

TOSHIBA Photocoupler

## TLP731(D4)SERIES, TLP741(D4)SERIES

Attachment: Specifications for VDE0884 option: (D4)

Types: TLP731, TLP732, TLP741G, TLP741J

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

Ex.: TLP732 (D4-GR-LF2)      D4: VDE0884 option  
 GR: CTR rank  
 LF2: lead bend



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

Ex. TLP732 (D4-GR-LF2) → TLP732

### VDE0884 Isolation Characteristics

Description	Symbol	Rating	Unit
Application classification (DIN VDE0109 / 12.83, table 1) for rated mains voltage ≤ 300 V <sub>rms</sub> for rated mains voltage ≤ 600 V <sub>rms</sub>		I-IV I-III	—
Climatic classification (DIN IEC68 teil 1 / 09.80)		55 / 100 / 21	—
Pollution degree (DIN VDE0109 / 12.83)		2	—
Maximum operating insulation voltage	V <sub>IORM</sub>	630	Vpk
Input to output test voltage, method A V <sub>pr</sub> = 1.2×V <sub>IORM</sub> , type and sample test t <sub>p</sub> = 60s, partial discharge < 5pC	V <sub>pr</sub>	760	Vpk
Input to output test voltage, method B V <sub>pr</sub> = 1.6×V <sub>IORM</sub> , 100% production test t <sub>p</sub> = 1s, partial discharge < 5pC	V <sub>pr</sub>	1000	Vpk
Highest permissible overvoltage (transient overvoltage, t <sub>pr</sub> = 10s)	V <sub>TR</sub>	6000	Vpk
Safety limiting values (max. permissible ratings in case of fault, also refer to thermal derating curve) Current (input current I <sub>F</sub> , P <sub>si</sub> = 0) Power (output or total power dissipation) Temperature	I <sub>si</sub> P <sub>si</sub> T <sub>si</sub>	400 700 150	mA mW °C
Insulation resistance at T <sub>si</sub> , V <sub>IO</sub> = 500V	R <sub>si</sub>	≥ 10 <sup>9</sup>	Ω

## Insulation Related Specifications

			 7.62mm pitch standard type	 10.16mm pitch (LF2) type
Minimum creepage distance	(*)	Cr	7.0 mm	8.0 mm
Minimum clearance	(*)	Cl	7.0 mm	8.0 mm
Minimum insulation thickness		ti	0.5 mm	
Comperative tracking index (DIN IEC112 / VDE0303, part 1)		CTI	175 (VDE0109 / 12.83 group III a)	

((\*) in accordance with DIN VDE0109 / 12.83, 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 7.5 mm). 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)

- $t_1, t_2$  = 1 to 10s
- $t_3, t_4$  = 1s
- $t_P$  (Measuring time for partial discharge) = 50s
- $t_b$  = 62s
- $t_{ini}$  = 10s

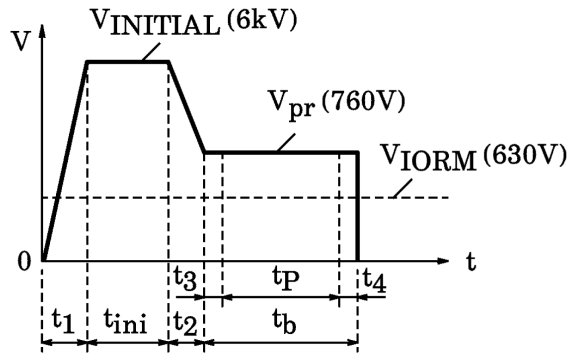


Figure 2 Partial discharge measurement procedure according to VDE0884  
Non-destructive test for 100% inspection.

**Method B**

(for sample test, non-destructive test)

- $t_3, t_4$  = 0.1s
- $t_P$  (Measuring time for partial discharge) = 1s
- $t_b$  = 1.2s

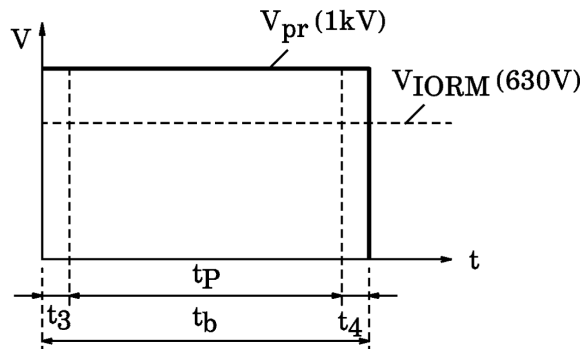
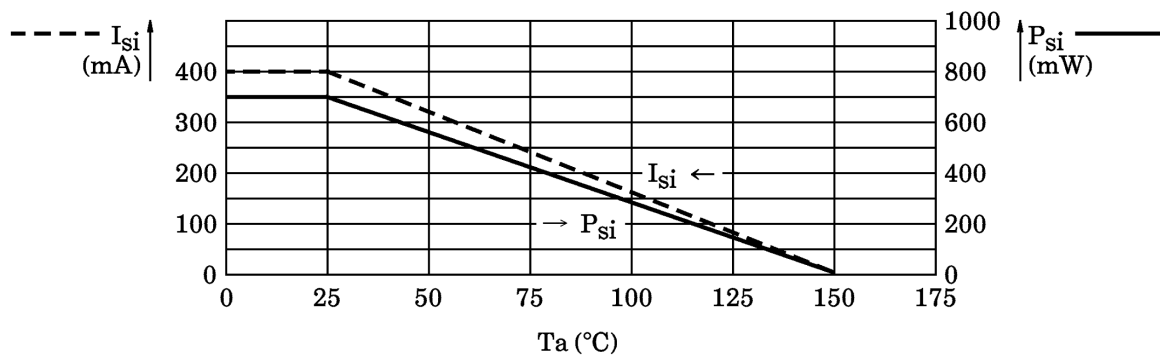


Figure 3 Dependency of maximum safety ratings on ambient temperature



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