



| Parameter | Rating | Units |
|------------------------------------|--------|-------|
| Breakdown Voltage - BV_{CEO} | 30 | V_P |
| Current Transfer Ratio - CTR (Typ) | 300 | % |
| Saturation Voltage - $V_{CE(sat)}$ | 0.5 | V |
| Input Control Current - I_F | 1 | mA |

Features

- Unidirectional Input
- Small 8-Pin Package
- 100mA Continuous Load Rating
- 3750V_{rms} Input/Output Isolation
- Machine Insertable, Wave Solderable

Applications

- Telecom Switching
- Tip/Ring Circuits
- Modem Switching (Laptop, Notebook, Pocket Size)
- Loop Detect
- Ringing Detect
- Current Sensing

Description

LDA203 is a dual unidirectional optocoupler with single transistor outputs. Current transfer ratios range from 33% to 1000% with a typical value of 300%.

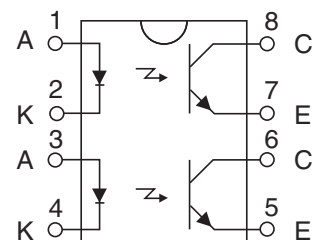
Approvals

- UL Recognized Component: File # E76270
- CSA Certified Component: Certificate # 1175739

Ordering Information

| Part Number | Description |
|-------------|---------------------------------|
| LDA203 | 8-Pin DIP (50/tube) |
| LDA203S | 8-Pin Surface Mount (50/tube) |
| LDA203STR | 8-Pin Surface Mount (1000/Reel) |

Pin Configuration



Absolute Maximum Ratings

| Parameter | Ratings | Units |
|-------------------------------------|-------------|------------------|
| Breakdown Voltage | 30 | V _P |
| Reverse Input Voltage | 5 | V |
| Input Control Current | 100 | mA |
| Peak (10ms) | 1 | A |
| Power Dissipation | | |
| Input (each) ¹ | 150 | mW |
| Phototransistor (each) ² | 150 | mW |
| Isolation Voltage Input to Output | 3750 | V _{rms} |
| Operational Temperature | -40 to +85 | °C |
| Storage Temperature | -40 to +125 | °C |

Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at conditions beyond those indicated in the operational sections of this data sheet is not implied.

¹ Derate Linearly 1.33 mW/°C

² Derate Linearly 2.0 mW/°C

Electrical absolute maximum ratings are at 25°C

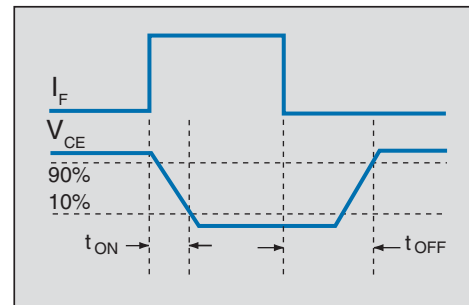
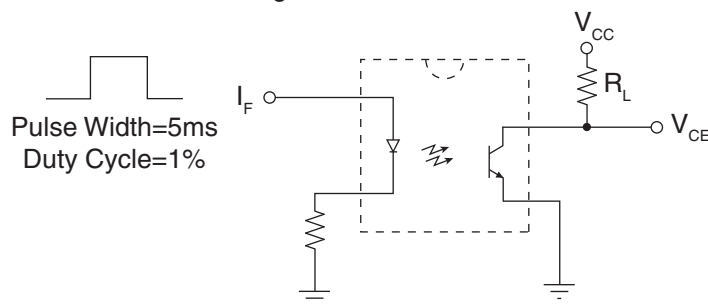
Electrical Characteristics

| Parameter | Conditions | Symbol | Min | Typ | Max | Units |
|--------------------------------------|---|----------------------|-----|-----|------|-------|
| Output Characteristics @ 25°C | | | | | | |
| Phototransistor Breakdown Voltage | I _C = 10μA | BV _{CEO} | 30 | 85 | - | V |
| Phototransistor Dark Current | V _{CEO} = 5V, I _F = 0mA | I _{CEO} | - | 10 | 500 | nA |
| Saturation Voltage | I _C = 2mA, I _F = 1mA | V _{CE(sat)} | - | 0.3 | 0.5 | V |
| Current Transfer Ratio | I _F = 1mA, V _{CE} = 0.5V | CTR | 33 | 300 | 1000 | % |
| Output Capacitance | 25V, f = 1MHz | C _{OUT} | - | 6 | - | pF |
| Input Characteristics @ 25°C | | | | | | |
| Input Control Current | I _C = 0.33mA, V _{CE} = 0.5V | I _F | - | - | 1 | mA |
| Input Voltage Drop | I _F = 5mA | V _F | 0.9 | 1.2 | 1.4 | V |
| Reverse Input Current | V _R = 5V | I _R | - | - | 10 | μA |
| Common Characteristics @ 25°C | | | | | | |
| Capacitance Input to Output | - | C _{I/O} | - | 3 | - | pF |

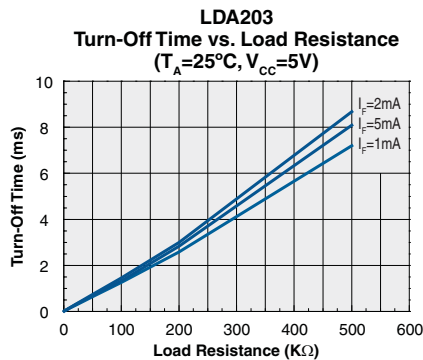
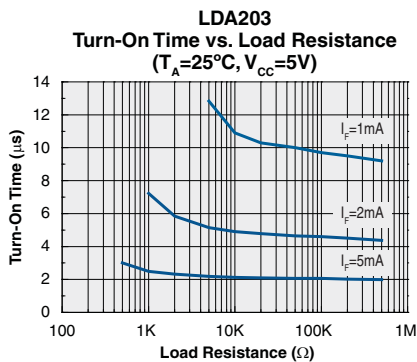
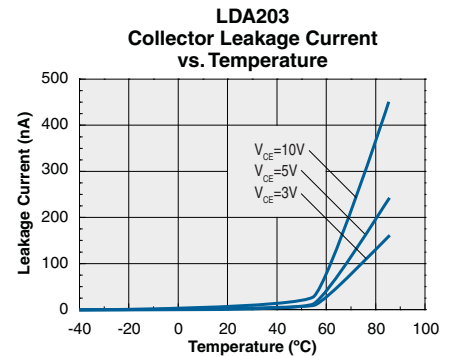
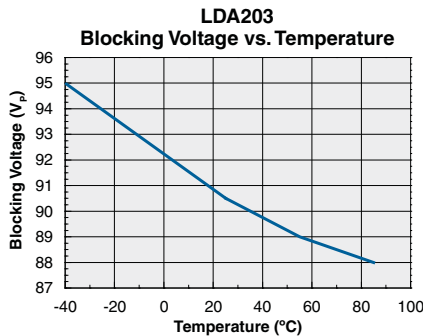
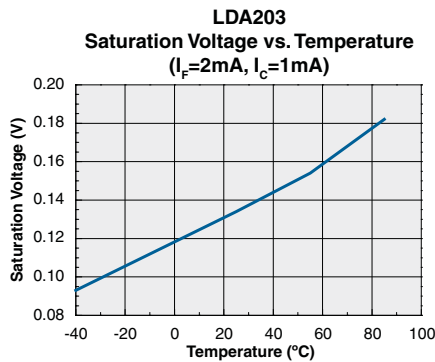
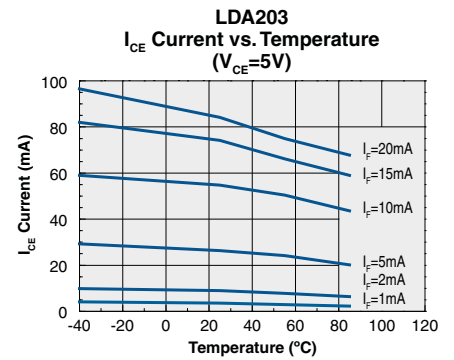
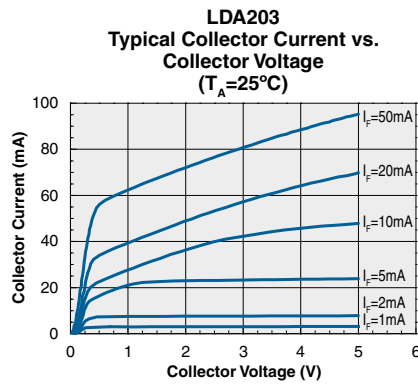
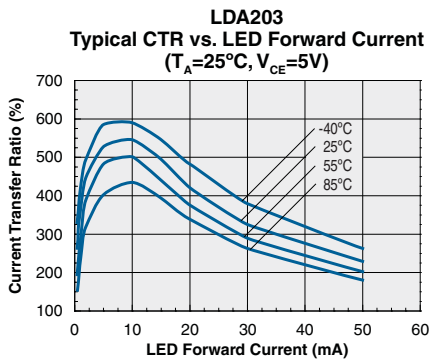
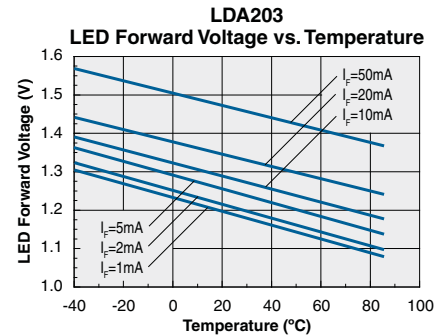
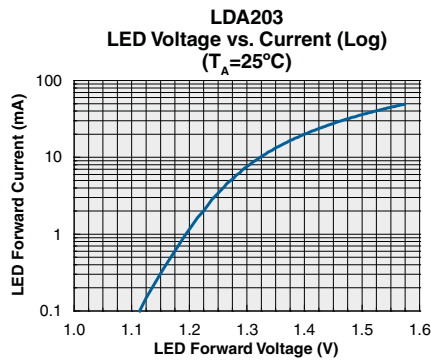
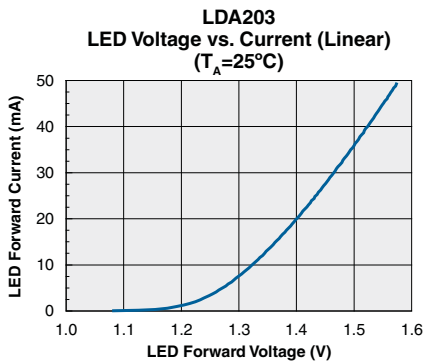
Switching Characteristics @ 25°C

| Characteristic | Symbol | Test Condition | Typ | Units |
|----------------|------------------|---|-----|-------|
| Turn-On Time | t _{ON} | V _{CC} =5V, I _F =2mA, R _L =1KΩ | 7 | μs |
| Turn-Off Time | t _{OFF} | | 20 | |

Switching Time Test Circuit



PERFORMANCE DATA*



*The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

MANUFACTURING INFORMATION

Soldering

For proper assembly, the component must be processed in accordance with the current revision of IPC/JEDEC standard J-STD-020. Failure to follow the recommended guidelines may cause permanent damage to the device resulting in impaired performance and/or a reduced lifetime expectancy.

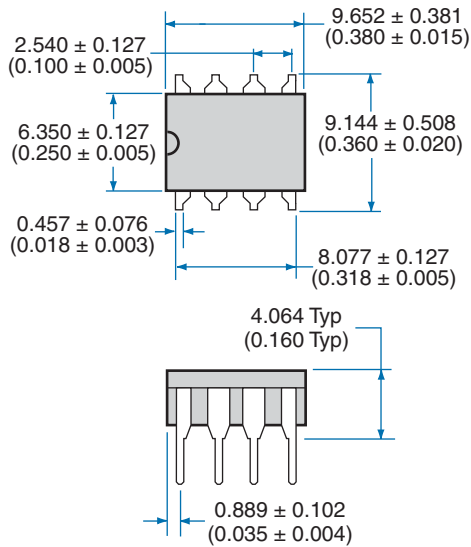
Washing

Clare does not recommend ultrasonic cleaning or the use of chlorinated solvents.

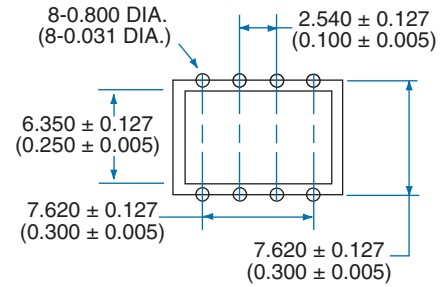


MECHANICAL DIMENSIONS

8-Pin DIP Through-Hole Package

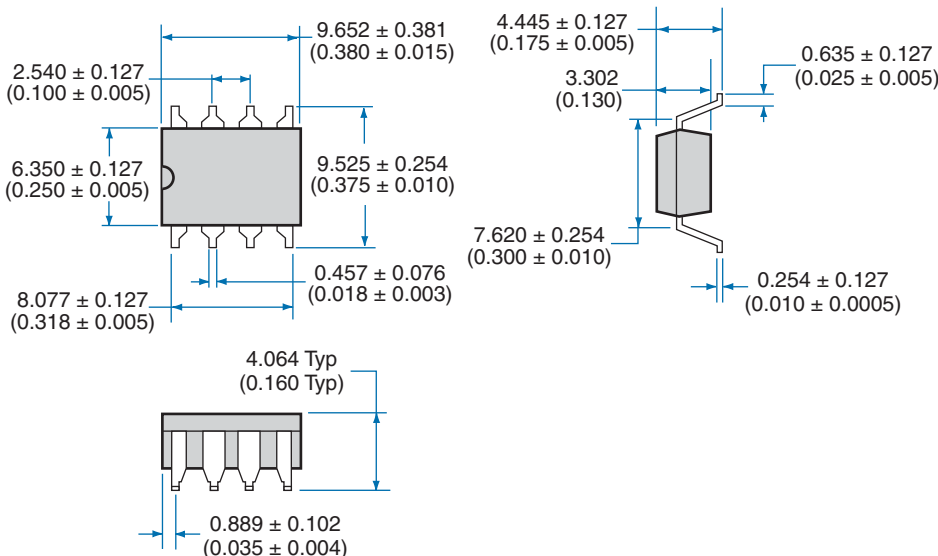


PC Board Pattern

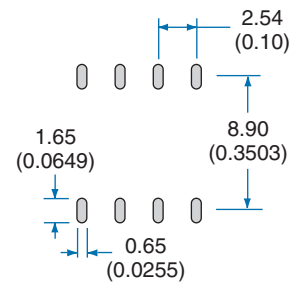


Dimensions
mm
(inches)

8-Pin Surface Mount Package

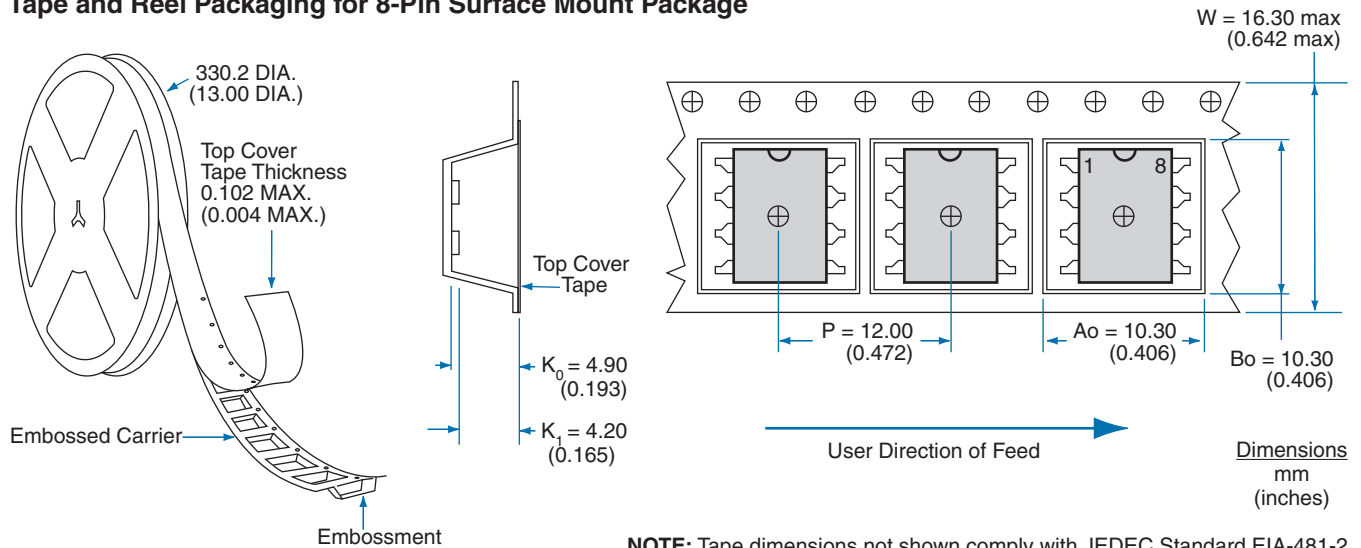


Recommended PCB Land Pattern



Dimensions
mm
(inches)

Tape and Reel Packaging for 8-Pin Surface Mount Package



NOTE: Tape dimensions not shown comply with JEDEC Standard EIA-481-2

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