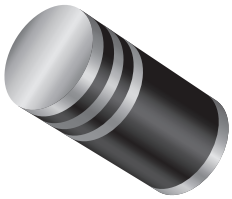
# TRANSZorb® Transient Voltage Suppressors



GL41 (DO-213AB)

## FEATURES

- Plastic MELF package
- Ideal for automated placement
- Glass passivated pallet chip junction
- Available in unidirectional polarity only
- 400 W peak pulse power capability with a 10/1000 µs waveform, repetitive rate (duty cycle): 0.01 %
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

## TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, and telecommunication.

| PRIMARY CHARACTERISTICS | |
|---|---|
| $V_{BR}$ unidirectional | 6.45 V to 210 V |
| $V_{WM}$ | 5.8 V to 171 V |
| $P_{PPM}$ | 400 W, 200 W |
| $P_D$ | 1.0 W |
| $I_{FSM}$ | 40 A |
| $T_J$ max. | 150 °C |
| Polarity | Unidirectional |
| Package | GL41 (DO-213AB) |

## MECHANICAL DATA

**Case:** GL41 (DO-213AB)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** blue band denotes the cathode which is positive with respect to the anode under normal TVS operation

**MAXIMUM RATINGS** ($T_A$ = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|---|---|---|
| Peak pulse power dissipation with a 10/1000 µs waveform (1) (fig. 1) | $P_{PPM}$ | 400 | W |
| Power dissipation on infinite heatsink at $T_L$ = 75 °C | $P_D$ | 1.0 | W |
| Peak pulse current with a 10/1000 µs waveform (1) (fig. 3) | $I_{PPM}$ | See next table | A |
| Peak forward surge current, 8.3 ms half sine-wave unidirectional only (2) | $I_{FSM}$ | 40 | A |
| Maximum instantaneous forward voltage at 25 A for unidirectional only | $V_F$ | 3.5 | V |
| Operating junction and storage temperature range | $T_J$, $T_{STG}$ | -55 to +150 | °C |

**Notes**

(1) Non-repetitive current pulse, per fig. 3 and derated above $T_A$ = 25 °C per fig. 2. Rating is 200 W above 91 V

(2) Measured at 8.3 ms single half sine-wave or equivalent square wave duty cycle = 4 pulses per minute maximum



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## ELECTRICAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted)

| DEVICE TYPE | BREAKDOWN VOLTAGE $V_{BR}$ (1) (V) | | TEST CURRENT $I_T$ (mA) | STAND-OFF VOLTAGE $V_{WM}$ (V) | MAXIMUM REVERSE LEAKAGE AT $V_{WM}$ $I_D$ (µA) | MAXIMUM PEAK PULSE CURRENT $I_{PPM}$ (2) (A) | MAXIMUM CLAMPING VOLTAGE AT $I_{PPM}$ $V_C$ (V) | MAXIMUM TEMPERATURE COEFFICIENT OF $V_{BR}$ (%/°C) |
|---|---|---|---|---|---|---|---|---|
| | MIN. | MAX. | | | | | | |
| TGL41-6.8A | 6.45 | 7.14 | 10 | 5.80 | 1000 | 38.1 | 10.5 | 0.060 |
| TGL41-7.5A | 7.13 | 7.88 | 10 | 6.40 | 500 | 35.4 | 11.3 | 0.064 |
| TGL41-8.2A | 7.79 | 8.61 | 10 | 7.02 | 200 | 33.1 | 12.1 | 0.068 |
| TGL41-9.1A | 8.65 | 9.55 | 1.0 | 7.78 | 50.0 | 29.9 | 13.4 | 0.071 |
| TGL41-10A | 9.5 | 10.5 | 1.0 | 8.55 | 10.0 | 27.6 | 14.5 | 0.076 |
| TGL41-11A | 10.5 | 11.6 | 1.0 | 9.40 | 5.0 | 25.6 | 15.6 | 0.078 |
| TGL41-12A | 11.4 | 12.6 | 1.0 | 10.2 | 5.0 | 24.0 | 16.7 | 0.081 |
| TGL41-13A | 12.4 | 13.7 | 1.0 | 11.1 | 5.0 | 22.0 | 18.2 | 0.084 |
| TGL41-15A | 14.3 | 15.8 | 1.0 | 12.8 | 5.0 | 18.9 | 21.2 | 0.087 |
| TGL41-16A | 15.2 | 16.8 | 1.0 | 13.6 | 5.0 | 17.8 | 22.5 | 0.089 |
| TGL41-18A | 17.1 | 18.9 | 1.0 | 15.3 | 5.0 | 15.9 | 25.2 | 0.091 |
| TGL41-20A | 19.0 | 21.0 | 1.0 | 17.1 | 5.0 | 14.4 | 27.7 | 0.093 |
| TGL41-22A | 20.9 | 23.1 | 1.0 | 18.8 | 5.0 | 13.1 | 30.6 | 0.095 |
| TGL41-24A | 22.8 | 25.2 | 1.0 | 20.5 | 5.0 | 12.0 | 33.2 | 0.097 |
| TGL41-27A | 25.7 | 28.4 | 1.0 | 23.1 | 5.0 | 10.7 | 37.5 | 0.099 |
| TGL41-30A | 28.5 | 31.5 | 1.0 | 25.6 | 5.0 | 9.7 | 41.4 | 0.100 |
| TGL41-33A | 31.4 | 34.7 | 1.0 | 28.2 | 5.0 | 8.8 | 45.7 | 0.101 |
| TGL41-36A | 34.2 | 37.8 | 1.0 | 30.8 | 5.0 | 8.0 | 49.9 | 0.102 |
| TGL41-39A | 37.1 | 41.0 | 1.0 | 33.3 | 5.0 | 7.4 | 53.9 | 0.103 |
| TGL41-43A | 40.9 | 45.2 | 1.0 | 36.8 | 5.0 | 6.7 | 59.3 | 0.104 |
| TGL41-47A | 44.7 | 49.4 | 1.0 | 40.2 | 5.0 | 6.2 | 64.8 | 0.104 |
| TGL41-51A | 48.5 | 53.6 | 1.0 | 43.6 | 5.0 | 5.7 | 70.1 | 0.105 |
| TGL41-56A | 53.2 | 58.8 | 1.0 | 47.8 | 5.0 | 5.2 | 77.0 | 0.106 |
| TGL41-62A | 58.9 | 65.1 | 1.0 | 53.0 | 5.0 | 4.7 | 85.0 | 0.107 |
| TGL41-68A | 64.6 | 71.4 | 1.0 | 58.1 | 5.0 | 4.3 | 92.0 | 0.107 |
| TGL41-75A | 71.3 | 78.8 | 1.0 | 64.1 | 5.0 | 3.9 | 103 | 0.108 |
| TGL41-82A | 77.9 | 86.1 | 1.0 | 70.1 | 5.0 | 3.5 | 113 | 0.108 |
| TGL41-91A | 86.5 | 95.5 | 1.0 | 77.8 | 5.0 | 3.2 | 125 | 0.109 |
| TGL41-100A | 95.0 | 105 | 1.0 | 85.5 | 5.0 | 1.46 | 137 | 0.109 |
| TGL41-110A | 105 | 116 | 1.0 | 94.0 | 5.0 | 1.32 | 152 | 0.110 |
| TGL41-120A | 114 | 126 | 1.0 | 102 | 5.0 | 1.21 | 165 | 0.110 |
| TGL41-130A | 124 | 137 | 1.0 | 111 | 5.0 | 1.12 | 179 | 0.110 |
| TGL41-150A | 143 | 158 | 1.0 | 128 | 5.0 | 0.97 | 207 | 0.111 |
| TGL41-160A | 152 | 168 | 1.0 | 136 | 5.0 | 0.91 | 219 | 0.111 |
| TGL41-170A | 162 | 179 | 1.0 | 145 | 5.0 | 0.85 | 234 | 0.111 |
| TGL41-180A | 171 | 189 | 1.0 | 154 | 5.0 | 0.81 | 246 | 0.111 |
| TGL41-200A | 190 | 210 | 1.0 | 171 | 5.0 | 0.73 | 274 | 0.111 |

**Notes**

(1) Pulse test: $t_p \leq 50$ ms

(2) Surge current waveform per fig. 3 and derate per fig. 2

(2) All terms and symbols are consistent with ANSI/IEEE C62.35

## ORDERING INFORMATION (Example)

| PREFERRED PIN | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|---|---|---|---|---|
| TGL41-6.8A-E3/96 | 0.134 | 96 | 1500 | 7" diameter plastic tape and reel |
| TGL41-6.8A-E3/97 | 0.134 | 97 | 5000 | 13" diameter plastic tape and reel |


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## RATINGS AND CHARACTERISTICS CURVES ($T_A$ = 25 °C unless otherwise noted)

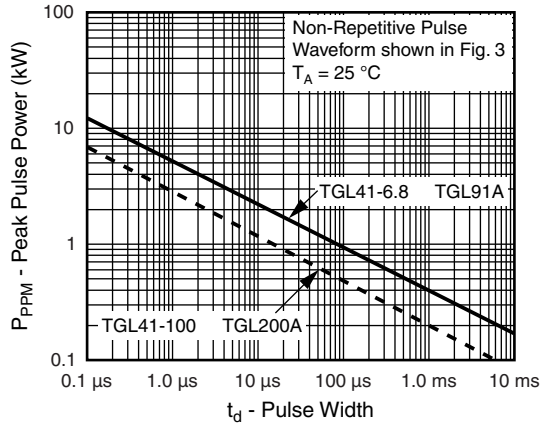



Fig. 1 - Peak Pulse Power Rating Curve

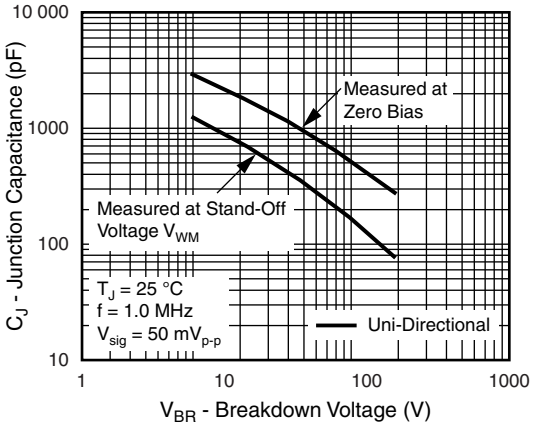



Fig. 4 - Typical Junction Capacitance

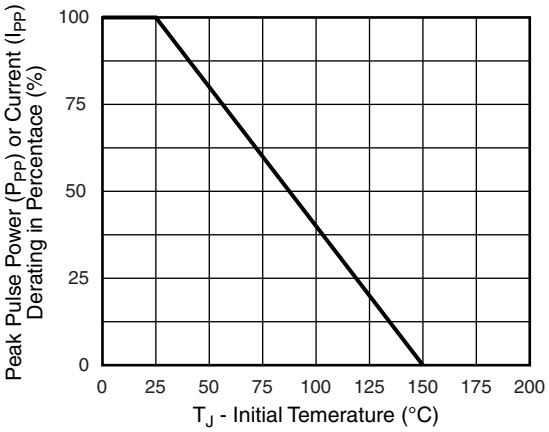



Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

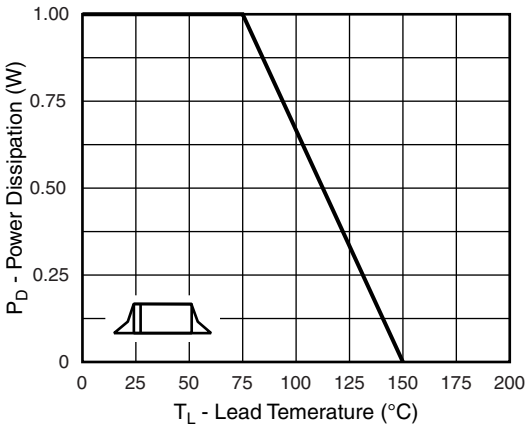



Fig. 5 - Power Derating Curve

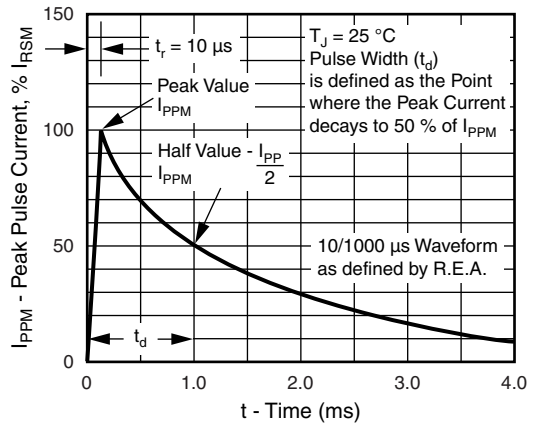



Fig. 3 - Pulse Waveform

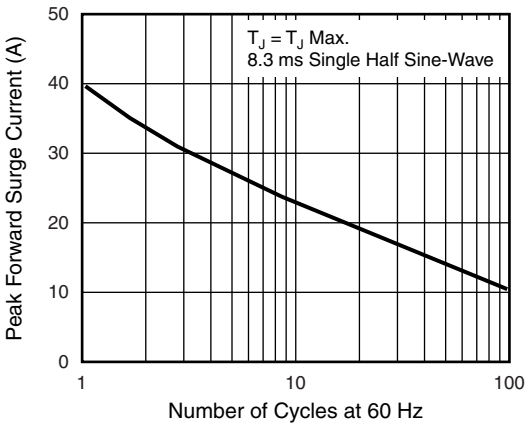
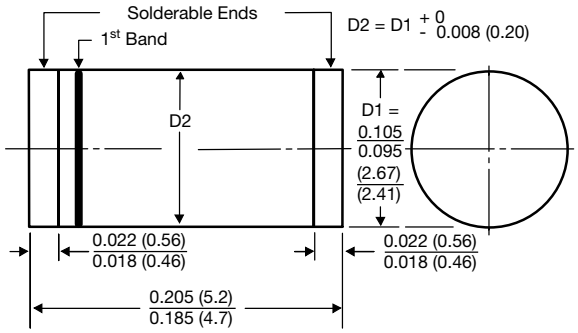



Fig. 6 - Maximum Non-Repetitive Peak Forward Surge Current
Unidirectional Only


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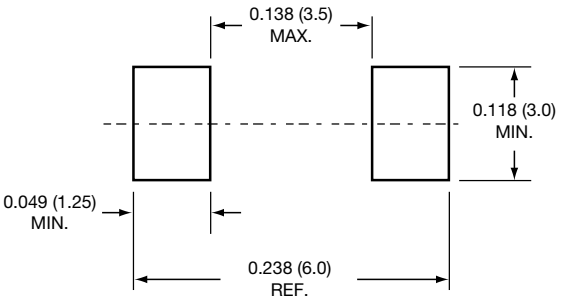
## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

**GL41 (DO-213AB)**




1st band denotes type and positive end (cathode)

**Mounting Pad Layout**





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