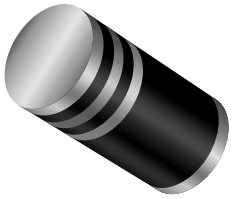
Surface Mount TRANSZORB® Transient Voltage Suppressors



DO-213AB (GL41)

FEATURES

- Plastic MELF package
- Ideal for automated placement
- Glass passivated chip junction
- Available in uni-directional polarity only
- 400 W peak pulse power capability with a 10/1000 µs waveform, repetitive rate (duty cycle): 0.01 % (200 W above 91 V)
- 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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

PRIMARY CHARACTERISTICS	
V_{BR}	6.8 V to 200 V
P_{PPM}	400 W, 200 W
P_D	1.0 W
I_{FSM}	40 A
T_J max.	150 °C

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.

MECHANICAL DATA

Case: DO-213AB (GL41)

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 JESD22-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	**SYMBO**	**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 single half sine-wave uni-directional only (2)	I_{FSM}	40	A
Maximum instantaneous forward voltage at 25 A for uni-directional 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

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

DEVICE TYPE	BREAKDOWN VOLTAGE V_{BR} (V) (1)		TEST CURRENT AT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (µA)	MAXIMUM PEAK PULSE CURRENT I_{PPM} (A) (2)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)	MAXIMUM TEMPERATURE COEFFICIENT OF V_{BR} (%/°C)
	MIN.	MAX.						
TGL41-6.8	6.12	7.48	10	5.50	1000	37.0	10.8	0.060
TGL41-6.8A	6.45	7.14	10	5.80	1000	38.1	10.5	0.060
TGL41-7.5	6.75	8.25	10	6.05	500	34.2	11.7	0.064
TGL41-7.5A	7.13	7.88	10	6.40	500	35.4	11.3	0.064
TGL41-8.2	7.38	9.02	10	6.63	200	32.0	12.5	0.068
TGL41-8.2A	7.79	8.61	10	7.02	200	33.1	12.1	0.068
TGL41-9.1	8.19	10.0	1.0	7.37	50.0	29.0	13.8	0.071
TGL41-9.1A	8.65	9.55	1.0	7.78	50.0	29.9	13.4	0.071
TGL41 -10	9.00	11.0	1.0	8.10	10.0	26.7	15.0	0.076
TGL41 -10A	9.50	10.5	1.0	8.55	10.0	27.6	14.5	0.076
TGL41 -11	9.90	12.1	1.0	8.92	5.0	24.7	16.2	0.078
TGL41 -11A	10.5	11.6	1.0	9.40	5.0	25.6	15.6	0.078
TGL41-12	10.8	13.2	1.0	9.72	5.0	23.1	17.3	0.081
TGL41-12A	11.4	12.6	1.0	10.2	5.0	24.0	16.7	0.081
TGL41-13	11.7	14.3	1.0	10.5	5.0	21.1	19.0	0.084
TGL41-13A	12.4	13.7	1.0	11.1	5.0	22.0	18.2	0.084
TGL41-15	13.5	16.5	1.0	12.1	5.0	18.2	22.0	0.087
TGL41-15A	14.3	15.8	1.0	12.8	5.0	18.9	21.2	0.087
TGL41-16	14.4	17.6	1.0	12.9	5.0	17.0	23.5	0.089
TGL41-16A	15.2	16.8	1.0	13.6	5.0	17.8	22.5	0.089
TGL41-18	16.2	19.8	1.0	14.5	5.0	15.1	26.5	0.091
TGL41-18A	17.1	18.9	1.0	15.3	5.0	15.9	25.2	0.091
TGL41-20	18.0	22.0	1.0	16.2	5.0	13.7	29.1	0.093
TGL41-20A	19.0	21.0	1.0	17.1	5.0	14.4	27.7	0.093
TGL41-22	19.8	24.2	1.0	17.8	5.0	12.5	31.9	0.095
TGL41-22A	20.9	23.1	1.0	18.8	5.0	13.1	30.6	0.095
TGL41-24	21.6	26.4	1.0	19.4	5.0	11.5	34.7	0.097
TGL41-24A	22.8	25.2	1.0	20.5	5.0	12.0	33.2	0.097
TGL41-27	24.3	29.7	1.0	21.8	5.0	10.2	39.1	0.099
TGL41-27A	25.7	28.4	1.0	23.1	5.0	10.7	37.5	0.099
TGL41-30	27.0	33.0	1.0	24.3	5.0	9.2	43.5	0.100
TGL41-30A	28.5	31.5	1.0	25.6	5.0	9.7	41.4	0.100
TGL41-33	29.7	36.3	1.0	26.8	5.0	8.4	47.7	0.101
TGL41-33A	31.4	34.7	1.0	28.2	5.0	8.8	45.7	0.101
TGL41-36	32.4	39.6	1.0	29.1	5.0	7.7	52.0	0.102
TGL41-36A	34.2	37.8	1.0	30.8	5.0	8.0	49.9	0.102
TGL41-39	35.1	42.9	1.0	31.6	5.0	7.1	56.4	0.103
TGL41-39A	37.1	41.0	1.0	33.3	5.0	7.4	53.9	0.103
TGL41-43	38.7	47.3	1.0	34.8	5.0	6.5	61.9	0.104
TGL41-43A	40.9	45.2	1.0	36.8	5.0	6.7	59.3	0.104
TGL41-47	42.3	51.7	1.0	38.1	5.0	5.9	67.8	0.104
TGL41-47A	44.7	49.4	1.0	40.2	5.0	6.2	64.8	0.104
TGL41-51	45.9	56.1	1.0	41.3	5.0	5.4	73.5	0.105

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
DEVICE TYPE	**BREAKDOWN VOLTAGE V_{BR} (V) (1)**		**TEST CURRENT AT I_T (mA)**	**STAND-OFF VOLTAGE V_{WM} (V)**	**MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (µA)**	**MAXIMUM PEAK PULSE CURRENT I_{PPM} (A) (2)**	**MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)**	**MAXIMUM TEMPERATURE COEFFICIENT OF V_{BR} (%/°C)**
	MIN.	**MAX.**						
TGL41-51A	48.5	53.6	1.0	43.6	5.0	5.7	70.1	0.105
TGL41-56	50.4	61.6	1.0	45.4	5.0	5.0	80.5	0.106
TGL41-56A	53.2	58.8	1.0	47.8	5.0	5.2	77.0	0.106
TGL41-62	55.8	68.2	1.0	50.2	5.0	4.5	89.0	0.107
TGL41-62A	58.9	65.1	1.0	53.0	5.0	4.7	85.0	0.107
TGL41-68	61.2	74.8	1.0	55.1	5.0	4.1	98.0	0.107
TGL41-68A	64.6	71.4	1.0	58.1	5.0	4.3	92.0	0.107
TGL41-75	67.5	82.5	1.0	60.7	5.0	3.7	108	0.108
TGL41-75A	71.3	78.8	1.0	64.1	5.0	3.9	103	0.108
TGL41-82	73.8	90.2	1.0	66.4	5.0	3.4	118	0.108
TGL41-82A	77.9	86.1	1.0	70.1	5.0	3.5	113	0.108
TGL41-91	81.9	100	1.0	73.7	5.0	3.1	131	0.109
TGL41-91A	86.5	95.5	1.0	77.8	5.0	3.2	125	0.109
TGL41-100	90.0	110	1.0	81.0	5.0	1.39	144	0.109
TGL41-100A	95.0	105	1.0	85.5	5.0	1.46	137	0.109
TGL41-110	99.0	121	1.0	89.2	5.0	1.27	158	0.110
TGL41-110A	105	116	1.0	94.0	5.0	1.32	152	0.110
TGL41-120	108	132	1.0	97.2	5.0	1.16	173	0.110
TGL41-120A	114	126	1.0	102	5.0	1.21	165	0.110
TGL41-130	117	143	1.0	105	5.0	1.07	187	0.110
TGL41-130A	124	137	1.0	111	5.0	1.12	179	0.110
TGL41-150	135	165	1.0	121	5.0	0.93	215	0.111
TGL41-150A	143	158	1.0	128	5.0	0.97	207	0.111
TGL41-160	144	176	1.0	130	5.0	0.87	230	0.111
TGL41-160A	152	168	1.0	136	5.0	0.91	219	0.111
TGL41-170	153	187	1.0	138	5.0	0.82	244	0.111
TGL41-170A	162	179	1.0	145	5.0	0.85	234	0.111
TGL41-180	162	198	1.0	146	5.0	0.78	258	0.111
TGL41-180A	171	189	1.0	154	5.0	0.81	246	0.111
TGL41-200	180	220	1.0	162	5.0	0.70	287	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

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	**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

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise specified)

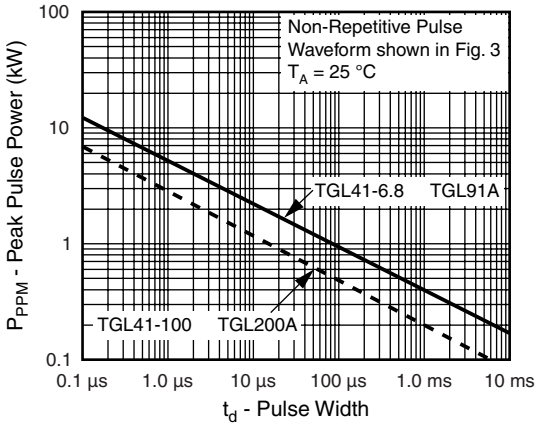


Figure 1. Peak Pulse Power Rating Curve

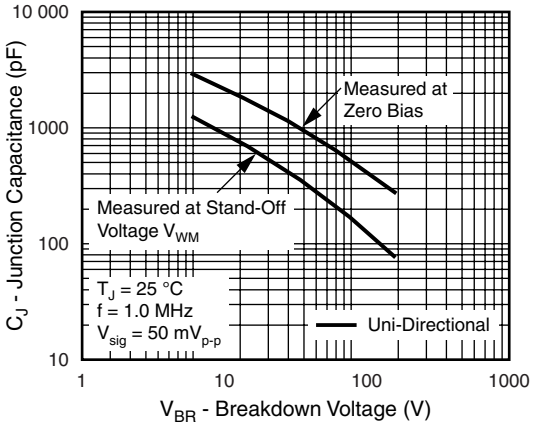


Figure 4. Typical Junction Capacitance

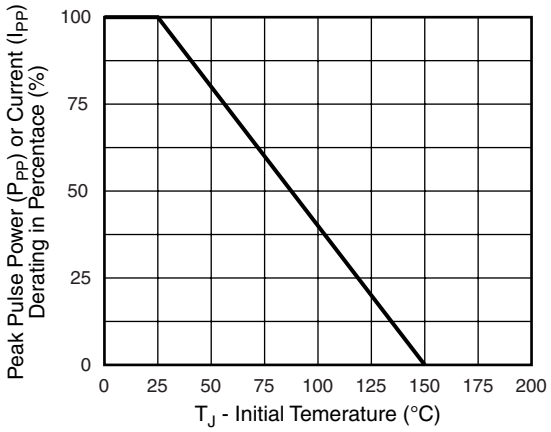


Figure 2. Pulse Power or Current vs. Initial Junction Temperature

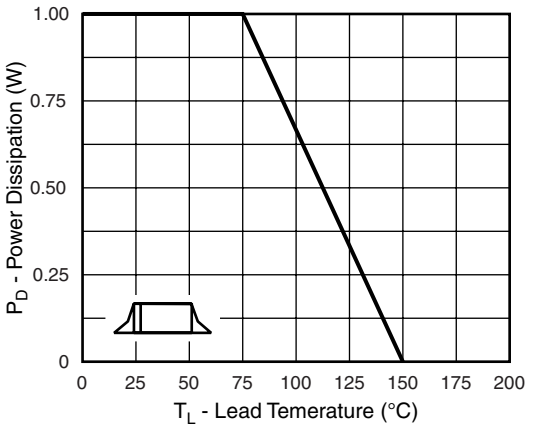


Figure 5. Power Derating Curve

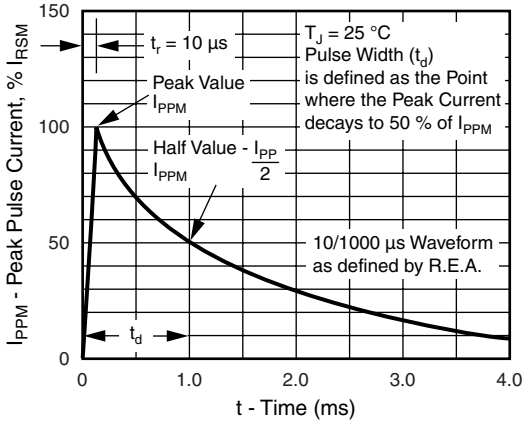


Figure 3. Pulse Waveform

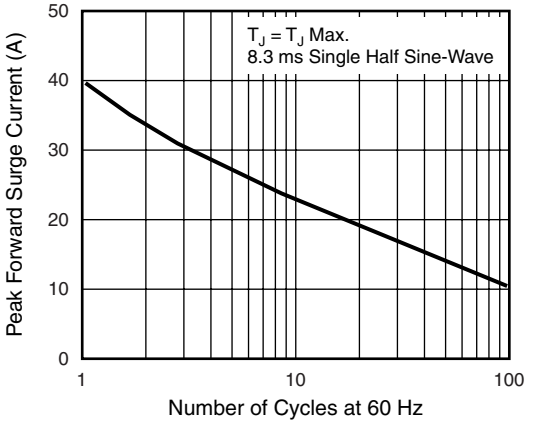
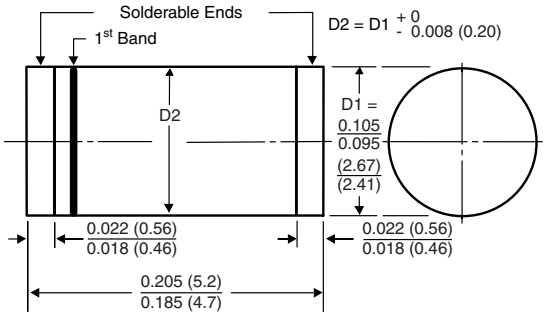


Figure 6. Maximum Non-Repetitive Peak Forward Surge Current
Uni-Directional Only

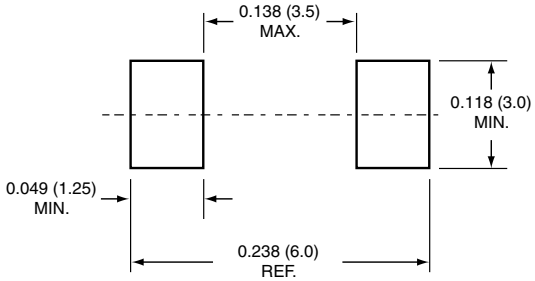
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-213AB (GL41)



1st Band Denotes Type and Positive End (Cathode)

Mounting Pad Layout



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