

TOSHIBA PHOTOCOUPLER

TLP3009(D4)SERIESATTACHMENT : 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	V _{pk}
Input to output Test Voltage, Method A V _{pr} = 1.2 × V _{IORM} , Type and Sample Test t _p = 60s, Partial Discharge < 5pC	V _{pr}	760	V _{pk}
Input to output Test Voltage, Method B V _{pr} = 1.6 × V _{IORM} , 100% Production Test t _p = 1s, Partial Discharge < 5pC	V _{pr}	1000	V _{pk}
Highest Permissible Overvoltage (Transient Overvoltage, t _{pr} = 10s)	V _{TR}	6000	V _{pk}
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	I _{si} Psi T _{si}	400 700 150	mA mW °C
Insulation Resistance at T _{si} , V _{IO} = 500V	R _{si}	$\geq 10^9$	Ω

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● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

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 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 7.5mm). 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

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- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
- The products described in this document are subject to foreign exchange and foreign trade control laws.
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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

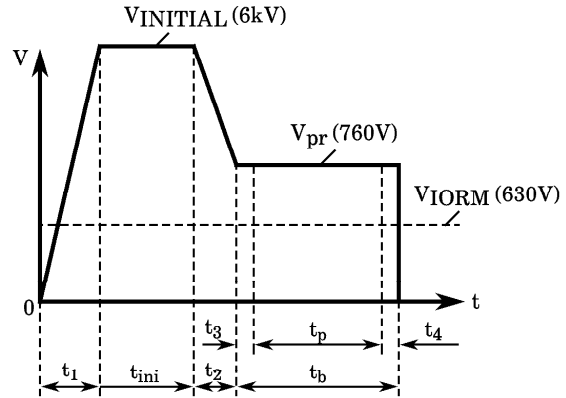


Figure 2 Partial discharge measurement procedure according to VDE0884
Non-destructive test for 100% inspection.

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

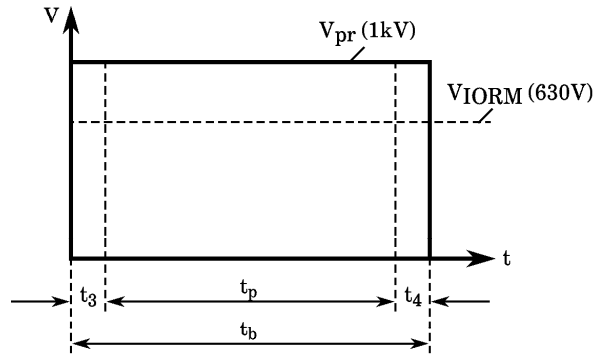


Figure 3 Dependency of maximum safety ratings on ambient temperature

