TOSHIBA Photocoupler

TLP721(D4)SERIES

Attachment: Specifications for VDE0884 option: (D4)
Types: TLP721, TLP721F

Type designations for ' option: (D4) ', which are tested under VDE0884 requirements.
Ex.: TLP721 (D4–GR–LF4) D4: VDE0884 option
GR: CTR rank
LF4: lead bend

Note: Use TOSHIBA standard type number for safety standard application.
Ex. TLP721 (D4–GR–LF4) → TLP721

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	TLP721	V_{IORM}	630	Vpk
	TLP721F		890	
Input to output test voltage, method A Vpr = 1.5×V_{IORM}, type and sample test t_p = 60s, partial discharge < 5pC	TLP721	Vpr	945	Vpk
	TLP721F		1335	
Input to output test voltage, method B Vpr = 1.875×V_{IORM}, 100% production test t_p = 1s, partial discharge < 5pC	TLP721	Vpr	1180	Vpk
	TLP721F		1670	
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}	 300 500 150	 mA mW °C
Insulation resistance, V_{IO} = 500V, Ta = 25°C V_{IO} = 500V, Ta = T_{si}		R_{si}	$\geq 10^{12}$ $\geq 10^{9}$	Ω

- This data sheet refers to TLP721 (D4, M), TLP721F (D4, M) that previously has a white–resin mold and have been changed. When designing new products please use black mold–resin devices.

Insulation Related Specifications

			 7.62 mm pitch TLP721	 10.16 mm pitch TLP721F
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 (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 7.5 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 4

Marking on packing for VDE0884 V D E 0884

Marking example:

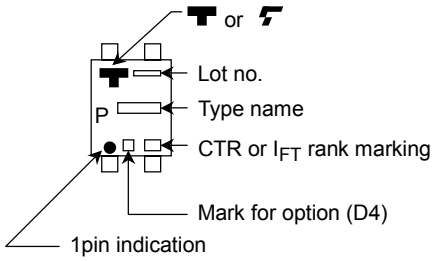


Figure 1 Partial discharge measurement procedure according to VDE0884 destructive test for qualification and sampling tests.

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

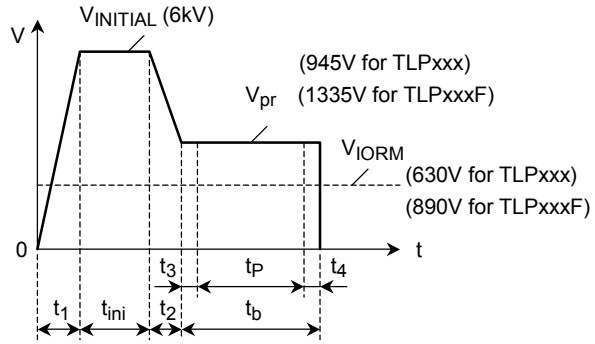


Figure 2 Partial discharge measurement procedure according to VDE0884 non–destructive test for 100% inspection.

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

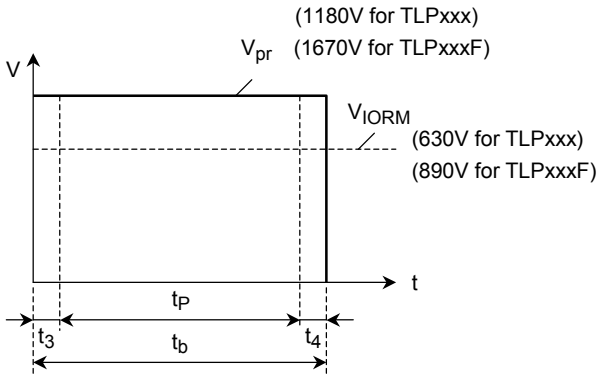
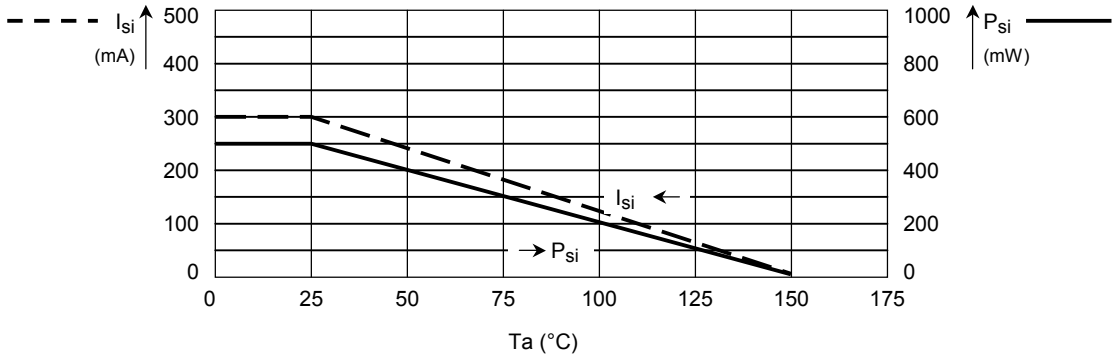


Figure 3 Dependency of maximum safety ratings on ambient temperature



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