TOSHIBA PHOTOCOUPLER

TLP721(D4,M)SERIES,TLP733(D4,M)SERIES,TLP747(D4,M)SERIES

ATTACHMENT : SPECIFICATIONS FOR VDE0884 OPTION: (D4)

Types : TLP721, TLP721F, TLP733, TLP733F, TLP734, TLP734F, TLP747G, TLP747GF, TLP747J, TLP747JF

This data sheet refers to black mold-resin devices, TLPxxx (D4xxx, M) that previously has a white-resin mold and have been changed. When designing new products please use black mold-resin devices.

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

Ex. : TLP734F (D4-GR-LF4, M)

D4 : VDE0884 option
GR : CTR rank name
LF4 : standard lead bend name
M : black mold-resin devices

Note : Use Toshiba standard type number for safety standard application.
Ex. TLP734(FD4-GR-LF4, M) → TLP734F

VDE0884 ISOLATION CHARACTERISTICS

DESCRIPTION		SYMBOL	RATING	UNIT
Application Classification (DIN VDE0110 Teil 2 / 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 2 / 01.89)			2	—
Maximum Operating Insulation Voltage	TLPxxx type	V_{IORM}	890	Vpk
	TLPxxxF type		1130	
Input to output Test Voltage, Method A Vpr = 1.5 × V_{IORM}, Type and Sample Test tp = 60s, Partial Discharge < 5pC	TLPxxx type	Vpr	1335	Vpk
	TLPxxxF type		1695	
Input to output Test Voltage, Method B Vpr = 1.875 × V_{IORM}, 100% Production Test tp = 1s, Partial Discharge < 5pC	TLPxxx type	Vpr	1670	Vpk
	TLPxxxF type		2120	
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, Psi = 0) Power (Output or Total Powr Dissipation) Temperature		 Isi Psi Tsi	 400 700 150	 mA mW °C
Insulation Resistance, V_{IO} = 500V, Ta = 25°C V_{IO} = 500V, Ta = Tsi		Rsi	$\geq 10^{12}$ $\geq 10^{9}$	Ω

INSULATION RELATED SPECIFICATIONS

		 7.62mm pitch TLPxxx type	 10.16mm pitch TLPxxxF type
Minimum Creepage Distance (*)	Cr	7.0 mm	8.0 mm
Minimun 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 2 / 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.

		TLP721 SERIES	TLP733 SERIES TLP747 SERIES
VDE Test sign :	Marking on product for VDE0884	4	
	Marking on packing for VDE0884	 0884	 0884

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

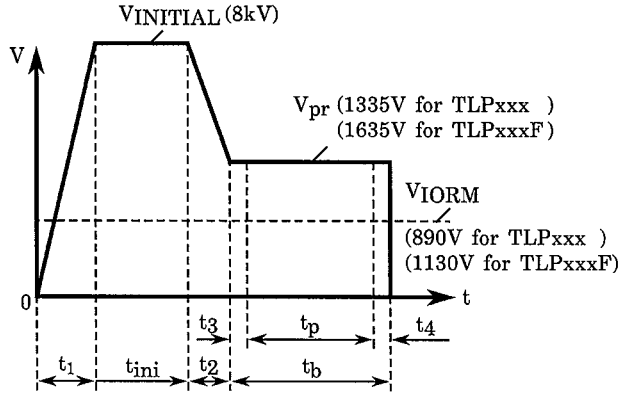


Figure 2 Partial discharge measurement procedure according to VDE0884
Non-destructive test for 100% inspection.

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

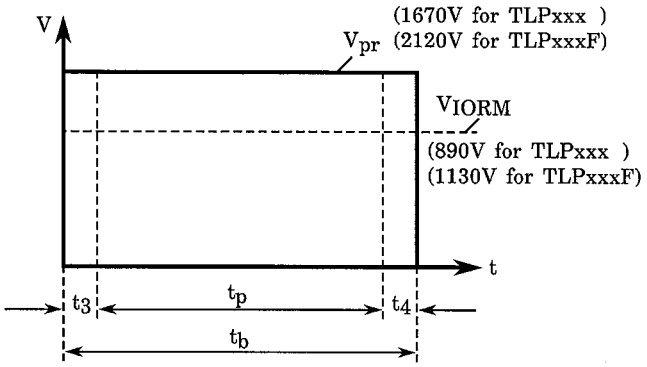
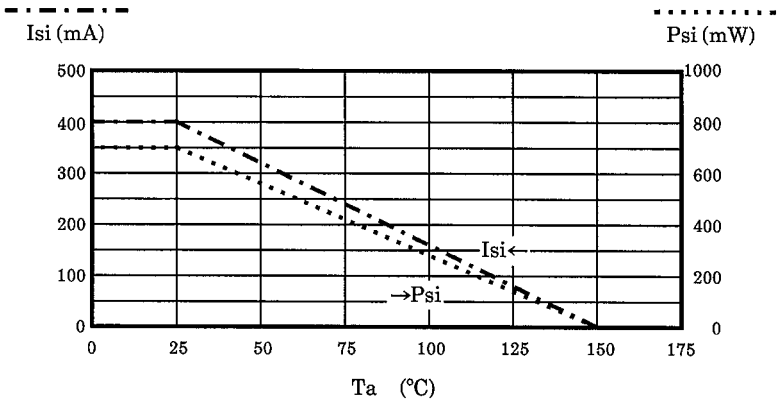


Figure 3 Dependency of maximum safety ratings on ambient temperature



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