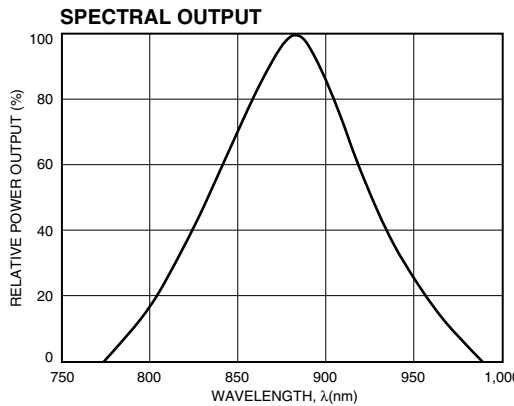
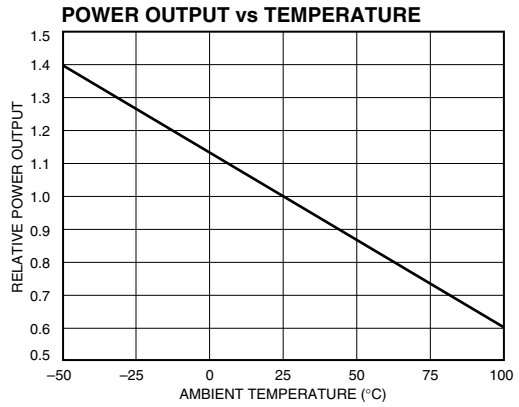
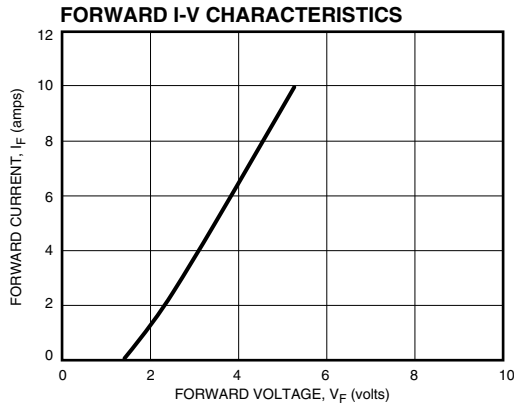
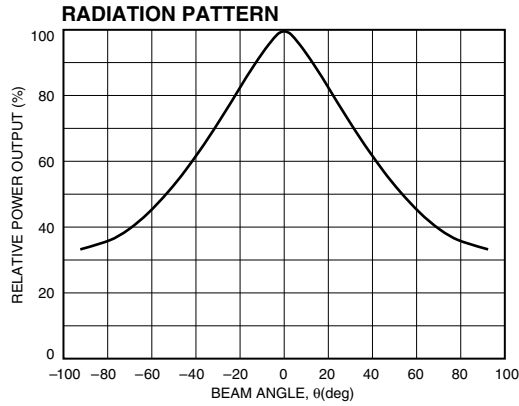
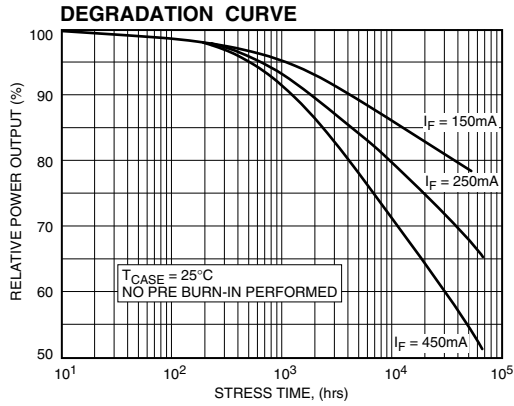
SUPER HIGH-POWER GaAlAs IR EMITTERS

OD-100

MAXIMUM RATINGS

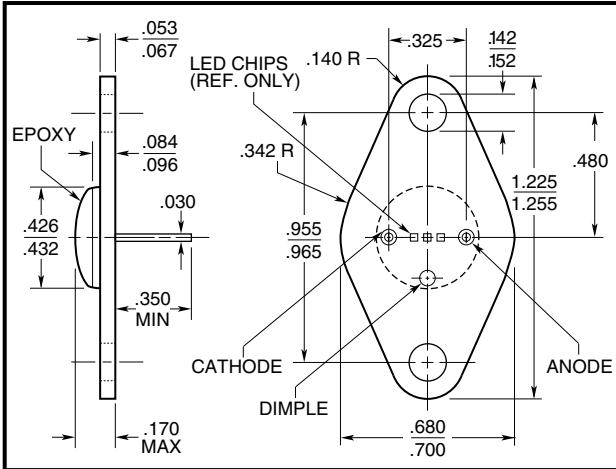


TYPICAL CHARACTERISTICS



HIGH-POWER GaAlAs IRLED ILLUMINATOR

OD-663



FEATURES

- Super high power output
- 880nm peak emission
- Three chips connected in series
- TO-66 header for good heat dissipation
- 100% tested for power output
- Electrically isolated case

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|---|-----|-------------|-----|-----------------|
| Total Power Output, P_o | $I_F = 300\text{mA}$ $I_F = 8\text{A}$ | 150 | 170 3500 | | mW |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Half Intensity Beam Angle, θ | | | | 120 | |
| Forward Voltage, V_F | $I_F = 300\text{mA}$ | | 4.5 | 5 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 30 | | pF |
| Rise Time | | | 1 | | μsec |
| Fall Time | | | 1 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|-------|
| Power Dissipation ¹ | 2W |
| Continuous Forward Current | 400mA |
| Peak Forward Current (10 μs , 400Hz) ² | 8A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|----------------|
| Storage and Operating Temperature Range | -55°C to 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 60°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 16°C/W Typical |

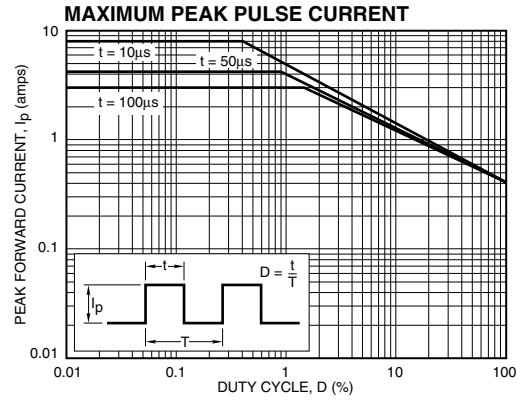
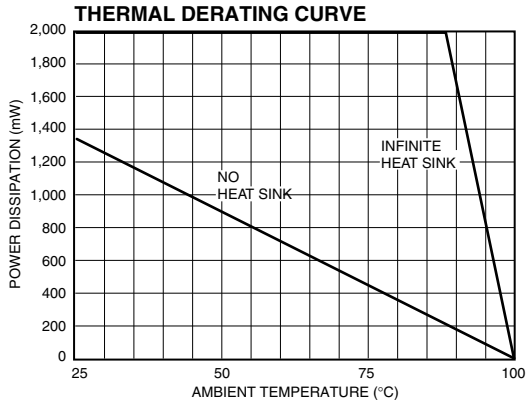
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

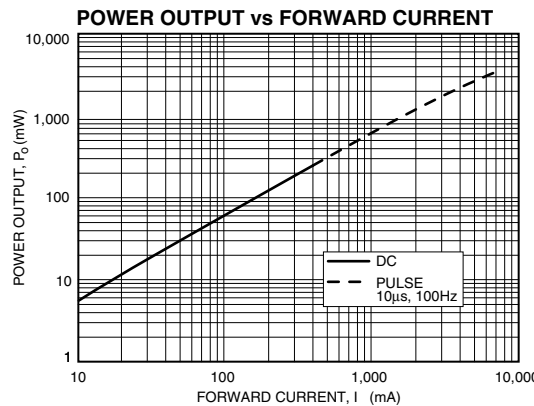
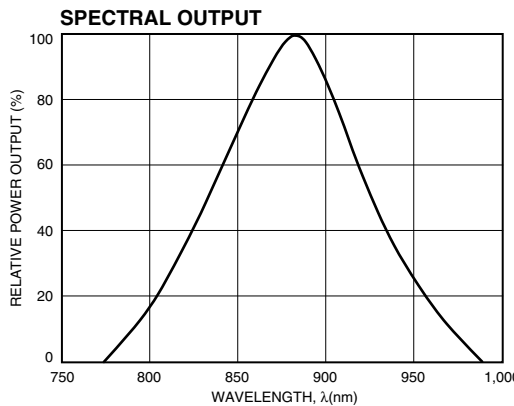
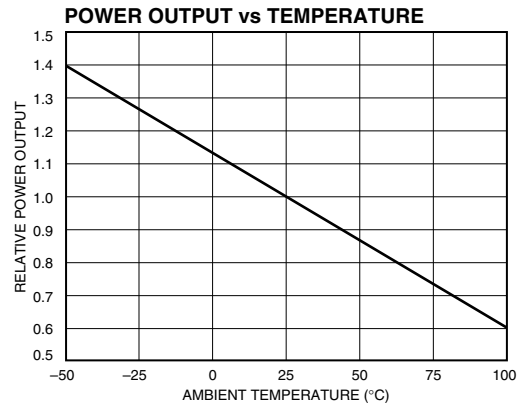
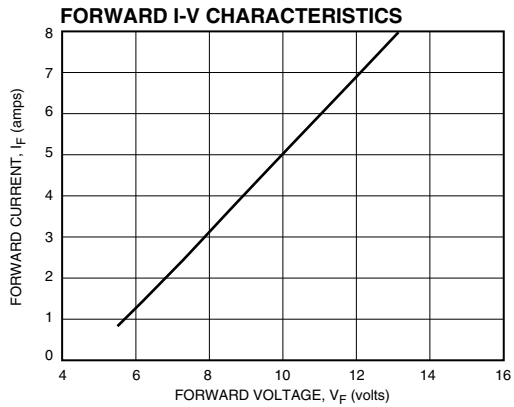
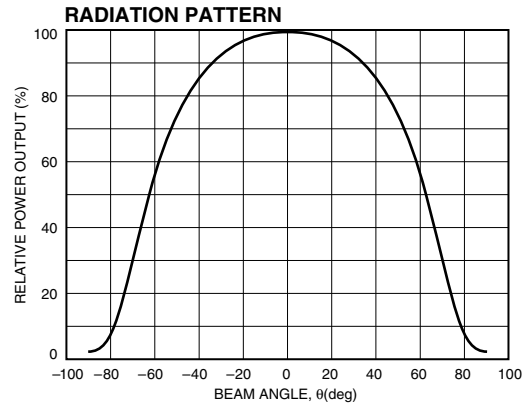
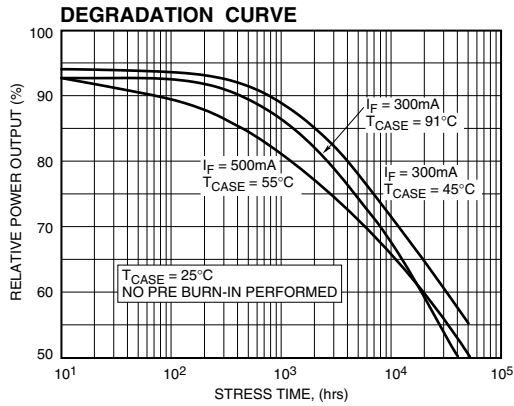
HIGH-POWER GaAlAs IRLED ILLUMINATOR

OD-663

MAXIMUM RATINGS

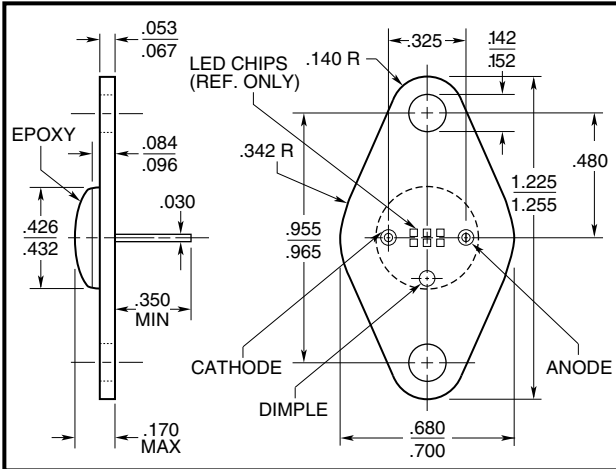


TYPICAL CHARACTERISTICS



HIGH-POWER GaAlAs IRLED ILLUMINATOR

OD-666



FEATURES

- High reliability LPE GaAlAs IRLEDs
- Ultra high power output
- 880nm peak emission
- Six chips connected in series
- Very wide angle of emission
- Electrically isolated case

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|---|-----|-------------|-----|-----------------|
| Total Power Output, P_o | $I_F = 300\text{mA}$ $I_F = 6\text{A}$ | 300 | 330 5000 | | mW |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Half Intensity Beam Angle, θ | | | | 120 | |
| Forward Voltage, V_F | $I_F = 300\text{mA}$ | | 9 | 10 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 15 | | pF |
| Rise Time | | | 2 | | μsec |
| Fall Time | | | 2 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|-------|
| Power Dissipation ¹ | 4W |
| Continuous Forward Current | 400mA |
| Peak Forward Current (10 μs , 400Hz) ² | 6A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|----------------|
| Storage and Operating Temperature Range | -55°C to 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 60°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 16°C/W Typical |

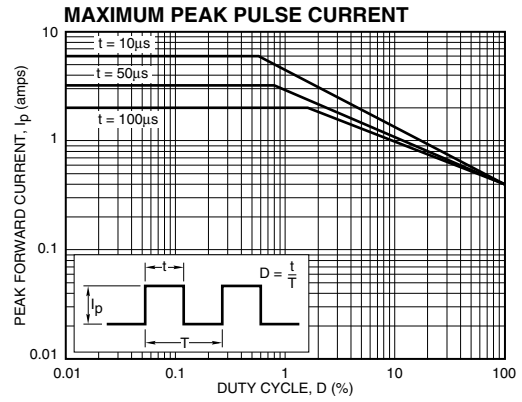
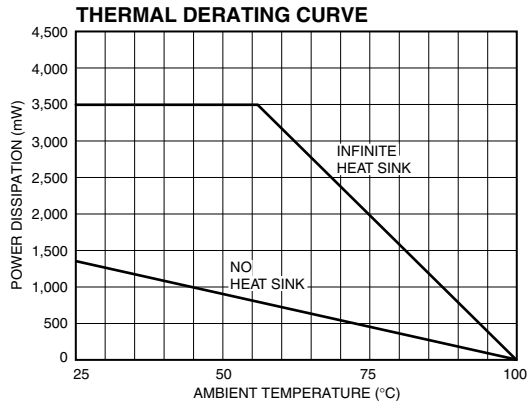
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

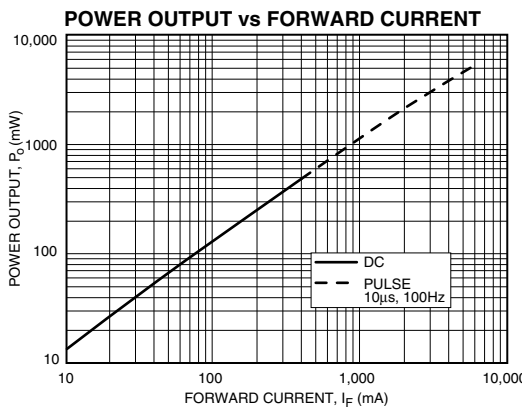
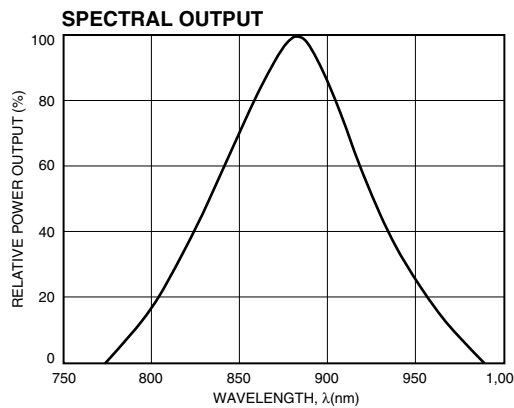
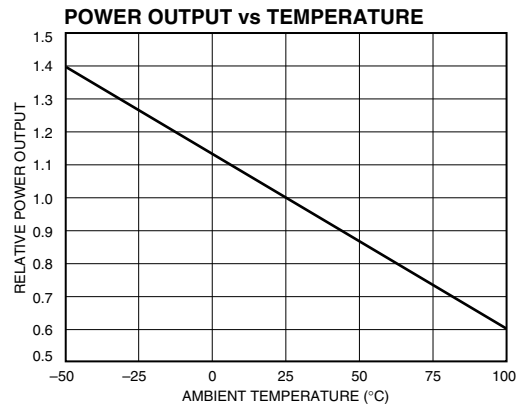
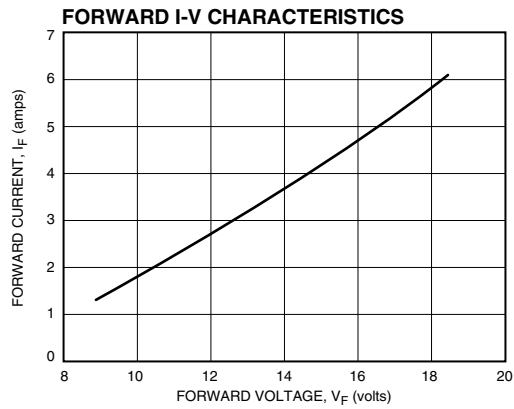
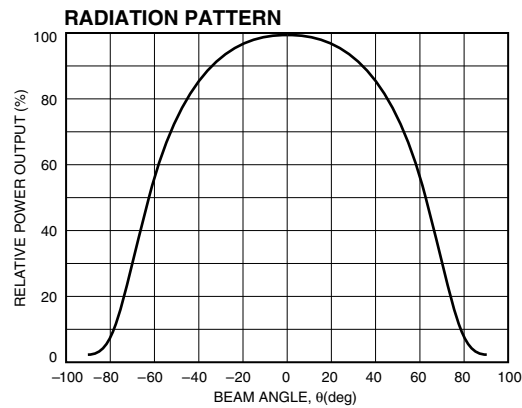
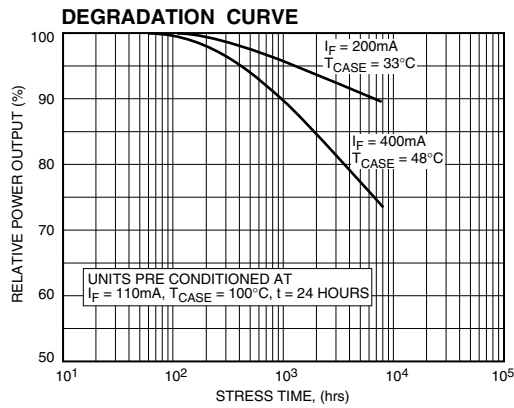
HIGH-POWER GaAlAs IRLED ILLUMINATOR

OD-666

MAXIMUM RATINGS

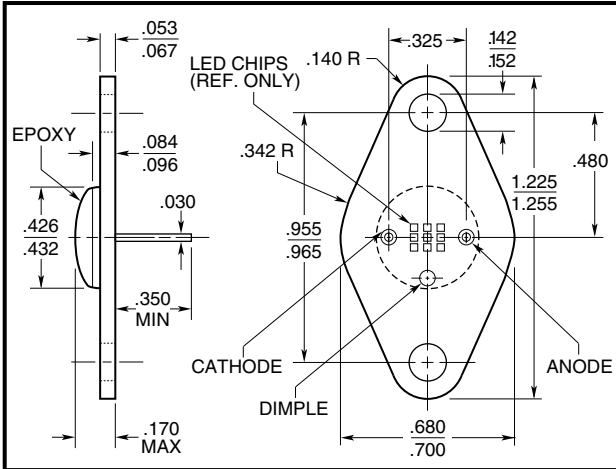


TYPICAL CHARACTERISTICS



HIGH-POWER GaAlAs IRLED ILLUMINATOR

OD-669



FEATURES

- Highest power output available
- 880nm peak emission
- Nine chips connected in series
- Very wide angle of emission
- Electrically isolated case

All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|---|-----|-------------|-----|-----------------|
| Total Power Output, P_o | $I_F = 300\text{mA}$ $I_F = 5\text{A}$ | 390 | 500 6500 | | mW |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Half Intensity Beam Angle, θ | | | | 120 | |
| Forward Voltage, V_F | $I_F = 300\text{mA}$ | | 13.5 | 15 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 11 | | pF |
| Rise Time | | | 3 | | μsec |
| Fall Time | | | 3 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C CASE

| | |
|--|-------|
| Power Dissipation ¹ | 6W |
| Continuous Forward Current | 400mA |
| Peak Forward Current (10 μs , 400Hz) ² | 5A |
| Reverse Voltage | 5V |
| Lead Soldering Temperature (1/16" from case for 10sec) | 240°C |

¹Derate per Thermal Derating Curve above 25°C

²Derate linearly above 25°C

THERMAL PARAMETERS

| | |
|---|----------------|
| Storage and Operating Temperature Range | -55°C to 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 60°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 16°C/W Typical |

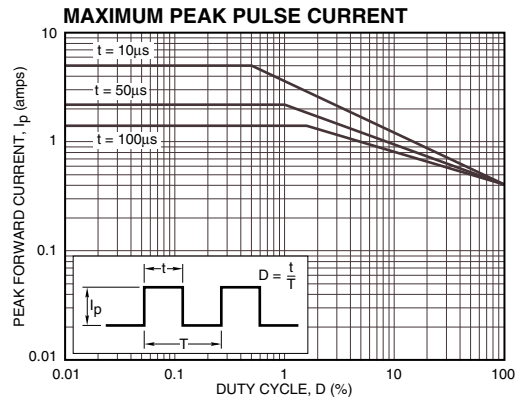
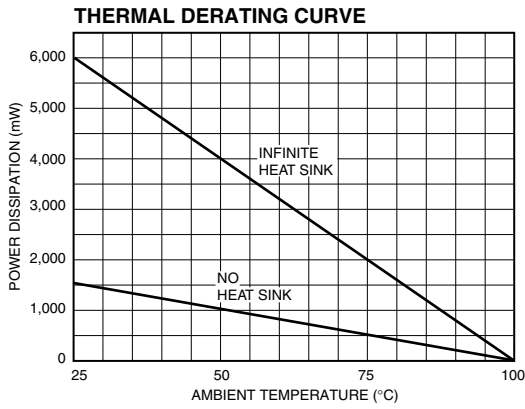
¹Heat transfer minimized by measuring in still air with minimum heat conducting through leads

²Air circulating at a rapid rate to keep case temperature at 25°C

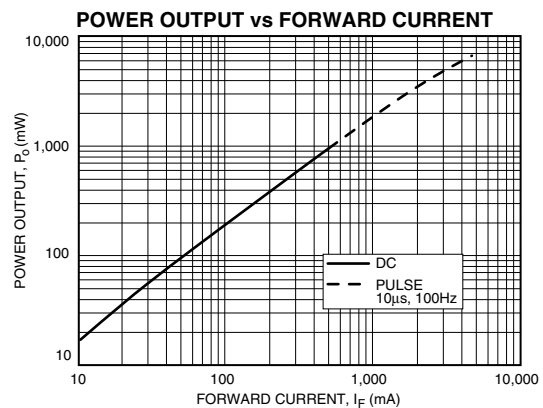
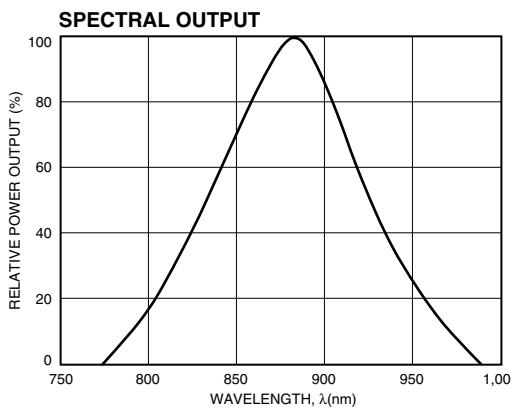
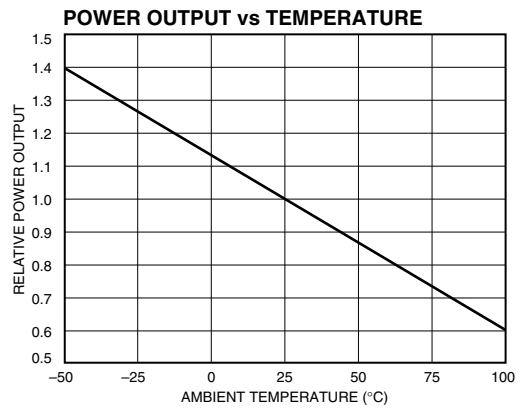
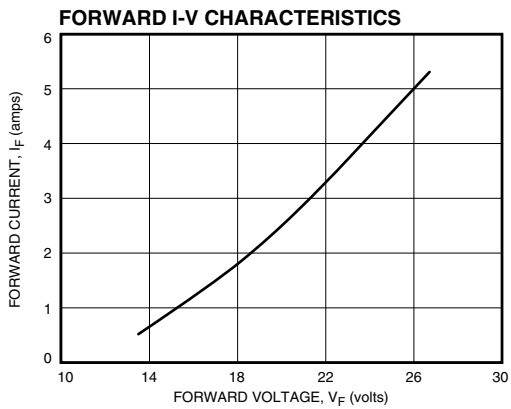
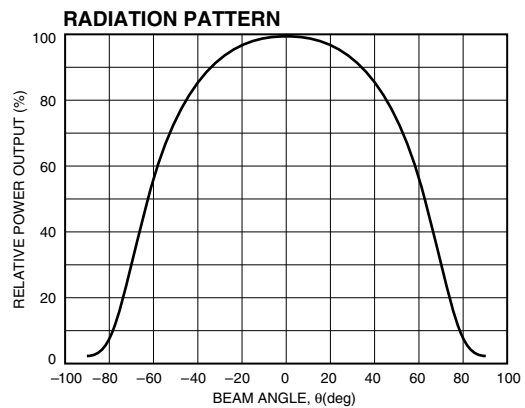
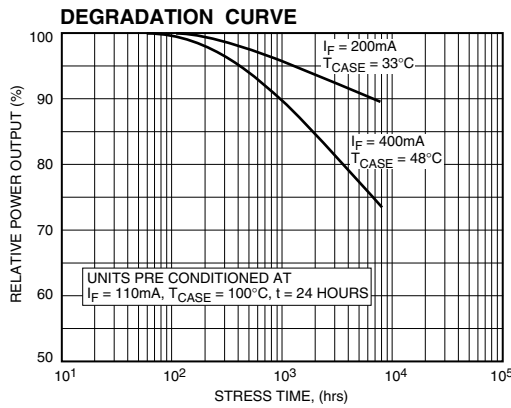
HIGH-POWER GaAlAs IRLED ILLUMINATOR

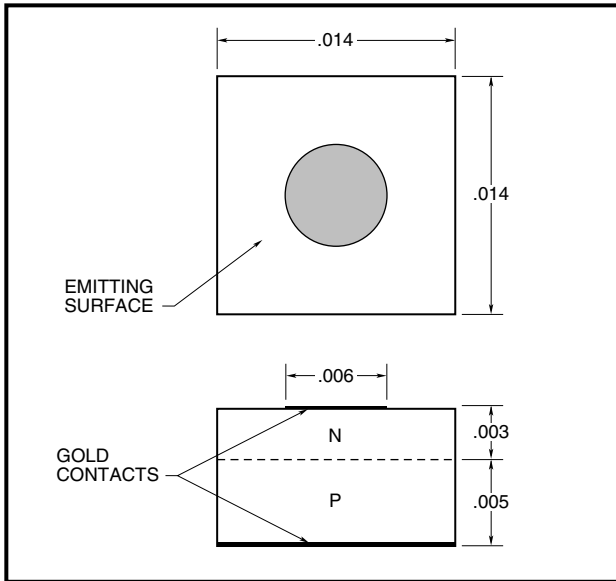
OD-669

MAXIMUM RATINGS



TYPICAL CHARACTERISTICS



HIGH-POWER GaAlAs IR EMITTER CHIPS**OD-880-C****FEATURES**

- High reliability LPE GaAlAs IRLED chips
- Graded-bandgap LED structure for high radiant power output
- 880nm peak emission
- Good ohmic contacts (gold alloys)
- Good bondability

All dimensions are nominal values in inches unless otherwise specified.

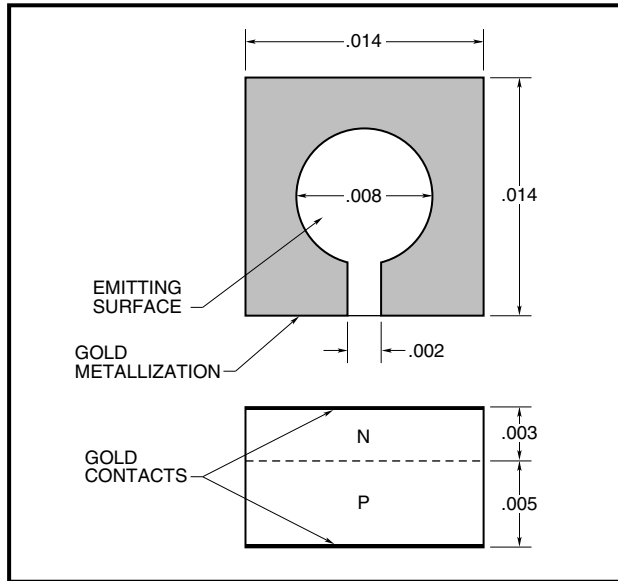
ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|---|-----|---------|-----|-----------------|
| Total Power Output, P_o | $I_F = 100\text{mA}$ $I_F = 20\text{mA}$ | 8 | 14 2 | | mW |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Forward Voltage, V_F | $I_F = 100\text{mA}$ | | 1.55 | 1.9 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 17 | | pF |
| Rise Time | | | 0.5 | | μsec |
| Fall Time | | | 0.5 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C

| | |
|--|----------------|
| Power Dissipation | 190mW |
| Continuous Forward Current | 100mA |
| Peak Forward Current (10 μs , 300 Hz) | 3A |
| Reverse Voltage | 5V |
| Storage and Operating Temperature Range | -65°C to 150°C |
| Maximum Junction Temperature | 150°C |

The exact performance data depends on your package configuration and technique. Data listed in this specification is for the chip mounted on a TO-46 header using silver epoxy as the die attach material. All sales are final after 60 days from the shipment date. Opto Diode must be notified of any discrepancies within this period.

HIGH-POWER GaAIAS IR EMITTER CHIPS**OD-148-C****FEATURES**

- High reliability LPE GaAlAs IRLED chips
- Open center emission for imaging applications
- High output uniformity from emitting surfaces
- Gold contacts for high reliability bonding

All dimensions are nominal values in inches unless otherwise specified.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|-----------------------|-----|------|-----|-----------------|
| Total Power Output, P_o | $I_F = 100\text{mA}$ | 6 | 8 | | mW |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Forward Voltage, V_F | $I_F = 100\text{mA}$ | | 1.55 | 1.9 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 17 | | pF |
| Rise Time | | | 0.5 | | μsec |
| Fall Time | | | 0.5 | | μsec |

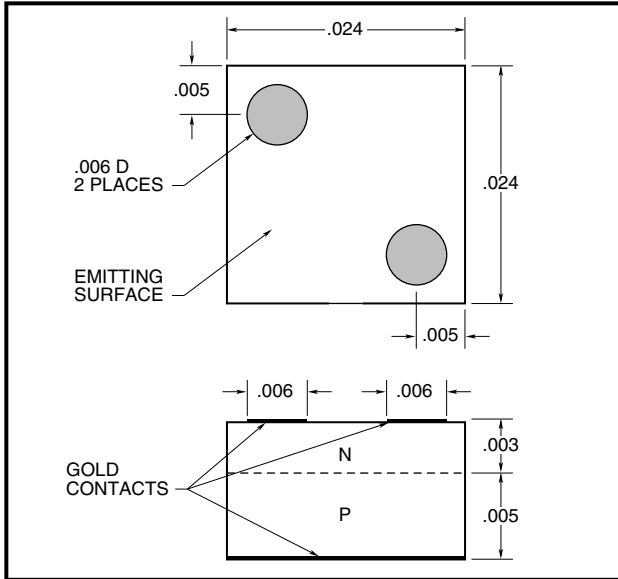
ABSOLUTE MAXIMUM RATINGS AT 25°C

| | |
|--|----------------|
| Power Dissipation | 190mW |
| Continuous Forward Current | 100mA |
| Peak Forward Current (10 μs , 300 Hz) | 3A |
| Reverse Voltage | 5V |
| Storage and Operating Temperature Range | -65°C to 150°C |
| Maximum Junction Temperature | 150°C |

The exact performance data depends on your package configuration and technique. Data listed in this specification is for the chip mounted on a TO-46 header using silver epoxy as the die attach material. All sales are final after 60 days from the shipment date. Opto Diode must be notified of any discrepancies within this period.

HIGH-POWER GaAIAs EMITTER CHIPS

OD-24X24-C



FEATURES

- High current capability
- 2 bond pads for uniform output
- Gold contacts for high reliability bonding
- High reliability LPE GaAIAs IRLED chips

All dimensions are nominal values in inches unless otherwise specified.

ELECTRO-OPTICAL CHARACTERISTICS AT 25°C

| PARAMETERS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|--|-----------------------|-----|-----|-----|-----------------|
| Total Power Output, P_o | $I_F = 100\text{mA}$ | 7 | 10 | | mW |
| Peak Emission Wavelength, λ_p | $I_F = 50\text{mA}$ | | 880 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | | | 80 | | nm |
| Forward Voltage, V_F | $I_F = 200\text{mA}$ | | 1.6 | 2 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10\mu\text{A}$ | 5 | 30 | | Volts |
| Capacitance, C | $V_R = 0\text{V}$ | | 60 | | pF |
| Rise Time | | | 0.7 | | μsec |
| Fall Time | | | 0.7 | | μsec |

ABSOLUTE MAXIMUM RATINGS AT 25°C

| | |
|--|----------------|
| Power Dissipation | 400mW |
| Continuous Forward Current | 200mA |
| Peak Forward Current (10 μs , 300 Hz) | 7A |
| Reverse Voltage | 5V |
| Storage and Operating Temperature Range | -65°C to 150°C |
| Maximum Junction Temperature | 150°C |

The exact performance data depends on your package configuration and technique. Data listed in this specification is for the chip mounted on a TO-46 header using silver epoxy as the die attach material. All sales are final after 60 days from the shipment date. Opto Diode must be notified of any discrepancies within this period.