## TOSHIBA PHOTOCOUPLER

# TLP759(D4)

<u>ATTACHMENT</u>: SPECIFICATIONS FOR <u>VDE0884</u> OPTION: (D4)

Types: TLP759, TLP759F

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

Ex. TLP759 (D4-O) D4: VDE0884 option

: CTR rank

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

Ex. TLP759 (D4-O)  $\rightarrow$  TLP759

#### **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	TLPxxx TLPxxxF	V <sub>IORM</sub>	890 1140	Vpk
Input to output Test Voltage, Method A	TLPxxx	Vpr	1335	Vpk
$V_{\rm pr} = 1.5 \times V_{\rm IORM}$ . 100% Production Test $t_{\rm p} = 60$ s, Partial Discharge $<$ 5pC	TLPxxxF		1710	
Input to output Test Voltage, Method B	TLPxxx	Vpr	1670	Vpk
$V_{pr}=1.875 \times V_{\mbox{IORM}}$ , 100% Production Test $t_p=1s$ , Partial Discharge < 5pC	TLPxxxF		2140	
Highest Permissible Overvoltage (Transient Overvoltage, t <sub>pr</sub> =10s)		$V_{\mathrm{TR}}$	6000	Vpk
Safety Limiting Values (Max. permissible ratings in case of 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 at Tsi, V <sub>IO</sub> =500V	Rsi	$\geq$ $10^{9}$	Ω	

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## INSULATION RELATED SPECIFICATIONS

		7.62mm pitch TLP759	10.16mm pitch TLP759F
Minimum Creepage Distance (*)	Cr	6.4mm	8.0mm
Minimum Clearance (*)	Cl	6.4mm	8.0mm
Minimum Insulation Thickness	ti	0.4mm	
Comperative Tracking Index	CTI	175	
(DIN IEC112/VDE0303, Part 1)		(VDE0109/12.83 Group <b>■</b> 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 7.5mm). 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

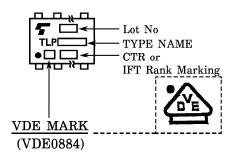
for VDE0884



Marking on packing for VDE0884



Marking Example:





#### Method A

(for type and sampling tests, destructive tests)

$$\begin{array}{lll} t_1,\,t_2 & = 1 \text{ to } 10s \\ t_3,\,t_4 & = 1s \\ t_p \, (\text{Measuring time for partial discharge}) = 60s \\ t_b & = 62s \\ t_{ini} & = 10s \end{array}$$

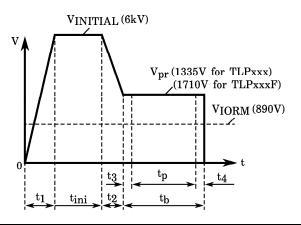


Figure 2 Partial discharge measurement procedure according to VDE0884 Non-destructive test for 100% inspection.

#### Method B

(for sample test, non-destructive test)

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

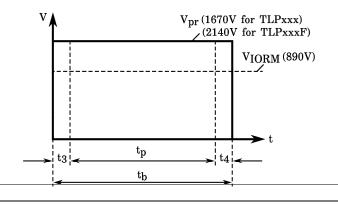


Figure 3 Dependency of maximum safety ratings on ambient temperature

