

TOSHIBA Photocoupler

## TLP250(D4),TLP250F(D4),TLP251(D4),TLP251F(D4)

Attachment: Specifications for VDE0884 option: (D4)

Types: TLP250,TLP251

TLP250F,TLP251F

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

Ex.: TLP250F (D4-LF4)

D4: VDE0884 option

LF4: Standard lead bend



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

Ex. TLP250F (D4-LF4) → TLP250F

### VDE0884 Isolation Characteristics

Description		Symbol	Rating	Unit
Application classification (DIN VDE0110 teil 2 / 01.89, table 1) for rated mains voltage $\leq 300V_{RMS}$ for rated mains voltage $\leq 600V_{RMS}$			I-III I-II	—
Climatic classification (DIN IEC68 teil 1 / 09.80)			40 / 100 / 21	—
Pollution degree (DIN VDE0110 teil 2 / 01.89)			2	—
Maximum operating insulation voltage	TLPxxx type	$V_{IORM}$	630	Vpk
	TLPxxxF type		1140	
Input to output test voltage, method A $V_{pr} = 1.5 \times V_{IORM}$ , type and sample test $t_p = 60s$ , partial discharge $< 5pC$	TLPxxx type	$V_{pr}$	945	Vpk
	TLPxxxF type		1710	
Input to output test voltage, method B $V_{pr} = 1.875 \times V_{IORM}$ , 100% production test $t_p = 1s$ , partial discharge $< 5pC$	TLPxxx type	$V_{pr}$	1180	Vpk
	TLPxxxF type		2140	
Highest permissible overvoltage (transient overvoltage, $t_{pr} = 10s$ )	TLPxxx type	$V_{TR}$	4000	Vpk
	TLPxxxF type		6000	
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		$I_{si}$ $P_{si}$ $T_{si}$	100 800 150	mA mW °C
Insulation resistance, $V_{IO} = 500V$ , $T_a = 25^\circ C$ $V_{IO} = 500V$ , $T_a = T_{si}$		$R_{si}$	$\geq 10^{12}$ $\geq 10^9$	$\Omega$

## Insulation Related Specifications

		 7.62mm pitch TLPxxx type	 10.16mm pitch TLPxxxF type
Minimum creepage distance(*)	Cr	6.4 mm	8.0mm
Minimum clearance(*)	Cl	6.4 mm	8.0mm
Minimum insulation thickness	ti	—	
Comperative tracking index (DIN IEC112 / VDE0303, part 1)	CTI	175 (VDE0110 teil 2 / 01.89 group III a)	

(\*) in accordance with DIN VDE0110 teil 2 / 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



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

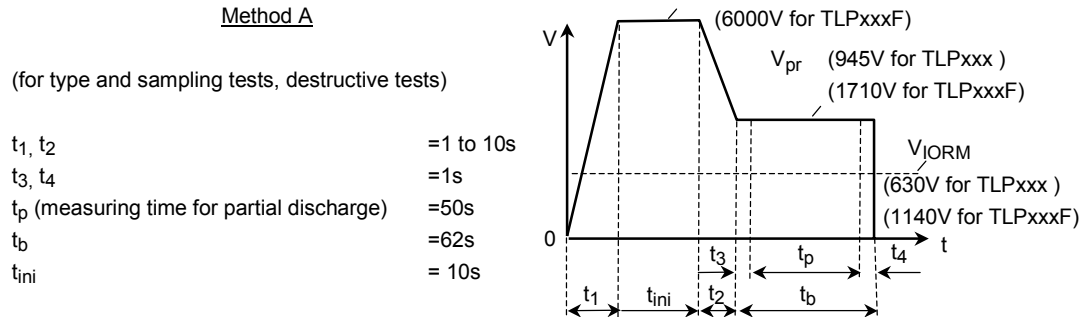


Figure 2 Partial discharge measurement procedure according to VDE0884  
Non-destructive test for 100% inspection.

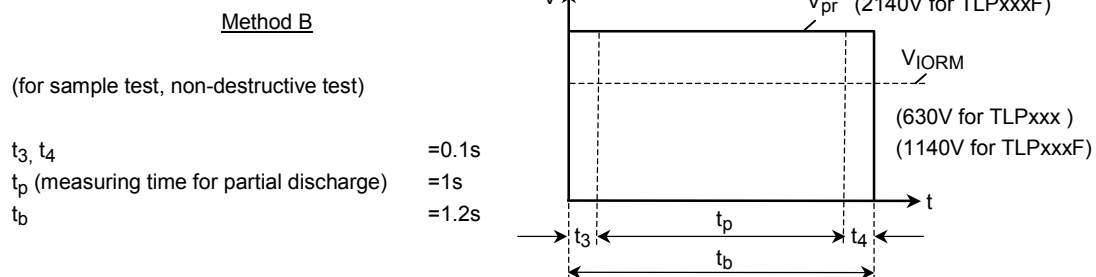
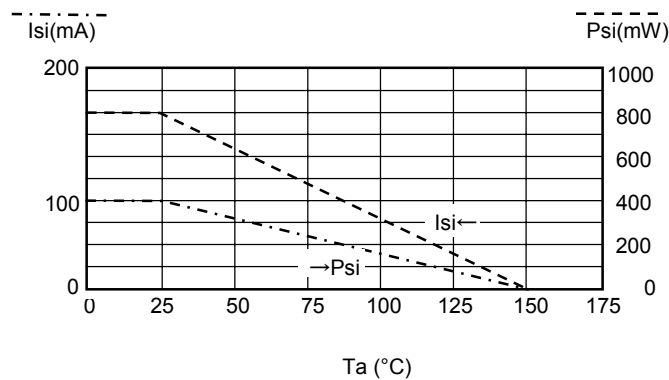


Figure 3 Dependency of maximum safety ratings on ambient temperature



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