TOSHIBA PHOTOCOUPLER

# TLP731(D4)SERIES , TLP741(D4)SERIES

ATTACHMENT : SPECIFICATIONS FOR VDE0884 OPTION : (D4)

Types : TLP731, TLP732, TLP741G, TLP741J

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

Ex. : TLP732 (D4-GR-LF2)

D4 : VDE0884 option
GR : CTR rank
LF2 : lead bend

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

Ex. TLP732 (D4-GR-LF2) → TLP732

VDE0884 ISOLATION CHARACTERISTICS

| DESCRIPTION | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Application Classification<br>(DIN VDE0109 / 12.83, Table 1)<br>for rated mains voltage≦300$V_{rms}$<br>for rated mains voltage≦600$V_{rms}$ | | <br><br>I-IV<br>I-III | — |
| Climatic Classification<br>(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<br>Vpr=1.2×$V_{IORM}$, Type and Sample Test<br>tp=60s, Partial Discharge<5pC | Vpr | 760 | Vpk |
| Input to output Test Voltage, Method B<br>Vpr=1.6×$V_{IORM}$, 100% Production Test<br>tp=1s, Partial Discharge<5pC | Vpr | 1000 | Vpk |
| Highest Permissible Overvoltage<br>(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)<br>Current (Input current $I_F$, $P_{si}$=0)<br>Power (Output or Total Power Dissipation)<br>Temperature | <br>$I_{si}$<br>$P_{si}$<br>$T_{si}$ | <br>400<br>700<br>150 | <br>mA<br>mW<br>°C |
| Insulation Resistance at Tsi, $V_{IO}$=500V | $R_{si}$ | ≧$10^9$ | Ω |

INSULATION RELATED SPECIFICATIONS

| | | |  7.62mm pitch standard type |  10.16mm pitch (LF2) type |
|---|---|---|---|---|
| Minimum Creepage Distance | (*) | Cr | 7.0mm | 8.0mm |
| Minimum Clearance | (*) | Cl | 7.0mm | 8.0mm |
| Minimum Insulation Thickness | | ti | 0.5mm | |
| 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

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 |

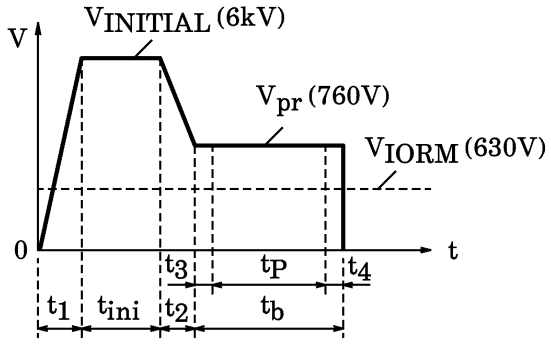



Figure 2 Partial discharge measurement procedure according to VDE0884
Non-destructive test for 100% inspection.

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 |

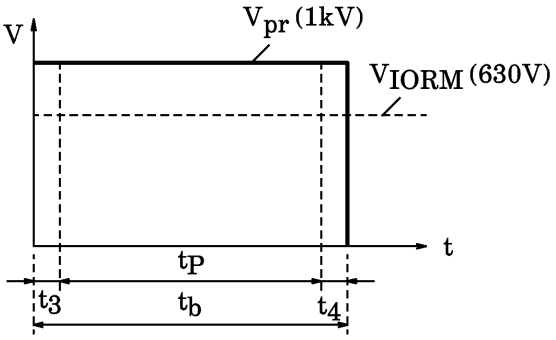
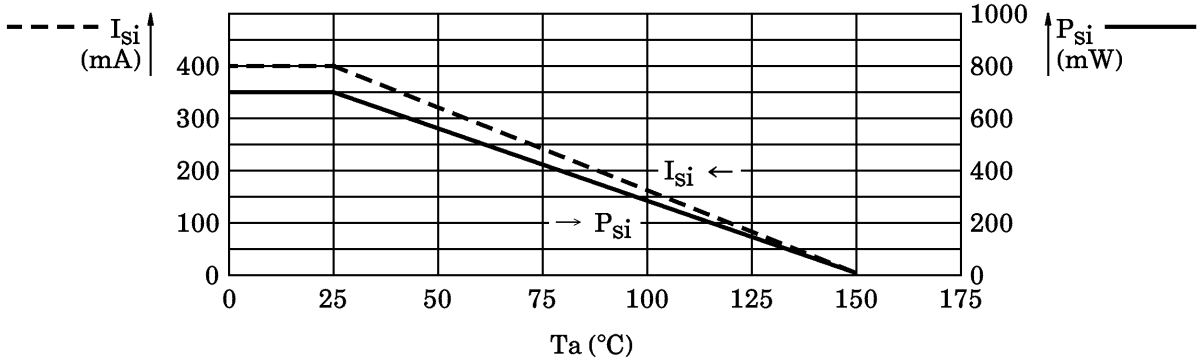



Figure 3 Dependency of maximum safety ratings on ambient temperature



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