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) \rightarrow TLP721

VDE0884 ISOLATION CHARACTERISTICS

DESCRIPTION	SYMBOL	RATING	UNIT	
$ \begin{array}{c} \textbf{Application Classification} \\ \textbf{(DIN VDE0110 Teil 1/01.89, Table 1)} \\ \textbf{for rated mains voltage} \leqq 300 \text{V}_{\textbf{rms}} \\ \textbf{for rated mains voltage} \leqq 600 \text{V}_{\textbf{rms}} \\ \end{array} $		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	37	630	Vpk
	TLP721F	V_{IORM}	890	
Input to output Test Voltage, Method A Vpr=1.5×V _{IORM} , Type and Sample Test	TLP721	- Vpr	945	Vpk
tp=60s, Partial Discharge<5pC	TLP721F		1335	
Input to output Test Voltage, Method B Vpr=1.875×V _{IORM} , 100% Production Test	TLP721	- Vpr	1180	Vpk
t _p =1s, Partial Discharge<5pC	TLP721F		1670	
Highest Permissible Overvoltage (Transient Overvoltage, t _{pr} =10s)	$v_{ m TR}$	6000	Vpk	
Safety Limiting Values (Max. permissible ratings fault, also refer to thermal derating curve)				
Current (Input current IF, Psi=0)	Isi	300	mA	
Power (Output or Total Power Dissipation)	Psi	500	mW	
Temperature	Tsi	150	$^{\circ}\mathrm{C}$	
Insulation Resistance, $V_{IO} = 500V$, $Ta = 25^{\circ}C$ $V_{IO} = 500V$, $Ta = T_{Si}$	Rsi	$\stackrel{\geq}{=} 10^{12} \ \stackrel{\geq}{=} 10^9$	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					
	INISHII A	$\Delta TICONI$	RELATI	-D SPEC	TEICATIONS

		7.62mm pitch TLP721	10.16mm pitch TLP721F	
Minimum Creepage Distance (*)	Cr	7.0mm	8.0mm	
Minimum Clearance (*)	Cl	7.0mm	8.0mm	
Minimum Insulation Thickness	ti	0.5mm		
Comperative Tracking Index	CTI	175		
(DIN IEC112/VDE0303, Part 1)		(VDE0110 Teil 1/01.89 Group Ⅲa)		

- ((*) 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.

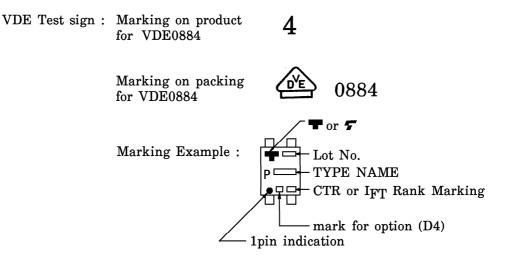


Figure 1 Partial discharge measurement procedure according to VDE0884 Destructive test for qualification and sampling tests.

Method A

(for type and sampling tests, destructive tests)

$$\begin{array}{lll} t_1, \ t_2 & = 1 \ to \ 10s \\ t_3, \ t_4 & = 1s \\ t_P \ (\text{Measuring time for} \\ & \text{partial discharge}) & = 50s \\ t_b & = 62s \\ t_{\text{ini}} & = 10s \end{array}$$

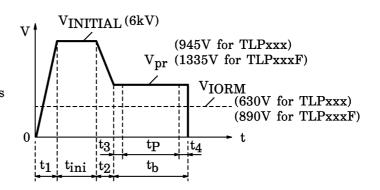


Figure 2 Partial discharge measurement procedure according to VDE0884 Non-destructive test for 100% inspection.

Method B

(for sample test, non-destructive test)

$$\begin{array}{ll} t_3,\ t_4 & = 0.1s \\ t_P \ (\text{Measuring time for} \\ & \text{partial discharge}) & = 1s \\ t_b & = 1.2s \end{array}$$

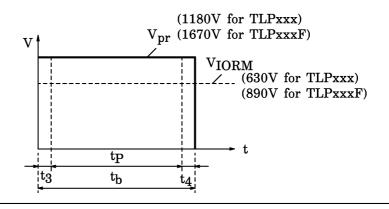


Figure 3 Dependency of maximum safety ratings on ambient temperature 1000 500 P_{si} - I_{si} (mA) (mW) 400 800 300 600 200 400 100 200 P_{si} 0 0 25 50 75 100 125 150 175 0 Ta (°C)

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