

TOSHIBA PHOTOCOUPLER

TLP620(D4)SERIES, TLP621(D4)SERIES, TLP750(D4)SERIES

ATTACHMENT : SPECIFICATIONS FOR VDE0884 OPTION : (D4)

Types : TLP620, TLP620-2, TLP620-3, TLP620-4, TLP621, TLP621-2, TLP621-3, TLP621-4, TLP750, TLP751

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

- | | | | |
|-------|--------------------|-------|--------------------|
| Ex. : | TLP621 (D4-GR-LF2) | D4 : | VDE0884 option |
| | | GR : | CTR rank |
| | | LF2 : | standard lead bend |

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

Ex. TLP621 (D4-GR-LF2) → TLP621

VDE0884 ISOLATION CHARACTERISTICS

DESCRIPTION	SYMBOL	RATING	UNIT
Application Classification (DIN VDE0109/12.83, Table 1) for rated mains voltage $\leq 300V_{rms}$ for rated mains voltage $\leq 600V_{rms}$		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}	890	Vpk
Input to output Test Voltage, Method A $V_{pr} = 1.5 \times V_{IORM}$, Type and Sample Test $t_p = 60s$, Partial Discharge $< 5pC$	V_{pr}	1335	Vpk
Input to output Test Voltage, Method B $V_{pr} = 1.875 \times V_{IORM}$, 100% Production Test $t_p = 1s$, Partial Discharge $< 5pC$	V_{pr}	1670	Vpk
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 , $P_{si} = 0$)	I_{si}	300	mA
Power (Output or Total Power Dissipation)	P_{si}	500	mW
Temperature	T_{si}	150	°C
Insulation Resistance at T_{si} , $V_{IO} = 500V$	R_{si}	$\geq 10^9$	Ω

INSULATION RELATED SPECIFICATIONS

Minimum Creepage Distance (*)	Cr	6.4mm
Minimum Clearance (*)	Cl	6.4mm
Minimum Insulation Thickness	ti	0.4mm
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.

TLP620, 620-2, 620-3, 620-4
TLP621, 621-2, 621-3, 621-4

TLP750, 751

VDE Test sign : Marking on product
 for VDE0884

4



Marking on packing
 for VDE0884

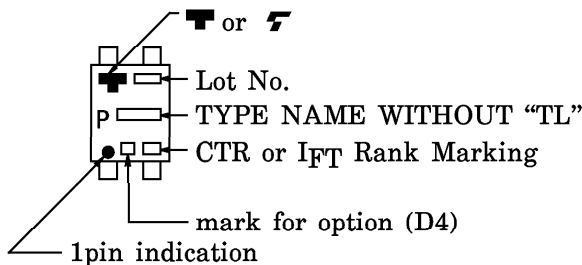


0884



0884

Marking Example : 4 pin Type



Others

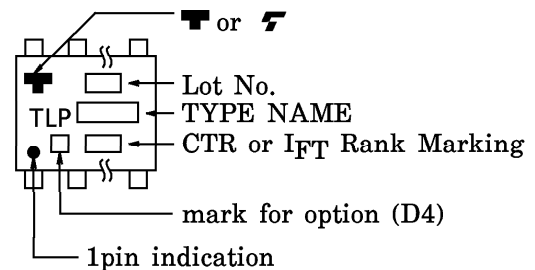


Figure 1 Partial discharge measurement procedure according to VDE0884
Destructive test for qualification and sampling tests.

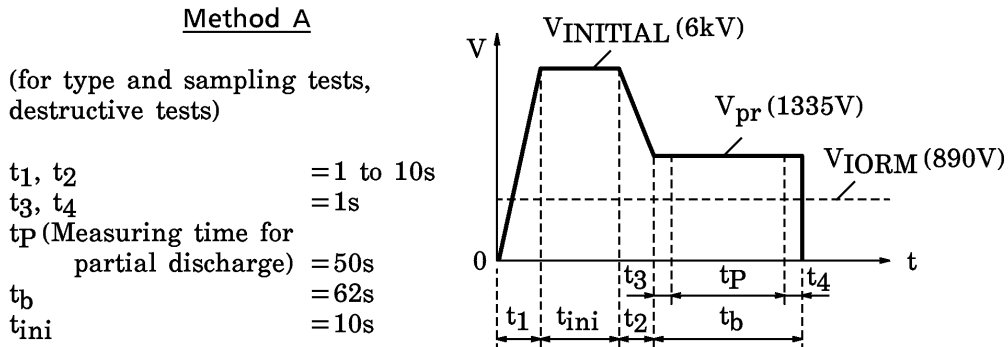


Figure 2 Partial discharge measurement procedure according to VDE0884
Non-destructive test for 100% inspection.

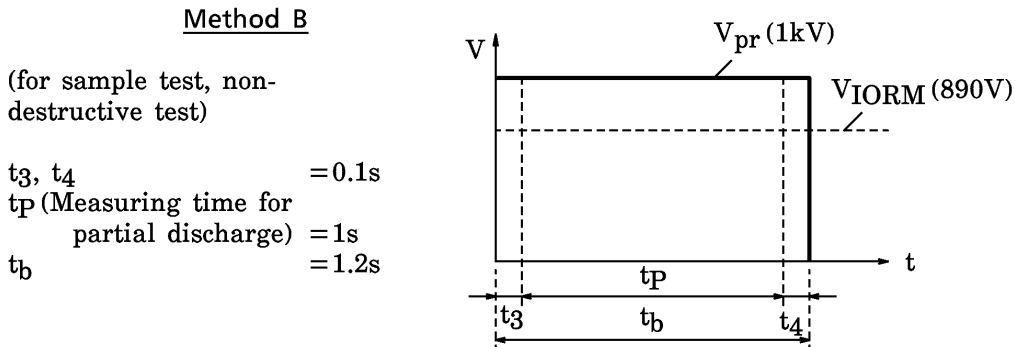
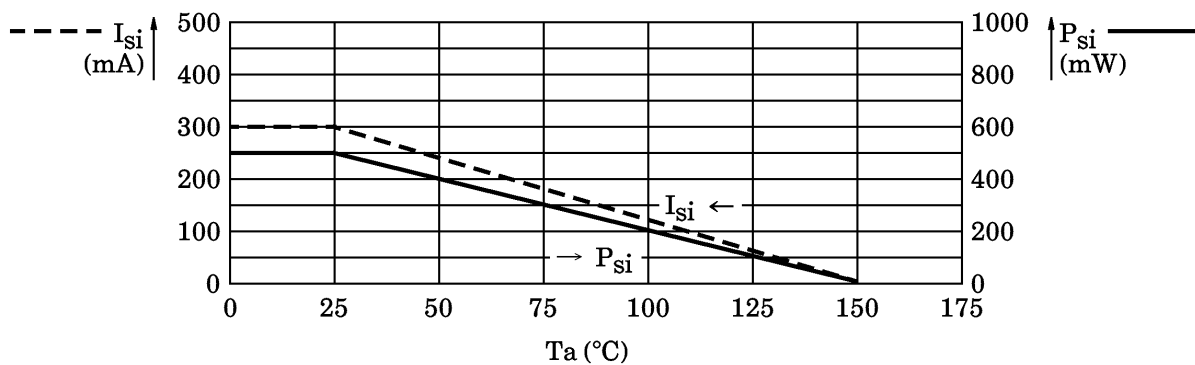


Figure 3 Dependency of maximum safety ratings on ambient temperature



RESTRICTIONS ON PRODUCT USE

000707EBC

- TOSHIBA is continually working to improve the quality and 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 comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products 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 TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..
- The TOSHIBA products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These TOSHIBA products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of TOSHIBA products listed in this document shall be made at the customer's own risk.
- 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 the foreign exchange and foreign trade laws.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.