

TOSHIBA Photocoupler

TLP733(D4)SERIES, TLP747(D4)SERIES

Attachment: Specifications for VDE0884 option: (D4)

Types: TLP733, TLP734, TLP733F, TLP734F, TLP747G, TLP747J, TLP747GF, TLP747JF

Type designations for 'option: (D4)', which are tested under VDE0884 requirements.

Ex.: TLP734 (D4-GR-LF4) D4: VDE0884 option
 GR: CTR rank
 LF4: Lead bend

Note: Use TOSHIBA standard type number for safety standard application.



Ex. TLP734 (D4-GR-LF4) → TLP734

VDE0884 Isolation Characteristics

| Description | Symbol | Rating | Unit |
|---|---|--|----------------|
| Application classification (DIN VDE0110 teil 1 / 01.89, table 1) for rated mains voltage ≤ 300 V _{rms} for rated mains voltage ≤ 600 V _{rms} | | I-IV I-III | — |
| Climatic classification (DIN IEC68 teil 1 / 09.80) | | 40 / 100 / 21 | — |
| Pollution degree (DIN VDE0110 teil 1 / 01.89) | | 2 | — |
| Maximum operating insulation voltage | TLPxxx type | V _{IORM} | Vpk |
| | TLPxxxF type | | |
| Input to output test voltage, method A V _{pr} = 1.5×V _{IORM} type and sample test t _p = 60s, partial discharge < 5pC | TLPxxx type | V _{pr} | Vpk |
| | TLPxxxF type | | |
| Input to output test voltage, method B V _{pr} = 1.875×V _{IORM} , 100% production test t _p = 1s, partial discharge < 5pC | TLPxxx type | V _{pr} | Vpk |
| | TLPxxxF type | | |
| Highest permissible overvoltage (transient overvoltage, t _{pr} = 10s) | V _{TR} | 6000 | Vpk |
| Safety limiting values (max. permissible ratings in case of fault, also refer to thermal derating curve Current (input current I _F , P _{si} = 0) Power (output or total power dissipation) Temperature | I _{si} P _{si} T _{si} | 400 700 150 | mA mW °C |
| Insulation resistance, V _{IO} = 500V, T _a = 25°C V _{IO} = 500V, T _a = T _{si} | R _{si} | ≥10 ¹² ₉ ≥10 ⁹ | Ω |

- This data sheet refers to TLP733 (D4, M)SERIES, TLP747F (D4, M) SERIES that previously has a white-resin mold and have been changed. When designing new products please use black mold-resin devices.

Insulation Related Specifications

| | |  |  |
|---|-----|---|---|
| Minimum creepage distance (*) | Cr | 7.0 mm | 8.0mm |
| Minimum clearance (*) | Cl | 7.0 mm | 8.0mm |
| Minimum insulation thickness | ti | 0.5mm | |
| Comperative tracking index (DIN IEC112 / VDE0303, part 1) | CTI | 175 (VDE0110 teil 1 / 01.89 group III a) | |

((*) in accordance with DIN VDE0110 teil 1 / 01.89, table 2, & 4)

- (1*) If a printed circuit is incorporated, the creepage distance and clearance may be reduced below this value (e. g. at a standard distance between soldering eye centres of 7.5mm). If this is not permissible, the user shall take suitable measures.
- (2*) This photocoupler is suitable for 'safe electrical isolation' only within the safety limit data. Maintenance of the safety data shall be ensured by means of protective circuits.

VDE test sign: Marking on product

for VDE0884



Marking on packing

for VDE0884



0884

Figure 1 Partial discharge measurement procedure according to VDE0884
Destructive test for qualification and sampling tests.

Method A

(for type and sampling tests,
destructive tests)

- t1, t2 = 1 to 10s
- t3, t4 = 1 s
- tP(measuring time for partial discharge) = 50s
- t_b = 62s
- t_{ini} = 10s

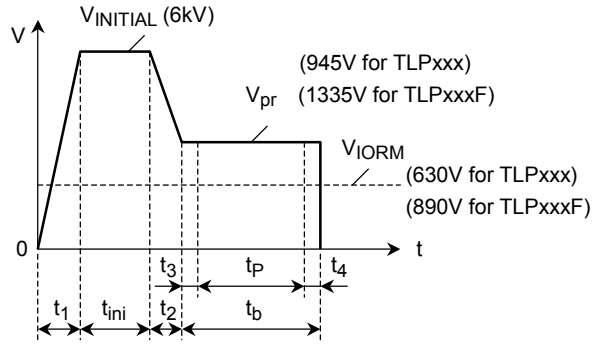


Figure 2 Partial discharge measurement procedure according to VDE0884
Non-destructive test for 100% inspection.

Method B

(for sample test, non-
destructive test)

- t3, t4 = 0.1s
- tP(measuring time for partial discharge) = 1s
- t_b = 1.2s

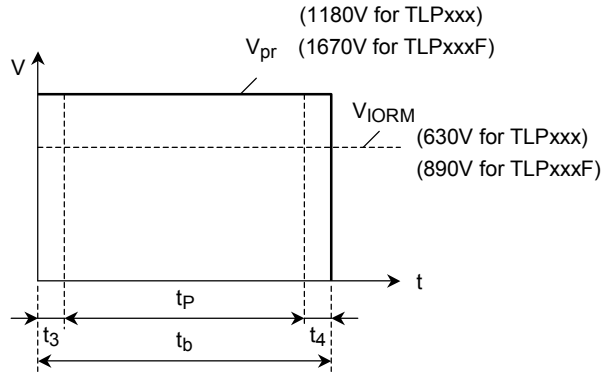
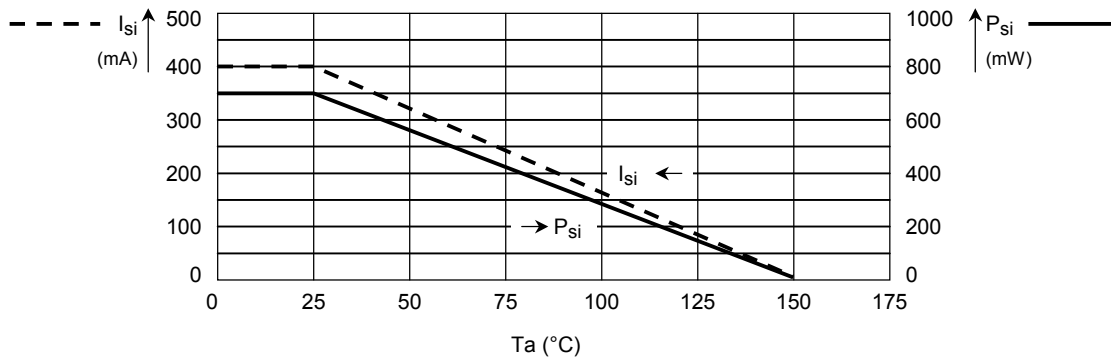


Figure 3 Dependency of maximum safety ratings on ambient temperature



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