

TOSHIBA Photocoupler

# TLP181(V4)

Attachment: Specifications for VDE0884 option

Types: TLP181

Type designations for 'option: (V4)', which are tested under VDE0884 requirements.

Ex. : TLP181 (V4-GR-TPR)

V4: VDE0884 option

GR: CTR rank name

TPR: standard taping name

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

Ex. TLP181 (V4-GR-TPR) → TLP181

## VDE0884 Isolation Characteristics

| Description                                                                                                                                                                                                          | Symbol                           | Rating                                          | Unit           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------|----------------|
| Application classification<br>(DIN VDE0110 teil 1 / 01.89, table 1)<br>for rated mains voltage $\leq 150 V_{RMS}$<br>for rated mains voltage $\leq 300 V_{RMS}$                                                      |                                  | I-IV<br>I-III                                   | —              |
| Climatic classification<br>(DIN IEC68 teil 1 / 09.80)                                                                                                                                                                |                                  | 55 / 100 / 21                                   | —              |
| Pollution degree (DIN VDE0110 teil 1 / 01.89)                                                                                                                                                                        |                                  | 2                                               | —              |
| Maximum operating insulation voltage                                                                                                                                                                                 | $U_{IORM}$                       | 565                                             | Vpk            |
| Input to output test voltage, method A<br>$U_{pr} = 1.5 \times V_{IORM}$ , type and sample test<br>$t_p = 60\text{sec}$ , partial discharge $< 5\text{pC}$                                                           | $U_{pr}$                         | 850                                             | Vpk            |
| Input to output test voltage, method B<br>$U_{pr} = 1.875 \times V_{IORM}$ , 100% production test<br>$t_p = 1\text{sec}$ , partial discharge $< 5\text{pC}$                                                          | $U_{pr}$                         | 1060                                            | Vpk            |
| Highest permissible overvoltage<br>(transient overvoltage, $t_{pr} = 10\text{s}$ )                                                                                                                                   | $U_{TR}$                         | 6000                                            | Vpk            |
| Safety limiting values (max. permissible ratings in case of<br>fault, also refer to thermal derating curve<br>current (input current $I_f$ , $P_s = 0$ )<br>power (output or total power dissipation)<br>temperature | $I_{si}$<br>$P_{si}$<br>$T_{si}$ | 250<br>400<br>150                               | mA<br>mW<br>°C |
| Insulation resistance, $V_{IO} = 500\text{V}$ , $T_a = 25^\circ\text{C}$<br>$V_{IO} = 500\text{V}$ , $T_a = 100^\circ\text{C}$<br>$V_{IO} = 500\text{V}$ , $T_a = T_s$                                               | $R_{si}$                         | $\geq 10^{12}$<br>$\geq 10^{11}$<br>$\geq 10^9$ | $\Omega$       |

Insulation Related Specifications

|                                                              |     |                                             |
|--------------------------------------------------------------|-----|---------------------------------------------|
| Minimum creepage distance*                                   | Cr  | 4.0 mm                                      |
| Minimun clearance*                                           | Cl  | 4.0 mm                                      |
| Minimum insulation thickness                                 | ti  | 0.4 mm                                      |
| Comperative tracking index<br>(DIN IEC112 / VDE0303, part 1) | CTI | 175<br>(VDE0110 teil 1 / 01.89 group III a) |

\* in accordance with DIN VDE0110 teil 1 / 01.89, table 2, & 4)

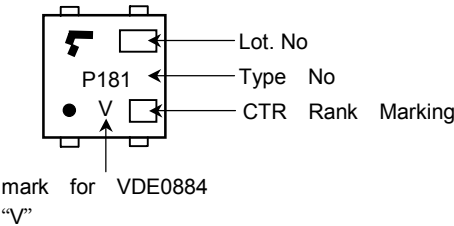
- 1. If a printed circuit is incorporated, the creepage distance and clearance may be reduced below this value. If this is not permissible, the user shall take suitable measures.
- 2. This photocoupler is suitable for 'safe electrical isolation' only within the safety limit data.  
Maintenance of the safety data shall be ensured by means of protective circuits.  
(Dieses koppellement ist fur "sichere elektrische trennung" nur innerhalb der sicherheitsgrenzdaten geeignet.  
Die einhaltung der sicherheitsgrenzen mu durch schutzschaltungen sichergestellt sein.)

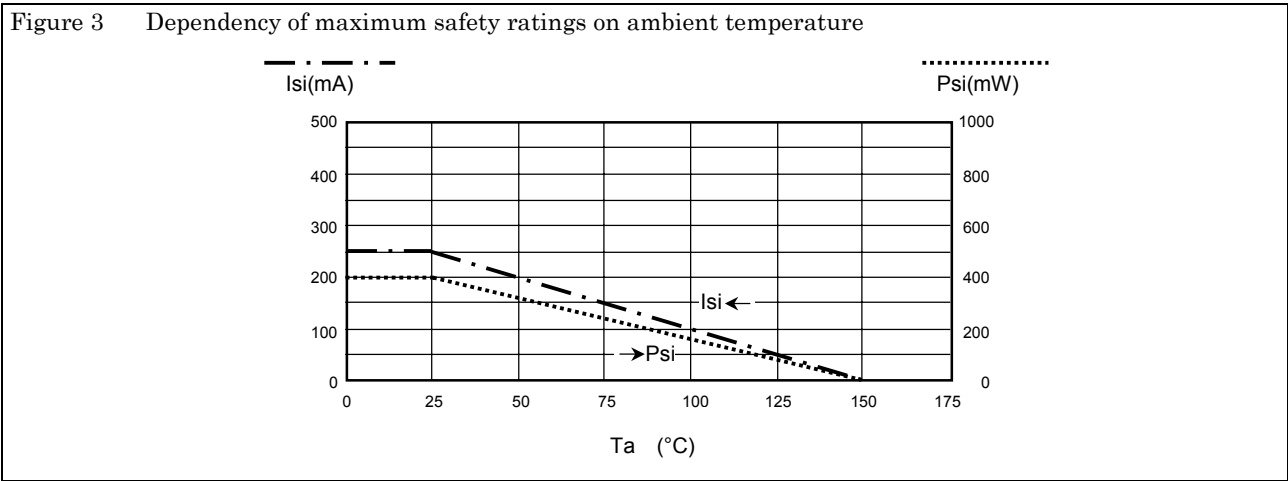
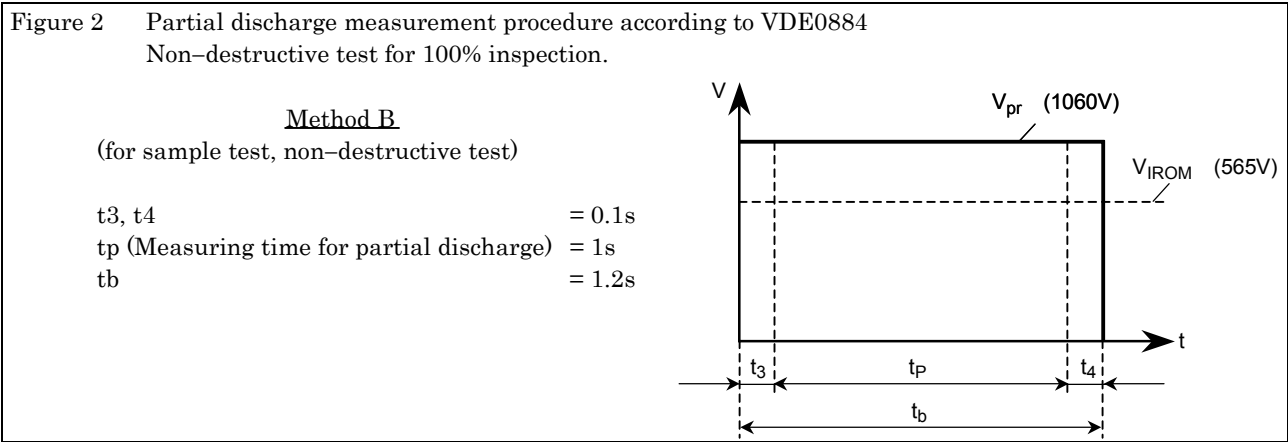
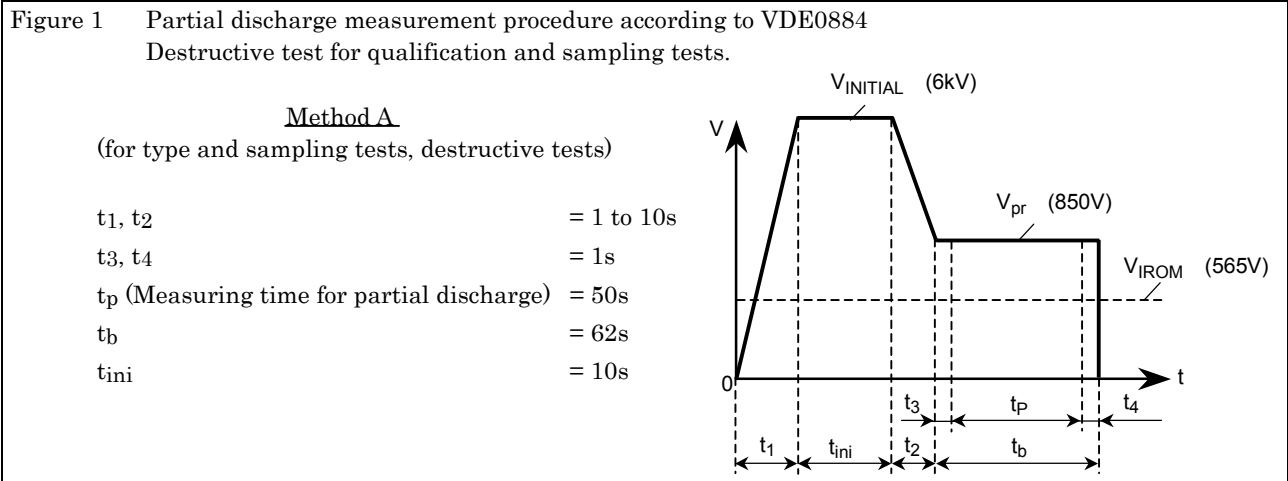
TLP181

VDE test sign: Marking on product  
for VDE0884  
: Marking on paking  
for VDE0884



Marking example:





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