TOSHIBA PHOTOCOUPLER

TLP3009(D4)SERIES

ATTACHMENT : SPECIFICATIONS FOR VDE0884 OPTION : (D4)

Types : TLP3009, TLP3010, TLP3011, TLP3012 TLP3020, TLP3021, TLP3022, TLP3023
TLP3031, TLP3032, TLP3033 TLP3041, TLP3042, TLP3043
TLP3051, TLP3052 TLP3061, TLP3062, TLP3063

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

Ex. : TLP3063 (D4-LF2) D4 : VDE0884 option
LF2 : lead bend

Note : Use Toshiba standard type number for safety standard application.
Ex. TLP3063 (D4-LF2) → TLP3063

VDE0884 ISOLATION CHARACTERISTICS

DESCRIPTION	SYMBOL	RATING	UNIT
Application Classification (DIN VDE0109 12.83, 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)		55 / 100 / 21	—
Pollution Degree (DIN VDE0109 / 12.83)		2	—
Maximum Operating Insulation Voltage	V_{IORM}	630	Vpk
Input to output Test Voltage, Method A Vpr=1.2×V_{IORM}, Type and Sample Test t_p=60s, Partial Discharge<5pC	Vpr	760	Vpk
Input to output Test Voltage, Method B Vpr=1.6×V_{IORM}, 100% Production Test t_p=1s, Partial Discharge<5pC	Vpr	1000	Vpk
Highest Permissible Overvoltage (Transient Overvoltage, t_{pr}=10s)	V_{TR}	6000	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 Power Dissipation) Temperature	 Isi Psi Tsi	 400 700 150	 mA mW °C
Insulation Resistance at Tsi, V_{IO}=500V	Rsi	$\geqq 10^9$	Ω

961001EBC2

INSULATION RELATED SPECIFICATIONS

		 7.62mm pitch standard type	 10.16mm pitch (LF2) type
Minimum Creepage Distance *	Cr	7.0 mm	8.0 mm
Minimum 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 (VDE0109 / 12.83 Group Ⅲa)	

* 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 :  0884

961001EBC2'

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)	= 60s
t_b	= 62s
t_{ini}	= 10s

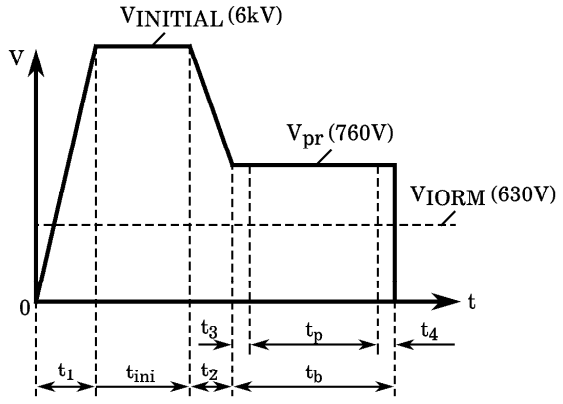

Figure 2 Partial discharge measurement procedure according to VDE0884
Non-destructive test for 100% inspection.

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

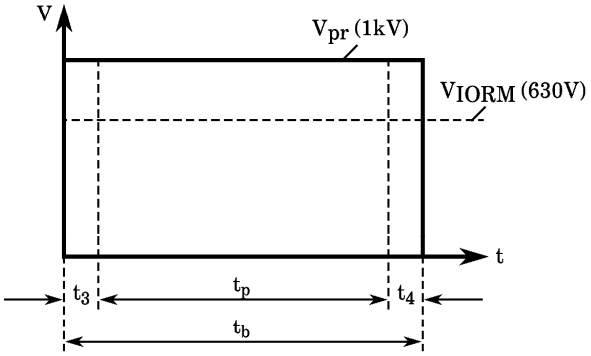

Figure 3 Dependency of maximum safety ratings on ambient temperature