



| ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | |
|--|-----------------------------|------------|-------------|------------------------|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
| INPUT | | | | |
| Peak reverse voltage | | V_R | 6.0 | V |
| Forward current | | I_F | 60 | mA |
| Peak pulsed current | 1.0 μs , 300 pps | | 3.0 | A |
| Continuous forward current per channel | | | 30 | mA |
| Power dissipation | | P_{diss} | 45 | mW |
| Derate linearly from 25 $^{\circ}\text{C}$ | | | 0.4 | mW/ $^{\circ}\text{C}$ |
| OUTPUT | | | | |
| Collector emitter breakdown voltage | | BV_{CEO} | 30 | V |
| Emitter collector breakdown voltage | | BV_{ECO} | 5.0 | V |
| Power dissipation per channel | | P_{diss} | 75 | mW |
| Derate linearly from 25 $^{\circ}\text{C}$ | | | 3.1 | mW/ $^{\circ}\text{C}$ |
| COUPLER | | | | |
| Isolation test voltage | $t = 1.0\text{ s}$ | V_{ISO} | 4000 | V_{RMS} |
| Total package dissipation (2 LEDs and 2 detectors, 2 channels) | | P_{tot} | 250 | mW |
| Derate linearly from 25 $^{\circ}\text{C}$ | | | 2.0 | mW/ $^{\circ}\text{C}$ |
| Storage temperature | | T_{stg} | -55 to +150 | $^{\circ}\text{C}$ |
| Operating temperature | | T_{amb} | -55 to +100 | $^{\circ}\text{C}$ |
| Soldering temperature ⁽¹⁾ | | T_{slid} | 260 | $^{\circ}\text{C}$ |

Notes

- Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of this document. Exposure to absolute maximum ratings for extended periods of the time can adversely affect reliability.
- ⁽¹⁾ Refer to reflow profile for soldering conditions for surface mounted devices (SOP/SOIC)

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | | |
|--|--|---------|-------------|------|------|------|---------------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| INPUT | | | | | | | |
| Forward voltage | $I_F = 10\text{ mA}$ | | V_F | - | - | 1.3 | V |
| Reverse current | $V_R = 6.0\text{ V}$ | | I_R | - | 0.1 | 100 | μA |
| Capacitance | $V_F = 0\text{ V}$, $f = 1.0\text{ MHz}$ | | C_O | - | 25 | - | pF |
| OUTPUT | | | | | | | |
| Collector emitter breakdown voltage | $I_C = 10\text{ }\mu\text{A}$ | | BV_{CEO} | 30 | - | - | V |
| Emitter collector breakdown voltage | $I_C = 10\text{ }\mu\text{A}$ | | BV_{ECO} | 5.0 | - | - | V |
| Collector emitter leakage current | $V_{CE} = 50\text{ V}$, $I_F = 0\text{ A}$ | | I_{CEO} | - | - | 50 | nA |
| Collector emitter capacitance | $V_{CE} = 5.0\text{ V}$ | | C_{CE} | - | 3.4 | - | pF |
| COUPLER | | | | | | | |
| Capacitance (input to output) | | ILD223T | C_{IO} | 0.5 | - | - | pF |
| Saturation voltage, collector emitter | $I_F = 1.0\text{ mA}$, $I_{CE} = 0.5\text{ mA}$ | ILD223T | V_{CEsat} | - | - | 1.0 | V |
| Resistance, input to output | | ILD223T | C_{IO} | 100 | - | - | G Ω |

Note

- Minimum and maximum values are testing requirements. Typical values are characteristics of the device and are the result of engineering evaluation. Typical values are for information only and are not part of the testing requirements.

| CURRENT TRANSFER RATIO | | | | | | |
|-------------------------------|---|------------|------|------|------|------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| I_C/I_F | $I_F = 1.0\text{ mA}$, $V_{CE} = 5.0\text{ V}$ | CTR_{DC} | 500 | - | - | % |

SWITCHING CHARACTERISTICS

| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---------------|--|---------|-----------|------|------|------|---------------|
| Turn-on time | $V_{CC} = 10\text{ V}, R_L = 100\ \Omega, I_F = 5.0\text{ mA}$ | ILD223T | t_{on} | 15 | - | - | μs |
| Turn-off time | $V_{CC} = 10\text{ V}, R_L = 100\ \Omega, I_F = 5.0\text{ mA}$ | ILD223T | t_{off} | 30 | - | - | μs |

SAFETY AND INSULATION RATINGS

| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|----------------------------|----------------------------|--------|------|---------------|------|--------------------|
| Climatic classification | According to IEC 68 part 1 | | - | 55 / 100 / 21 | - | |
| Comparative tracking index | | CTI | 175 | - | 399 | |
| V_{IOTM} | | | 6000 | - | - | V |
| V_{IORM} | | | 560 | - | - | V |
| PSO | | | - | - | 350 | mW |
| I_{SI} | | | - | - | 150 | mA |
| T_{SI} | | | - | - | 165 | $^{\circ}\text{C}$ |
| Creepage distance | | | 4 | - | - | mm |
| Clearance distance | | | 4 | - | - | mm |
| Insulation thickness | | | 0.2 | - | - | mm |

Note

- As per IEC 60747-5-5, §7.4.3.8.2, this optocoupler is suitable for “safe electrical insulation” only within the safety ratings. Compliance with the safety ratings shall be ensured by means of protective circuits.

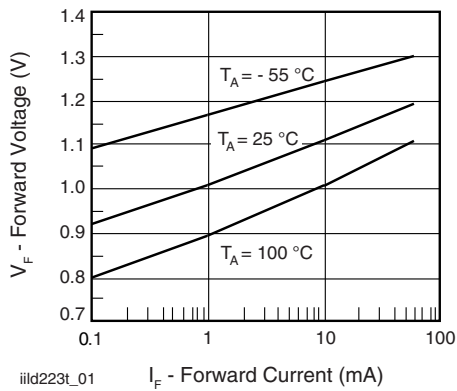
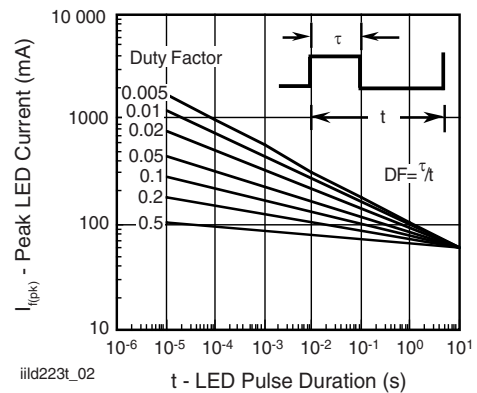
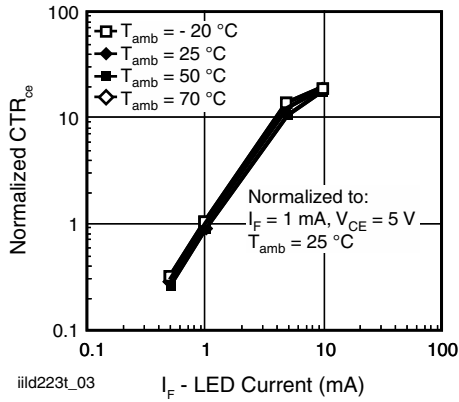
TYPICAL CHARACTERISTICS ($T_{amb} = 25\ ^{\circ}\text{C}$, unless otherwise specified)

 iild223t_01 I_F - Forward Current (mA)

Fig. 1 - Forward Voltage vs. Forward Current



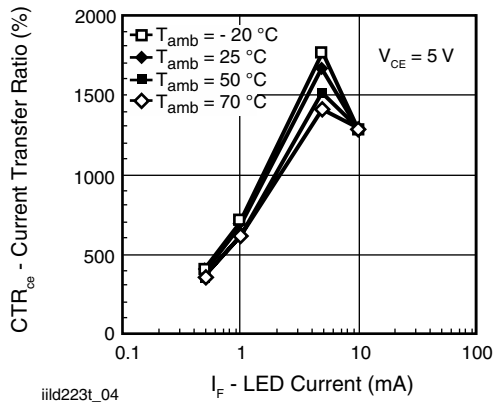
iild223t_02

 Fig. 2 - Peak LED Current vs. Duty Factor, t



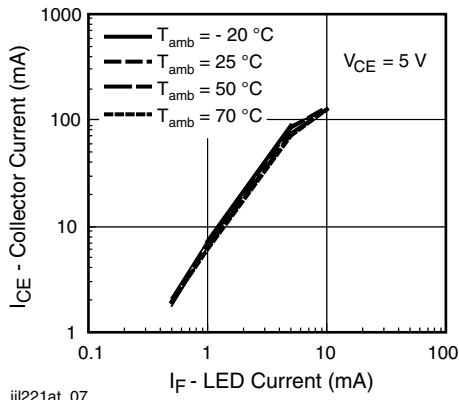
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Fig. 3 - Normalized CTR_{CE} vs. LED Current



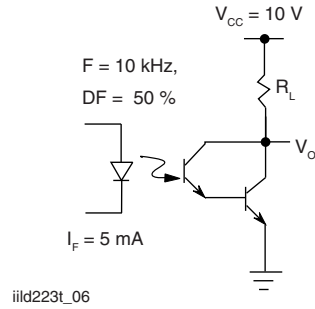
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Fig. 4 - CTR vs. LED Current



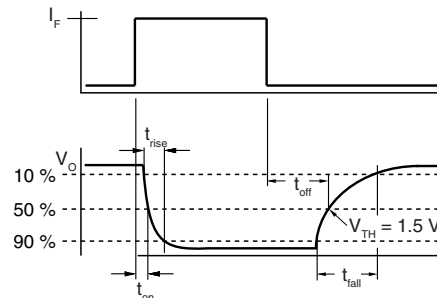
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Fig. 5 - Collector Current vs. LED Current



iiid223t_06

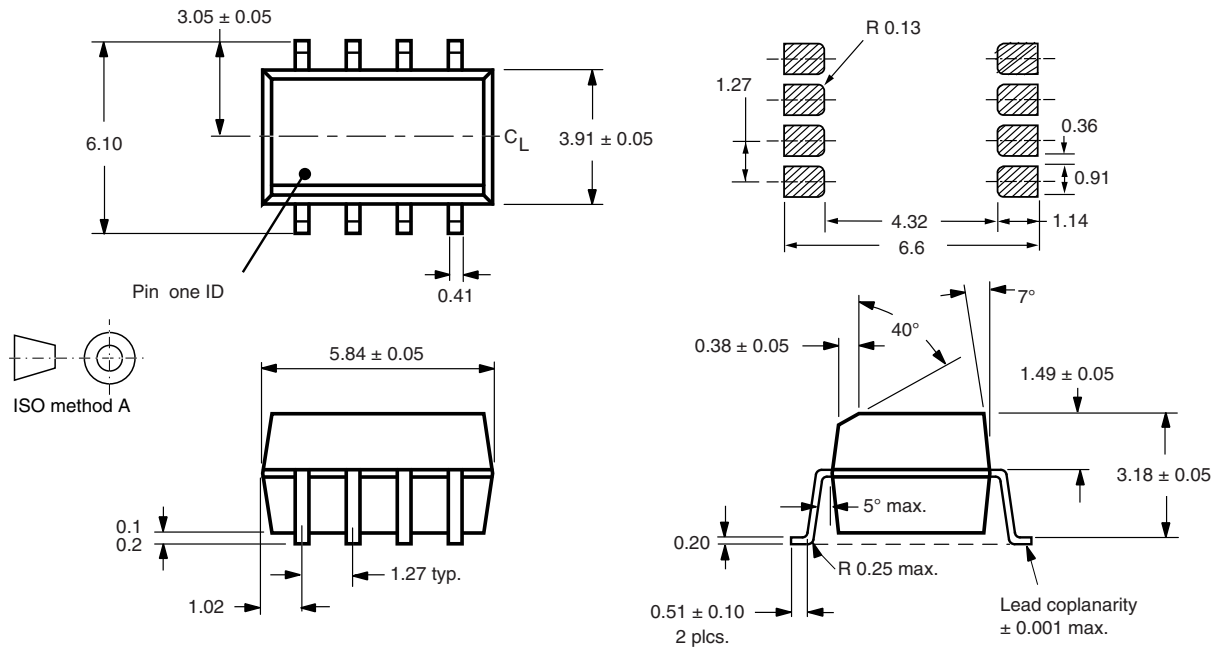
Fig. 6 - Switching Schematic



iiid223t_07

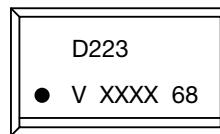
Fig. 7 - Switching Timing

PACKAGE DIMENSIONS in inches (millimeters)



i178020

PACKAGE MARKING (example)



Notes

- XXXX = LMC (lot marking code)
- Tape and reel suffix (T) is not part of the package marking



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