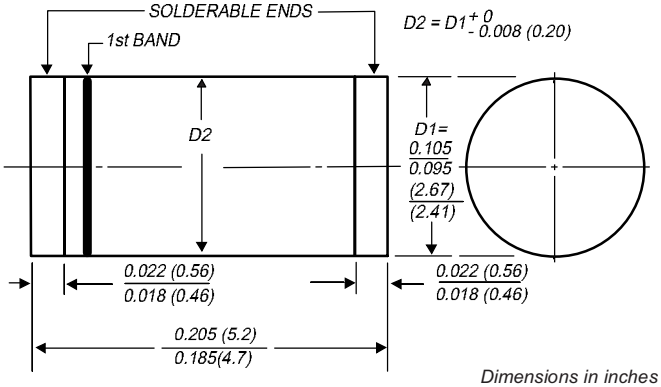
Vishay Semiconductors
formerly General Semiconductor

Surface Mount TRANSZORB® Transient Voltage Suppressors

DO-213AB (GL41)

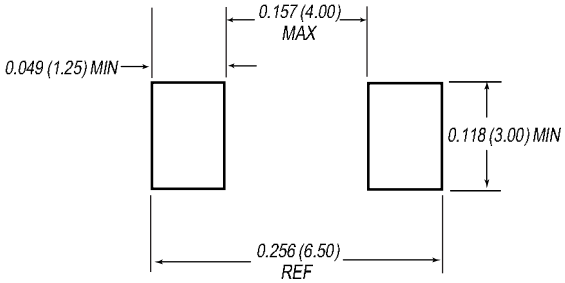
Breakdown Voltage 6.8 to 200V
Peak Pulse Power 400W



1st band denotes type and positive end (cathode)

Dimensions in inches and (millimeters)

Mounting Pad Layout



Mechanical Data

Case: JEDEC DO-213AB molded plastic body over passivated junction

Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
High temperature soldering guaranteed:
250°C/10 seconds at terminals

Polarity: Blue bands denotes the cathode which is positive with respect to the anode under normal TVS operation

Mounting Position: Any

Weight: 0.0046 oz., 0.166 g

Packaging codes/options:
26/5K per 13" Reel (12mm tape), 60K/box
46/1.5K per 7" Reel (12mm tape), 30K/box

Features

- Plastic package has Underwriters Laboratory Flammability Classificaion 94V-0
- For surface mounted applications
- Glass passivated junction
- Excellent clamping capability
- Low incremental surge resistance
- Very fast response time
- 400W peak pulse capability with a 10/1000µs waveform, repetition rate (duty cycle): 0.01% (200W above 91V)
- For devices with $V_{(BR)} \geq 10V$, I_D are typically less than 1.0µA
- High temperature soldering guaranteed: 250°C/10 seconds at terminals
- Available in unidirectional only

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000µs waveform (1)(Fig. 1)	P_{PPM}	Minimum 400	W
Steady state power dissipation at T_L = 75°C (2)	$P_{M(AV)}$	1.0	W
Peak pulse current with a 10/1000µs waveform (1)(Fig. 3)	I_{PPM}	See Next Table	A
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(3)	I_{FSM}	40	A
Maximum instantaneous forward voltage at 25A 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 200W above 91V.
(2) Mounted on copper pads to each terminal of 0.31 in^2 (8.0 mm^2) per Fig. 5
(3) Measured at 8.3ms 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] Min	Breakdown Voltage V_{BR} (V)[1] Max	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)
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

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Device Type	Breakdown Voltage V_{BR} (V)[1] Min	Max	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)
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
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	100.0	1.0	73.7	5.0	3.1	131	0.109
TGL41-91A	86.5	95.50	1.0	77.8	5.0	3.2	125	0.109
TGL41-100	90.0	110.0	1.0	81.0	5.0	1.39	144	0.109
TGL41-100A	95.0	105.0	1.0	85.5	5.0	1.46	137	0.109
TGL41-110	99.0	121.0	1.0	89.2	5.0	1.27	158	0.110
TGL41-110A	105.0	116.0	1.0	94.0	5.0	1.32	152	0.110
TGL41-120	108.0	132.0	1.0	97.2	5.0	1.16	173	0.110
TGL41-120A	114.0	126.0	1.0	102.0	5.0	1.21	165	0.110
TGL41-130	117.0	143.0	1.0	105.0	5.0	1.07	187	0.110
TGL41-130A	124.0	137.0	1.0	111.0	5.0	1.12	179	0.110
TGL41-150	135.0	165.0	1.0	121.0	5.0	0.93	215	0.111
TGL41-150A	143.0	158.0	1.0	128.0	5.0	0.97	207	0.111
TGL41-160	144.0	176.0	1.0	130.0	5.0	0.87	230	0.111
TGL41-160A	152.0	168.0	1.0	136.0	5.0	0.91	219	0.111
TGL41-170	153.0	187.0	1.0	138.0	5.0	0.82	244	0.111
TGL41-170A	162.0	179.0	1.0	145.0	5.0	0.85	234	0.111
TGL41-180	162.0	198.0	1.0	146.0	5.0	0.78	258	0.111
TGL41-180A	171.0	189.0	1.0	154.0	5.0	0.81	246	0.111
TGL41-200	180.0	220.0	1.0	162.0	5.0	0.70	287	0.111
TGL41-200A	190.0	210.0	1.0	171.0	5.0	0.73	274	0.111

Notes: (1) $V_{(BR)}$ measured after I_T applied for 300μs square wave pulse or equivalent
(2) Surge current waveform per Figure 3 and derate per Fig.2
(3) All terms and symbols are consistent with ANSI/IEEE C62.35

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Fig. 1 - Peak Pulse Power Rating Curve

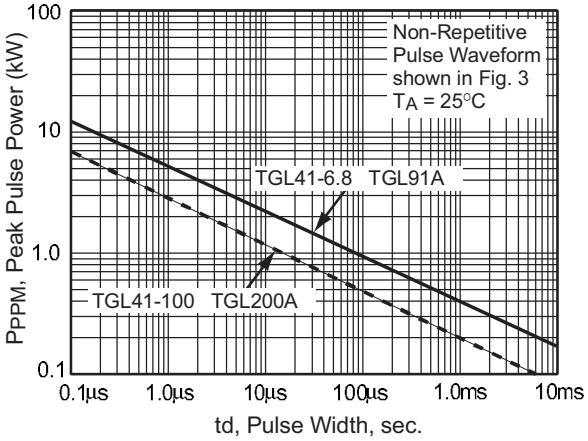


Fig. 2 - Pulse Derating Curve

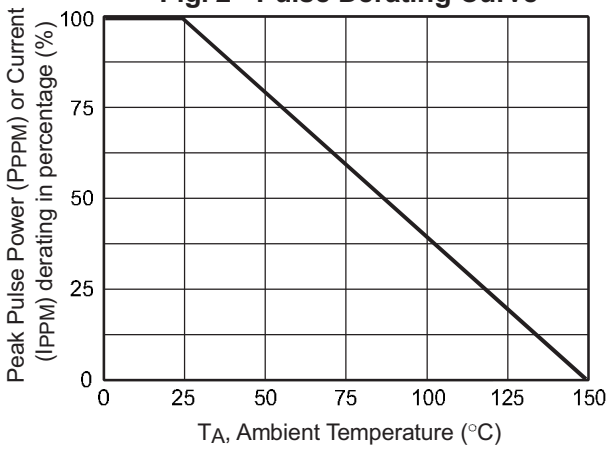


Fig. 3 – Pulse Waveform

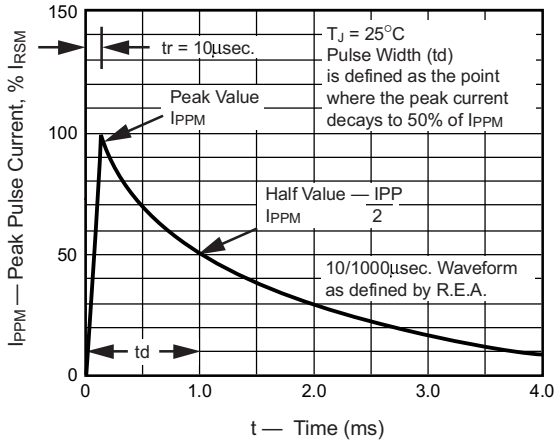


Fig. 4 - Typical Junction Capacitance

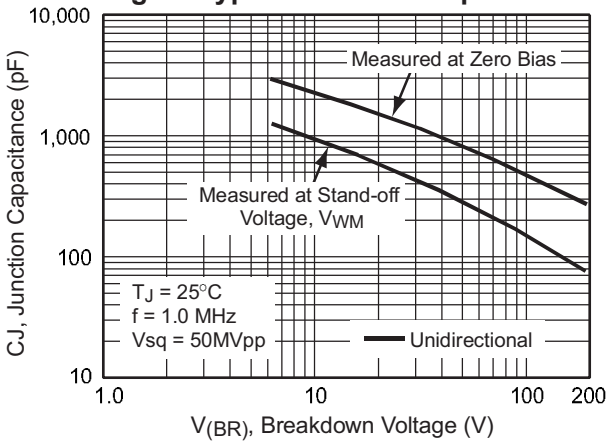


Fig. 5 - Steady State Power Derating Curve

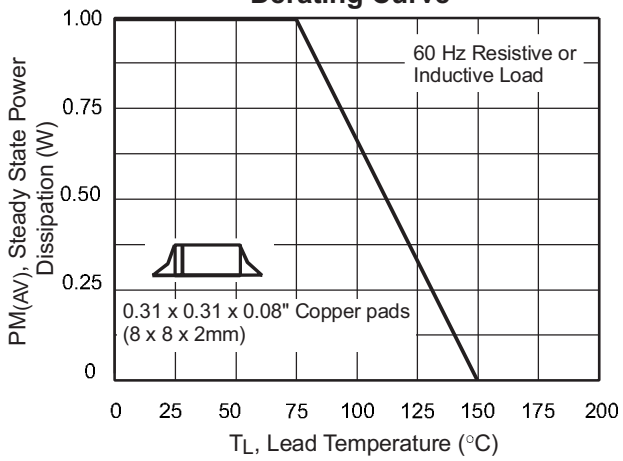
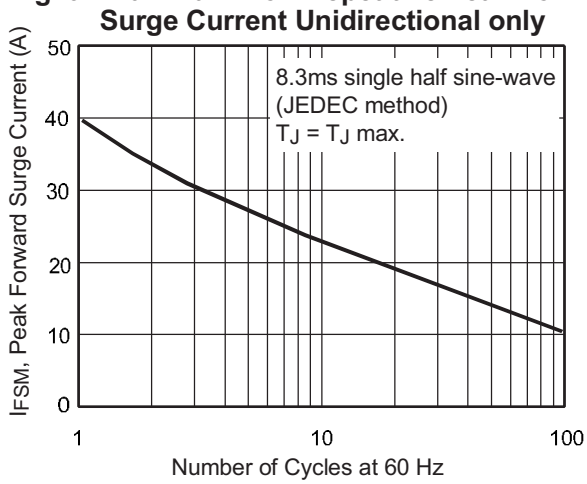


Fig. 6 - Maximum Non-Repetitive Peak Forward Surge Current Unidirectional only



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