



| ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified) | | | | |
|--|---|-------------------|--------------------|------------------|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
| OUTPUT | | | | |
| Supply voltage | | V _S | - 0.5 to 30 | V |
| Output voltage | | V _O | - 0.5 to 25 | V |
| Collector output current | | I _{CO} | 8 | mA |
| Derate linearly from 25 °C | | | 1.33 | mW/°C |
| Power dissipation | T _{amb} ≤ 70 °C | P _{diss} | 50 | mW |
| COUPLER | | | | |
| Isolation test voltage | t = 1 s | V _{ISO} | 5300 | V _{RMS} |
| Pollution degree (DIN VDE0109) | | | 2 | |
| Creepage distance | | | ≥ 7 | mm |
| Clearance distance | | | ≥ 7 | mm |
| Derate linearly from 25 °C | | | 1.93 | mW/°C |
| Total package dissipation | | P _{tot} | 145 | mW |
| Comparative tracking index per DIN IEC112/VDE0303 part 1, group IIIa per DIN VDE6110 | | | 175 | |
| 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} | - 55 to + 125 | °C |
| Ambient temperature range | | T _{amb} | - 55 to +100 | °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 (SMD). Refer to wave profile for soldering conditions for through hole devices (DIP).

| ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified) | | | | | | | |
|---|--|---------|------------------------------------|------|-------|------|-------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| INPUT ⁽¹⁾ | | | | | | | |
| Forward voltage | I _F = 16 mA | | V _F | | 1.33 | 1.9 | V |
| Breakdown voltage | I _R = 10 μA | | V _{BR} | 4.5 | | | V |
| Reverse current | V _R = 4.5 V | | I _R | | 0.5 | 10 | μA |
| Capacitance | V _R = 0 V, f = 1 MHz | | C _O | | 30 | | pF |
| Temperature coefficient of forward voltage | I _F = 16 mA | | ΔV _F /ΔT _{amb} | | - 1.7 | | mV/°C |
| OUTPUT | | | | | | | |
| Logic low supply current | I _F = 16 mA, V _O = open, V _{CC} = 4.5 V | | I _{CCL} | | 100 | 200 | μA |
| Supply current, logic high | I _F = 0 mA, V _O = open, V _{CC} = 15 V | | I _{CCH} | | 0.01 | 4 | μA |
| Logic low output voltage | I _F = 16 mA, V _{CC} = 4.5 V, I _O = 1.1 mA | SFH6325 | V _{OL} | | 0.1 | 0.5 | V |
| | I _F = 16 mA, V _{CC} = 4.5 V, I _O = 3 mA | SFH6326 | V _{OL} | | 0.1 | 0.5 | V |
| Logic high output current | I _F = 0 mA, V _O = V _{CC} = 5.5 V | | I _{OH} | | 3 | 500 | nA |
| | I _F = 0 mA, V _O = V _{CC} = 15 V | | I _{OH} | | | 50 | μA |
| Channel to channel ⁽²⁾ crosstalk | I _F = 16 mA, V _O = V _{CC} = 5.5 V | | I _{OH-XT} | | | 500 | nA |
| COUPLER | | | | | | | |
| Capacitance (input to output) | f = 1 MHz | | C _{IO} | | 0.6 | | pF |

Notes

- 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.
- ⁽¹⁾ T_{amb} = 0 °C to 70 °C, unless otherwise specified.
- ⁽²⁾ To measure crosstalk, turn on the LED for channel 1 and the output current for channel 2 in logic high. Repeat for channel 2.

| CURRENT TRANSFER RATIO ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | | |
|---|--|---------|--------|------|------|------|------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Current transfer ratio | $I_F = 16\text{ mA}$, $V_{CC} = 4.5\text{ V}$, $V_O = 0.4\text{ V}$, $T_{amb} = 25\text{ }^{\circ}\text{C}$ | SFH6325 | CTR | 7 | 16 | | % |
| | | SFH6326 | CTR | 19 | 35 | | % |
| | $I_F = 16\text{ mA}$, $V_{CC} = 4.5\text{ V}$, $V_O = 0.5\text{ V}$, $T_{amb} = 0\text{ }^{\circ}\text{C}$ to $70\text{ }^{\circ}\text{C}$ | SFH6325 | CTR | 5 | | | % |
| | | SFH6326 | CTR | 15 | | | % |

| SWITCHING CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | | |
|--|---|---------|-----------|------|------|------|---------------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| High to low | $I_F = 16\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 4.1\text{ k}\Omega$ | SFH6325 | t_{PHL} | | 0.3 | 1.5 | μs |
| | $I_F = 16\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 1.9\text{ k}\Omega$ | SFH6326 | t_{PHL} | | 0.2 | 0.8 | μs |
| Low to high | $I_F = 16\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 4.1\text{ k}\Omega$ | SFH6325 | t_{PLH} | | 0.6 | 1.5 | μs |
| | $I_F = 16\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 1.9\text{ k}\Omega$ | SFH6326 | t_{PLH} | | 0.5 | 0.8 | μs |

| COMMON MODE TRANSIENT IMMUNITY ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | | |
|---|---|---------|--------|------|------|------|------------------------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| CMTI at logic high level output | $I_F = 0\text{ mA}$, $C_{CM} = 10\text{ V}_{P-P}$, $V_{CC} = 5\text{ V}$, $R_L = 4.1\text{ k}\Omega$ | SFH6325 | CM_H | | 1000 | | $\text{V}/\mu\text{s}$ |
| | $I_F = 0\text{ mA}$, $C_{CM} = 10\text{ V}_{P-P}$, $V_{CC} = 5\text{ V}$, $R_L = 1.9\text{ k}\Omega$ | SFH6326 | CM_H | | 1000 | | $\text{V}/\mu\text{s}$ |
| CMTI at logic low level output | $I_F = 16\text{ mA}$, $C_{CM} = 10\text{ V}_{P-P}$, $V_{CC} = 5\text{ V}$, $R_L = 4.1\text{ k}\Omega$ | SFH6325 | CM_L | | 1000 | | $\text{V}/\mu\text{s}$ |
| | $I_F = 16\text{ mA}$, $C_{CM} = 10\text{ V}_{P-P}$, $V_{CC} = 5\text{ V}$, $R_L = 1.9\text{ k}\Omega$ | SFH6326 | CM_L | | 1000 | | $\text{V}/\mu\text{s}$ |

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

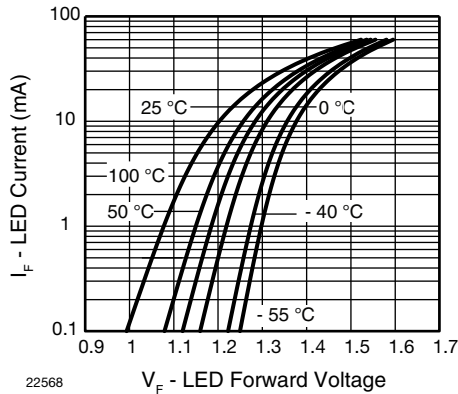


Fig. 1 - LED Forward Current vs. Forward Voltage

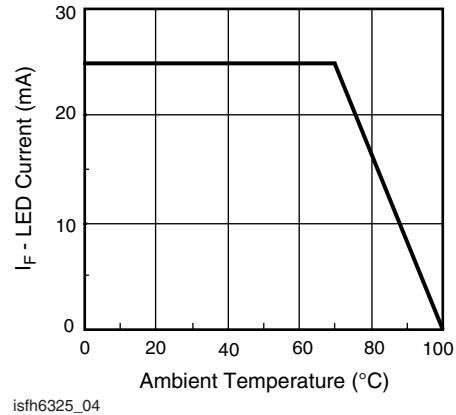
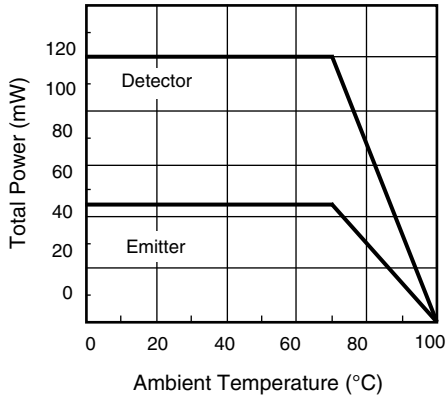
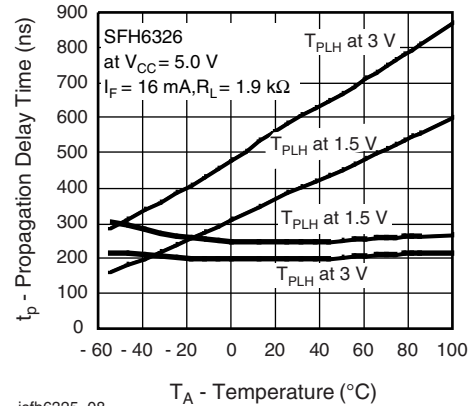


Fig. 2 - Permissible Forward LED Current vs. Temperature



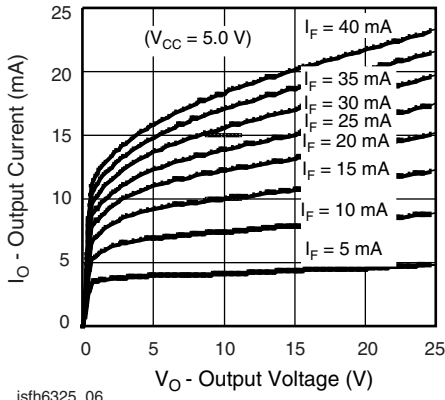
isfh6325_05

Fig. 3 - Permissible Power Dissipation vs. Temperature



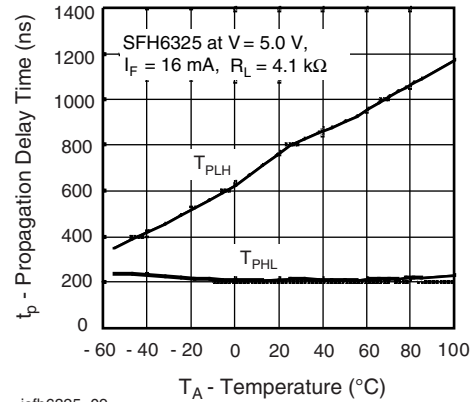
isfh6325_08

Fig. 6 - Propagation Delay vs. Ambient Temperature



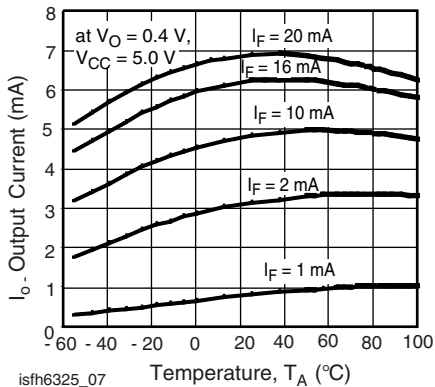
isfh6325_06

Fig. 4 - Output Current vs. Output Voltage



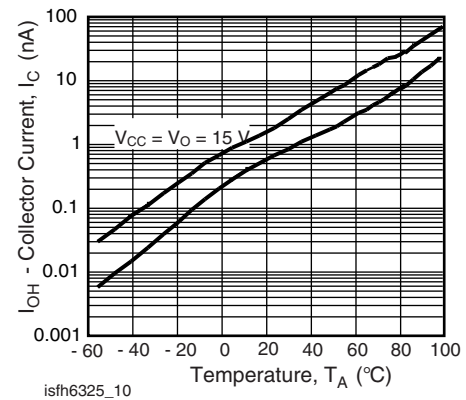
isfh6325_09

Fig. 7 - Propagation Delay vs. Ambient Temperature



isfh6325_07

Fig. 5 - Output Current vs. Temperature



isfh6325_10

Fig. 8 - Logic High Output Current vs. Temperature

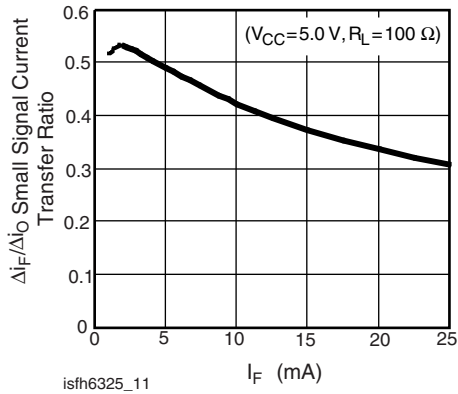


Fig. 9 - Small Signal Current Transfer Ratio vs. Input Current

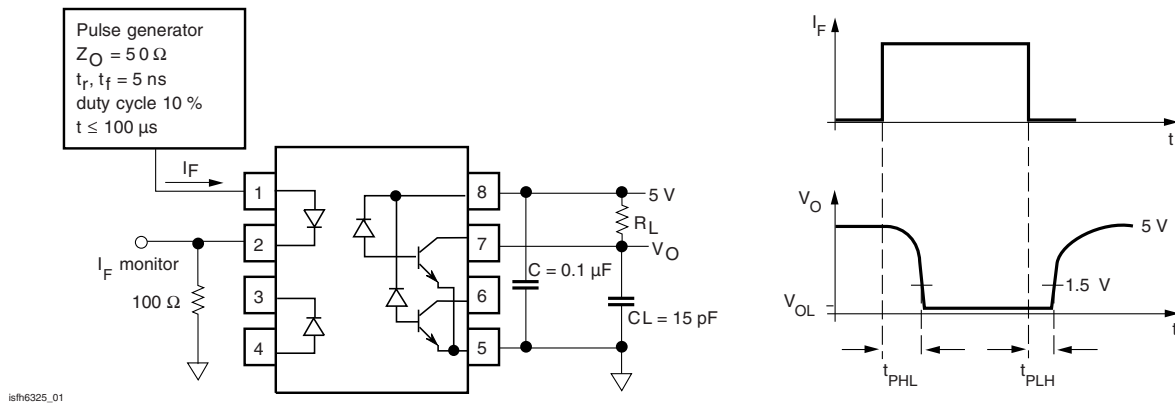


Fig. 10 - Switching Time and Test Circuit

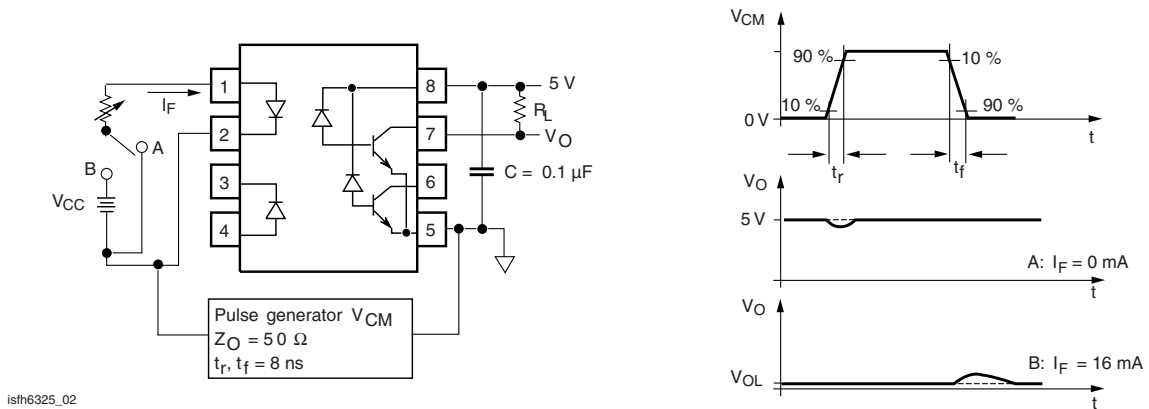
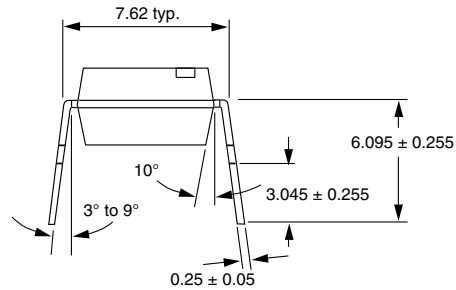
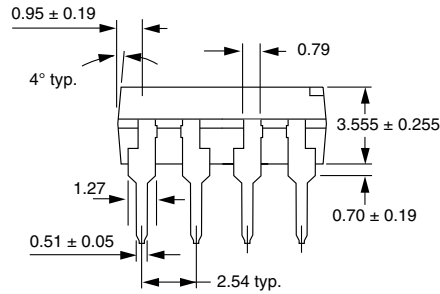
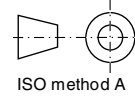
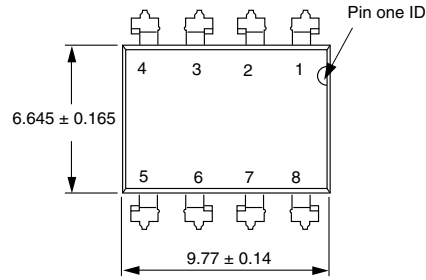
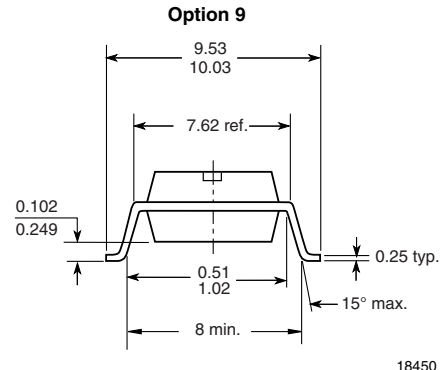
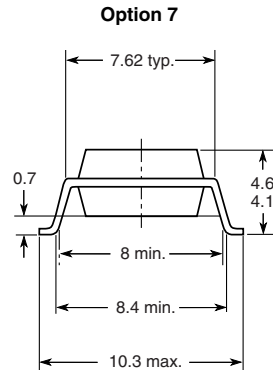
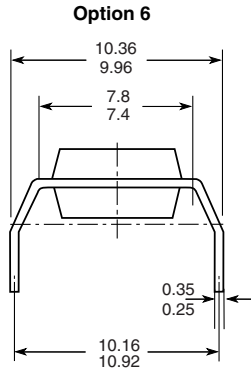


Fig. 11 - Waveform and Test Circuit for Common Mode Transient Immunity

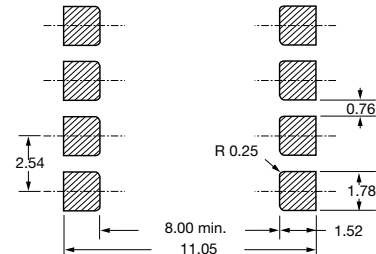
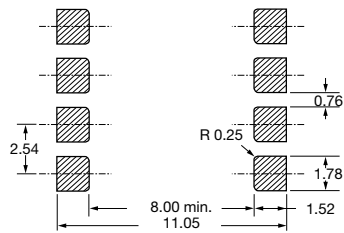
PACKAGE DIMENSIONS in millimeters



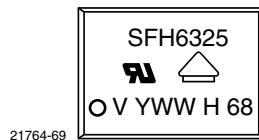
i178006



18450



PACKAGE MARKING



21764-69

Notes

- Only options 1 and 7 are reflected in the package marking.
- The VDE Logo is only marked on option1 parts.
- Tape and reel suffix (T) is not part of the package marking.



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