



| ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified) | | | | |
|---|---|-------------------|--------------------|------------------|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
| INPUT | | | | |
| Power dissipation | | P _{diss} | 100 | mW |
| Forward current | | I _F | 60 | mA |
| OUTPUT | | | | |
| Collector emitter voltage | | V _{CE} | 80 | V |
| Emitter collector voltage | | V _{EC} | 7 | V |
| Collector current | | I _C | 50 | mA |
| | t _p /T = 0.5, t _p < 10 ms | I _C | 100 | mA |
| Power dissipation | | P _{diss} | 150 | mW |
| COUPLER | | | | |
| Isolation test voltage between emitter and detector | | V _{ISO} | 3750 | V _{RMS} |
| Isolation resistance | V _{IO} = 500 V, T _{amb} = 25 °C | R _{IO} | ≥ 10 ¹² | Ω |
| | V _{IO} = 500 V, T _{amb} = 100 °C | R _{IO} | ≥ 10 ¹¹ | Ω |
| Storage temperature range | | T _{stg} | - 40 to + 125 | °C |
| Ambient temperature range | | T _{amb} | - 40 to + 110 | °C |
| Junction temperature | | T _j | 125 | °C |
| Soldering temperature ⁽¹⁾ | max. 10 s, dip soldering distance to seating plane ≥ 1.5 mm | T _{slid} | 260 | °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.

| ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified) | | | | | | | |
|---|---|-----------|--------------------|------|------|------|------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| INPUT | | | | | | | |
| Forward voltage | I _F = ± 5 mA | | V _F | | 1.16 | 1.5 | V |
| Capacitance | V _R = 0 V, f = 1 MHz | | C _O | | 25 | | pF |
| OUTPUT | | | | | | | |
| Collector emitter leakage current | V _{CE} = 10 V | | I _{CEO} | | 10 | 200 | nA |
| Collector emitter capacitance | V _{CE} = 5 V, f = 1 MHz | | C _{CE} | | 7 | | pF |
| COUPLER | | | | | | | |
| Collector emitter saturation voltage | I _C = 0.32 mA, I _F = ± 1 mA | VOS628A-2 | V _{CEsat} | | 0.25 | 0.4 | V |
| | I _C = 0.5 mA, I _F = ± 1 mA | VOS628A-3 | V _{CEsat} | | 0.25 | 0.4 | V |
| | I _C = 0.8 mA, I _F = ± 1 mA | VOS628A-4 | V _{CEsat} | | 0.25 | 0.4 | V |
| Coupling capacitance | | | C _C | | 0.25 | | pF |

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 (T _{amb} = 25 °C, unless otherwise specified) | | | | | | | |
|---|--|-----------|--------|------|------|------|------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| I _C /I _F | I _F = ± 1 mA, V _{CE} = 5 V | VOS628A-2 | CTR | 63 | | 125 | % |
| | | VOS628A-3 | CTR | 100 | | 200 | % |
| | | VOS628A-4 | CTR | 160 | | 320 | % |

| SWITCHING CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | |
|---|---|-----------|------|------|------|---------------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Turn on time | $V_{CC} = 5\text{ V}$, $I_C = 2\text{ mA}$, $R_L = 100\ \Omega$ | t_{on} | | 6 | | μs |
| Rise time | $V_{CC} = 5\text{ V}$, $I_C = 2\text{ mA}$, $R_L = 100\ \Omega$ | t_r | | 3.5 | | μs |
| Turn off time | $V_{CC} = 5\text{ V}$, $I_C = 2\text{ mA}$, $R_L = 100\ \Omega$ | t_{off} | | 5.5 | | μs |
| Fall time | $V_{CC} = 5\text{ V}$, $I_C = 2\text{ mA}$, $R_L = 100\ \Omega$ | t_f | | 5 | | μs |



Fig. 1 - Test Circuit



Fig. 2 - Test Circuit and Waveforms

| SAFETY AND INSULATION RATINGS | | | | | | |
|--|---|--------|------|-----------|------|--------------------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Climatic classification (according to IEC 68 part 1) | | | | 40/110/21 | | |
| Comparative tracking index | | CTI | 175 | | 399 | |
| V_{IOTM} | | | 6000 | | | V_{peak} |
| V_{IORM} | | | 707 | | | V_{peak} |
| P_{SO} | | | | | 265 | mW |
| I_{SI} | | | | | 130 | mA |
| T_{SI} | | | | | 150 | $^{\circ}\text{C}$ |
| Creepage distance | | | 5 | | | mm |
| Clearance distance | | | 5 | | | mm |
| Insulation thickness | Reinforce rated, per IEC 60950 2.10.5.1 | | 0.4 | | | mm |

Note

- As per IEC 60747-5-2, §7.4.3.8.1, 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 ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

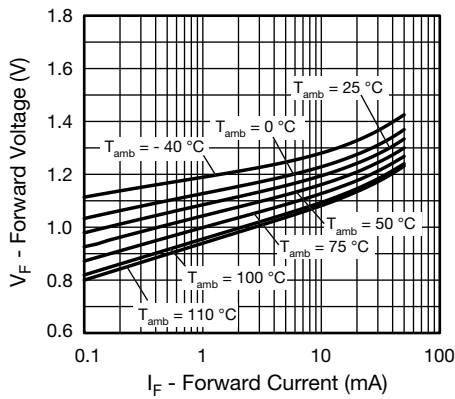


Fig. 3 - Forward Voltage vs. Forward Current

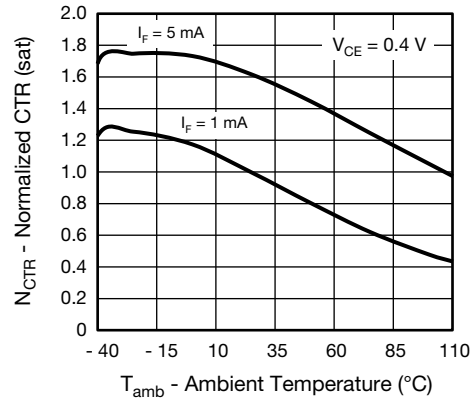


Fig. 6 - Normalized CTR (sat) vs. Ambient Temperature

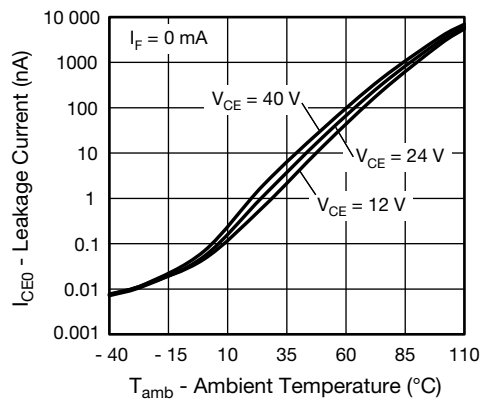


Fig. 4 - Leakage Current vs. Ambient Temperature

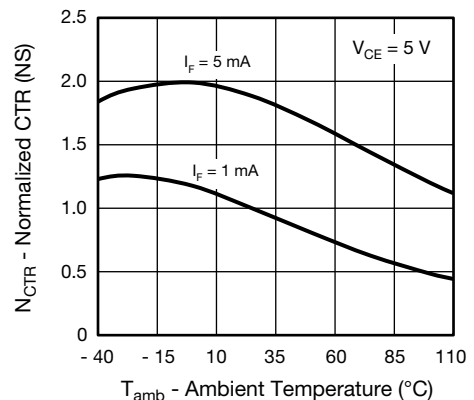


Fig. 7 - Normalized CTR (NS) vs. Ambient Temperature

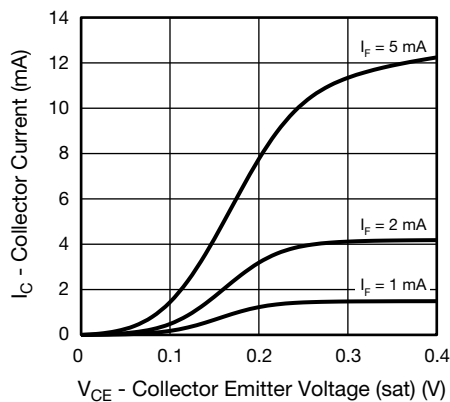


Fig. 5 - Collector Current vs. Collector Emitter Voltage (sat)

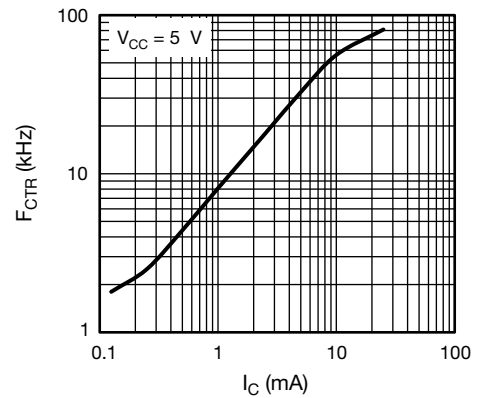
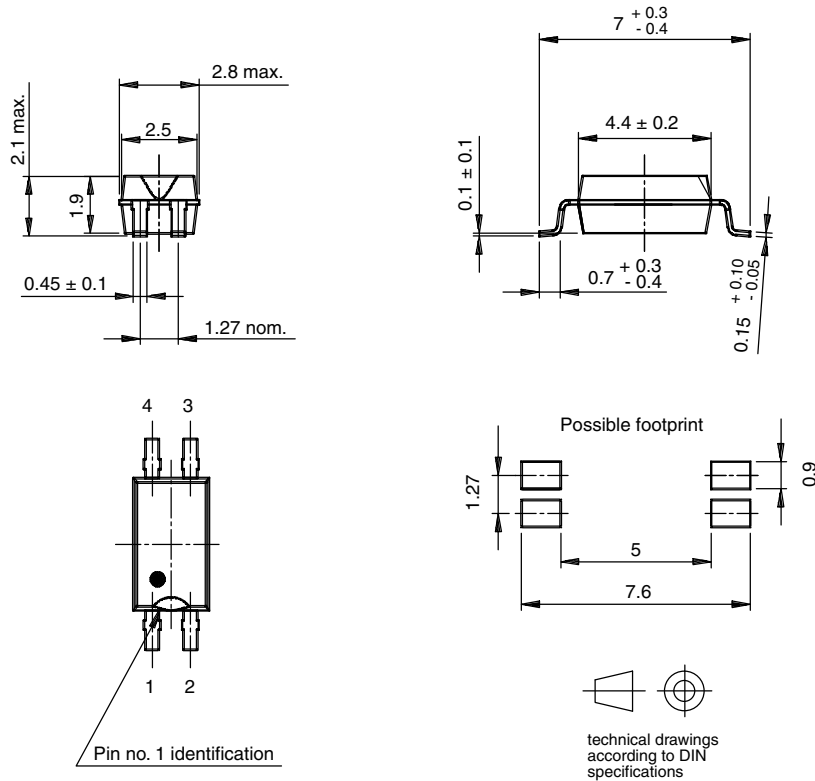


Fig. 8 - F_{CTR} vs. I_C



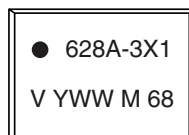
Fig. 9 - F_{CTR} vs. Phase Angle

PACKAGE DIMENSIONS in millimeters



16283

PACKAGE MARKING (example)



Notes

- Only option 1 is reflected in the package marking, it is indicated by the characters "X1".
- Tape and reel suffix (T) is not part of the package marking.



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