

# TOSHIBA TLP620(D4)SERIES, TLP621(D4)SERIES, TLP750(D4)SERIES

TOSHIBA Photocoupler

## TLP620(D4)SERIES, TLP621(D4)SERIES, TLP750(D4)SERIES

Attachment: Specifications for VDE0884 option: (D4)

Types: TLP620, TLP620-2, TLP620-4, TLP621, TLP621-2, TLP621-4, TLP750, TLP751

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

Ex. : TLP621 (D4-GR-LF2)      D4: VDE0884 option  
   GR: CTR rank  
   LF2: Standard lead bend

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

Ex. TLP621 (D4-GR-LF2) → TLP621

### VDE0884 Isolation Characteristics




Description	Symbol	Rating	Unit
Application classification (DIN VDE0109 / 12.83, table 1) for rated mains voltage $\leq 300 V_{rms}$ for rated mains voltage $\leq 600 V_{rms}$		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	$V_{IORM}$	890	Vpk
Input to output test voltage, method A $V_{pr} = 1.5 \times V_{IORM}$ , type and sample test $t_p = 60s$ , partial discharge $< 5pC$	$V_{pr}$	1335	Vpk
Input to output test voltage, method B $V_{pr} = 1.875 \times V_{IORM}$ , 100% production test $t_p = 1s$ , partial discharge $< 5pC$	$V_{pr}$	1670	Vpk
Highest permissible overvoltage (transient overvoltage, $t_{pr} = 10s$ )	$V_{TR}$	8000	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 at $T_{si}$ , $V_{IO} = 500V$	$R_{si}$	$\geq 10^9$	$\Omega$

## Insulation Related Specifications

Minimum creepage distance (*)	Cr	7.0 mm
Minimum clearance (*)	Cl	7.0 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.

	TLP620, 620-2, 620-4 TLP621, 621-2, 621-4	TLP750, 751
VDE test sign: Marking on product for VDE0884	4	
Marking on packing for VDE0884	 0884	 0884

Marking example: 4 pin type

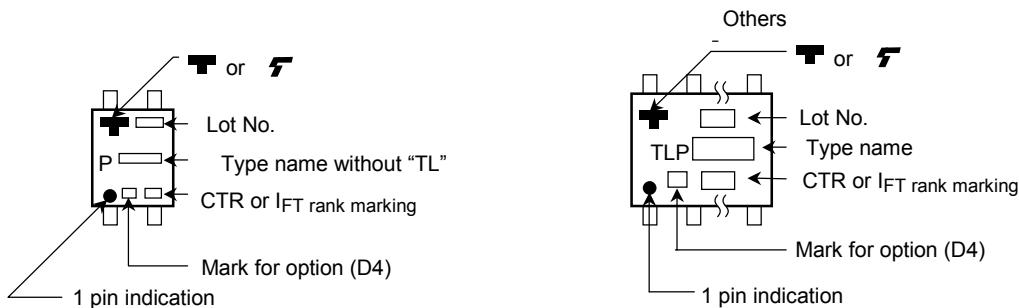


Figure 1 Partial discharge measurement procedure according to VDE0884  
Destructive test for qualification and sampling tests.

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) =  $50s$

$t_b = 62s$

$t_{ini} = 10s$

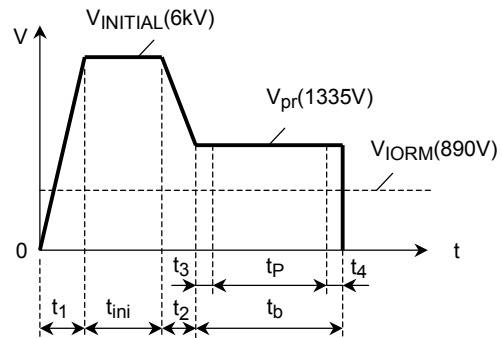


Figure 2 Partial discharge measurement procedure according to VDE0884  
Non-destructive test for 100% inspection.

Method B

(for sample test, non-  
destructive test)

$t_3, t_4 = 0.1s$

$t_P$ (measuring time for  
partial discharge) =  $1s$

$t_b = 1.2s$

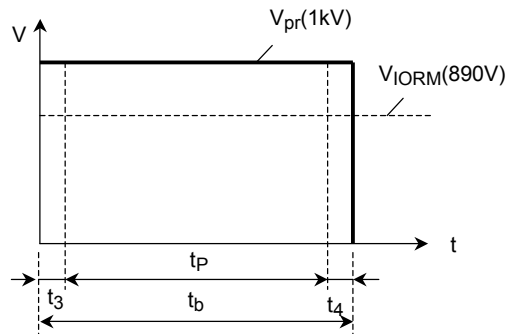
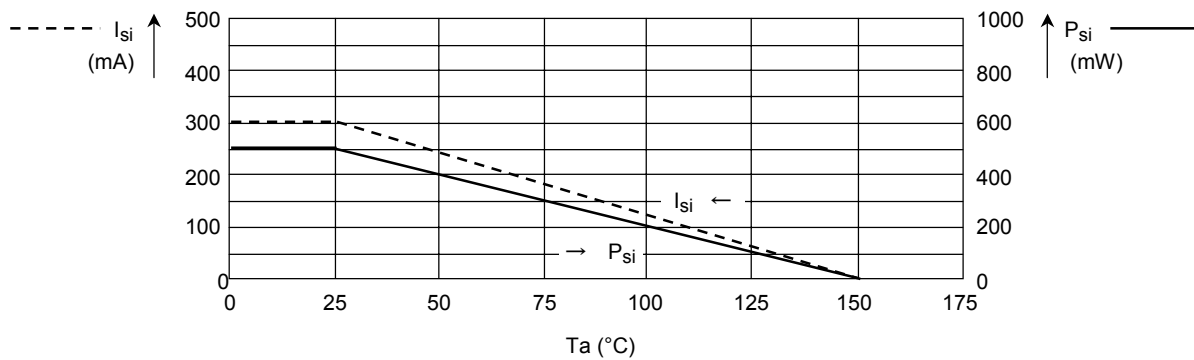


Figure 3 Dependency of maximum safety ratings on ambient temperature



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000707EBC

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