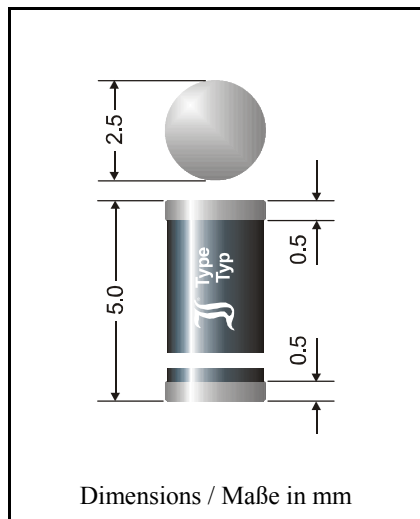


Surface Mount
unidirectional and bidirectional
Transient Voltage Suppressor Diodes

Unidirektionale und bidirektionale
Spannungs-Begrenzer-Dioden
für die Oberflächenmontage



Pulse power dissipation – Impuls-Verlustleistung	400 W
Nominal breakdown voltage	6.8...200 V
Nominale Abbruch-Spannung	
Plastic case MELF	DO-213AB
Kunststoffgehäuse MELF	
Weight approx. – Gewicht ca.	0.12 g
Plastic material has UL classification 94V-0	
Gehäusematerial UL94V-0 klassifiziert	
Standard packaging taped and reeled	see page 18
Standard Lieferform gegurtet auf Rolle	siehe Seite 18

Suffix “C” or “CA” for bidirectional types

Suffix “C” oder “CA” für bidirektionale Typen

Maximum ratings and Characteristics

Grenz- und Kennwerte

Peak pulse power dissipation (10/1000 μ s waveform) Impuls-Verlustleistung (Strom-Impuls 10/1000 μ s)	$T_A = 25^\circ\text{C}$	P_{PPM}	400 W ¹⁾
Steady state power dissipation Verlustleistung im Dauerbetrieb	$T_A = 25^\circ\text{C}$	$P_{M(AV)}$	1 W ²⁾
Peak forward surge current, 60 Hz half sine-wave Stoßstrom für eine 60 Hz Sinus-Halbwellen	$T_A = 25^\circ\text{C}$	I_{FSM}	40 A ³⁾
Max. instantaneous forward voltage Augenblickswert der Durchlaßspannung	$I_F = 25\text{ A}$	V_F	< 3.5 V ³⁾
Operating junction temperature – Sperrschichttemperatur Storage temperature – Lagerungstemperatur		T_j T_s	$-50...+150^\circ\text{C}$ $-50...+150^\circ\text{C}$
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft		R_{thA}	< 45 K/W ²⁾
Thermal resistance junction to terminal Wärmewiderstand Sperrschicht – Kontaktfläche		R_{thT}	< 10 K/W

¹⁾ Non-repetitive current pulse see curve $I_{PPM} = f(t_r)$
Höchstzulässiger Spitzenwert eines einmaligen Strom-Impulses, siehe Kurve $I_{PPM} = f(t_r)$

²⁾ Mounted on P.C. board with 25 mm² copper pads at each terminal
Montage auf Leiterplatte mit 25 mm² Kupferbelag (Löt-pad) an jedem Anschluß

³⁾ Unidirectional diodes only – nur für unidirektionale Dioden

Maximum ratings

Grenzwerte

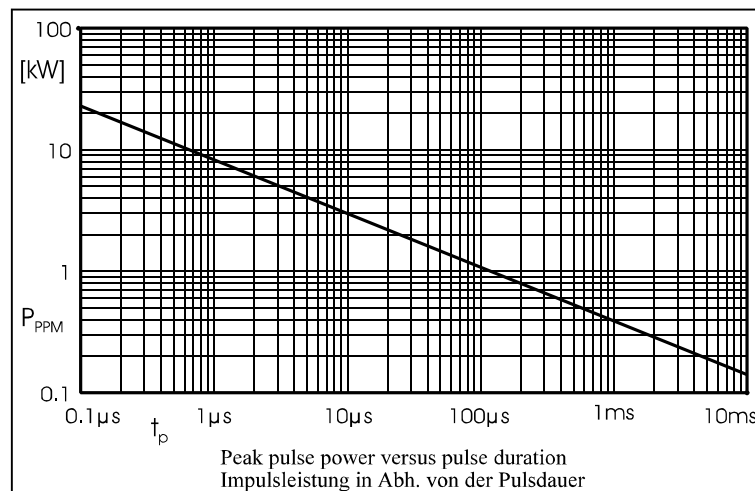
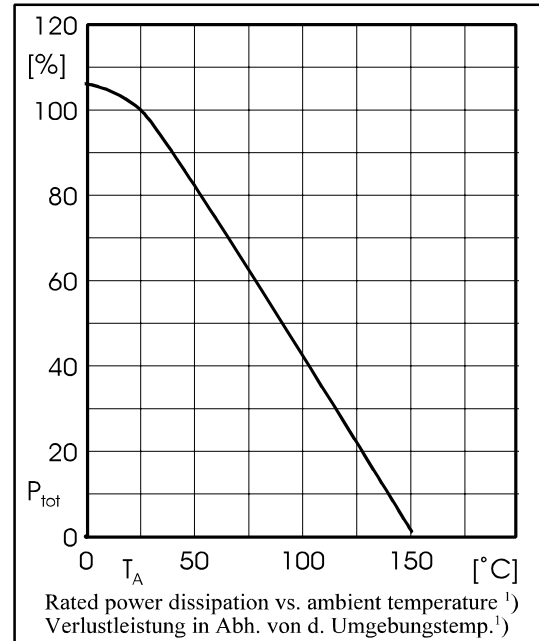
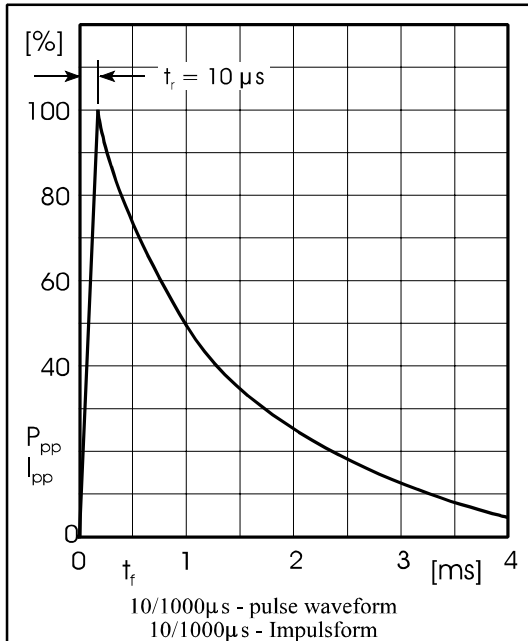
Type Typ	Breakdown voltage at I _T = 1 mA Abbruch-Spanng. bei I _T = 1 mA) at / bei I _T = 10 mA		Stand-off voltage Sperrspg.	Max. rev. current Max. Sperrstrom at / bei V _{WM}	Max. clamping voltage Max. Begrenzerspanng. at / bei I _{PPM} (10/1000μs)	
	V _{BR} [V]				V _{WM} [V]	I _D [μA]
TGL 41-6.8	6.8 ± 10%	6.12...7.48 *)	5.5	1000	10.8	38.0
TGL 41-6.8A	6.8 ± 5%	6.45...7.14 *)	5.8	1000	10.5	40.0
TGL 41-7.5	7.5 ± 10%	6.75...8.25 *)	6.0	500	11.7	35.0
TGL 41-7.5A	7.5 ± 5%	7.13...7.88 *)	6.4	500	11.3	37.0
TGL 41-8.2	8.2 ± 10%	7.38...9.02 *)	6.6	200	12.5	33.0
TGL 41-8.2A	8.2 ± 5%	7.79...8.61 *)	7.0	200	12.1	34.0
TGL 41-9.1	9.1 ± 10%	8.19...10.0	7.3	50	13.8	30.0
TGL 41-9.1A	9.1 ± 5%	8.65...9.55	7.7	50	13.4	31.0
TGL 41-10	10 ± 10%	9.0...11.0	8.1	10	15.0	28.0
TGL 41-10A	10 ± 5%	9.5...10.5	8.5	10	14.5	29.0
TGL 41-11	11 ± 10%	9.9...12.1	8.9	5	16.2	26.0
TGL 41-11A	11 ± 5%	10.5...11.6	9.4	5	15.6	27.0
TGL 41-12	12 ± 10%	10.8...13.2	9.7	5	17.3	24.0
TGL 41-12A	12 ± 5%	11.4...12.6	10.2	5	16.7	25.0
TGL 41-13	13 ± 10%	11.7...14.3	10.5	5	19.0	22.0
TGL 41-13A	13 ± 5%	12.4...13.7	11.1	5	18.2	23.0
TGL 41-15	15 ± 10%	13.5...16.5	12.1	5	22.0	19.0
TGL 41-15A	15 ± 5%	14.3...15.8	12.8	5	21.2	21.0
TGL 41-16	16 ± 10%	14.4...17.6	12.9	5	23.5	17.8
TGL 41-16A	16 ± 5%	15.2...16.8	13.6	5	22.5	18.6
TGL 41-18	18 ± 10%	16.2...19.8	14.5	5	26.5	16.0
TGL 41-18A	18 ± 5%	17.1...18.9	15.3	5	25.5	16.5
TGL 41-20	20 ± 10%	18.0...22.0	16.2	5	29.1	14.0
TGL 41-20A	20 ± 5%	19.0...21.0	17.1	5	27.7	15.0
TGL 41-22	22 ± 10%	19.8...24.2	17.8	5	31.9	13.0
TGL 41-22A	22 ± 5%	20.9...23.1	18.8	5	30.6	13.7
TGL 41-24	24 ± 10%	21.6...26.4	19.4	5	34.7	12.0
TGL 41-24A	24 ± 5%	22.8...25.2	20.5	5	33.2	12.6
TGL 41-27	27 ± 10%	24.3...29.7	21.8	5	39.1	10.7
TGL 41-27A	27 ± 5%	25.7...28.4	23.1	5	37.5	11.0
TGL 41-30	30 ± 10%	27.0...33.0	24.3	5	43.5	9.6
TGL 41-30A	30 ± 5%	28.5...31.5	25.6	5	41.4	10.0
TGL 41-33	33 ± 10%	29.7...36.3	26.8	5	47.7	8.8
TGL 41-33A	33 ± 5%	31.4...34.7	28.2	5	45.7	9.0
TGL 41-36	36 ± 10%	32.4...39.6	29.1	5	52.0	8.0
TGL 41-36A	36 ± 5%	34.2...37.8	30.8	5	49.9	8.4
TGL 41-39	39 ± 10%	35.1...42.9	31.6	5	56.4	7.4
TGL 41-39A	39 ± 5%	37.1...41.0	33.3	5	53.9	7.7

For bidirectional types (suffix "C" or "CA") electrical characteristics apply in both directions

Maximum ratings**Grenzwerte**

Type Typ	Breakdown voltage at $I_T = 1 \text{ mA}$ Abbruch-Spanng. bei $I_T = 1 \text{ mA}$) at / bei $I_T = 10 \text{ mA}$		Stand-off voltage Sperrspg.	Max. rev. current Max. Sperrstrom at / bei V_{WM}	Max. clamping voltage Max. Begrenzerspanng. at / bei $I_{PPM} (10/1000\mu\text{s})$	
	$V_{BR} [\text{V}]$		$V_{WM} [\text{V}]$	$I_D [\mu\text{A}]$	$V_C [\text{V}]$	$I_{PPM} [\text{A}]$
TGL 41-43	43 $\pm$ 10%	38.7...47.3	34.8	5	61.9	6.7
TGL 41-43A	43 $\pm$ 5%	40.9...45.2	36.8	5	59.3	7.0
TGL 41-47	47 $\pm$ 10%	42.3...51.7	38.1	5	67.8	6.2
TGL 41-47A	47 $\pm$ 5%	44.7...49.4	40.2	5	64.8	6.4
TGL 41-51	51 $\pm$ 10%	45.9...56.1	41.3	5	73.5	5.7
TGL 41-51A	51 $\pm$ 5%	48.5...53.6	43.6	5	70.1	6.0
TGL 41-56	56 $\pm$ 10%	50.4...61.6	45.4	5	80.5	5.2
TGL 41-56A	56 $\pm$ 5%	53.2...58.8	47.8	5	77.0	5.4
TGL 41-62	62 $\pm$ 10%	55.8...68.8	50.2	5	89.0	4.7
TGL 41-62A	62 $\pm$ 5%	58.9...65.1	53.0	5	85.0	5.0
TGL 41-68	68 $\pm$ 10%	61.2...74.8	55.1	5	98.0	4.2
TGL 41-68A	68 $\pm$ 5%	64.6...71.4	58.1	5	92.0	4.5
TGL 41-75	75 $\pm$ 10%	67.5...82.5	60.7	5	108	3.8
TGL 41-75A	75 $\pm$ 5%	71.3...78.8	64.1	5	103	4.0
TGL 41-82	82 $\pm$ 10%	73.8...90.2	66.4	5	118	3.5
TGL 41-82A	82 $\pm$ 5%	77.9...86.1	70.1	5	113	3.7
TGL 41-91	91 $\pm$ 10%	81.9...100	73.7	5	131	3.2
TGL 41-91A	91 $\pm$ 5%	86.5...95.5	77.8	5	125	3.3
TGL 41-100	100 $\pm$ 10%	90.0...110	81.0	5	144	2.9
TGL 41-100A	100 $\pm$ 5%	95.0...105	85.5	5	137	3.0
TGL 41-110	110 $\pm$ 10%	99.0...121	89.2	5	158	2.6
TGL 41-110A	110 $\pm$ 5%	105...116	94.0	5	152	2.7
TGL 41-120	120 $\pm$ 10%	108...132	97.2	5	173	2.4
TGL 41-120A	120 $\pm$ 5%	114...126	102	5	165	2.5
TGL 41-130	130 $\pm$ 10%	117...143	105	5	187	2.2
TGL 41-130A	130 $\pm$ 5%	124...137	111	5	179	2.3
TGL 41-150	150 $\pm$ 10%	135...165	121	5	215	1.9
TGL 41-150A	150 $\pm$ 5%	143...158	128	5	207	2.0
TGL 41-160	160 $\pm$ 10%	144...176	130	5	230	1.8
TGL 41-160A	160 $\pm$ 5%	152...168	136	5	219	1.9
TGL 41-170	170 $\pm$ 10%	153...187	138	5	244	1.7
TGL 41-170A	170 $\pm$ 5%	162...179	145	5	234	1.8
TGL 41-180	180 $\pm$ 10%	162...198	146	5	258	1.6
TGL 41-180A	180 $\pm$ 5%	171...189	154	5	246	1.7
TGL 41-200	200 $\pm$ 10%	180...220	162	5	287	1.4
TGL 41-200A	200 $\pm$ 5%	190...210	171	5	274	1.5

For bidirectional types (suffix "C" or "CA") electrical characteristics apply in both directions
 Für bidirektionale Dioden (Suffix "C" oder "CA") gelten die el. Werte in beiden Richtungen



The order of type numbers is graded to the international E 24 standard. The standard tolerance of the breakdown voltage for each type is $\pm 10\%$. Suffix "A" denotes a tolerance of $\pm 5\%$ for the breakdown voltage.

e.g.: TGL 41-51C = bidirectional diode, $V_{BR} = 51 \text{ V } (\pm 10\%)$, $V_{WM} \geq 41.3 \text{ V}$ at $I_D = 5 \mu\text{A}$
TGL 41-9.1A = unidirectional diode, $V_{BR} = 9.1 \text{ V } (\pm 5\%)$, $V_{WM} \geq 7.7 \text{ V}$ at $I_D = 50 \mu\text{A}$

Die Abstufung der Typen innerhalb der Reihe entspricht dem internationalen E 24-Standard. Die Toleranz der Arbeitsspannung jedes einzelnen Typs beträgt in der Standardausführung $\pm 10\%$. Suffix "A" kennzeichnet eine Toleranz der Arbeitsspannung von $\pm 5\%$.

z.B.: TGL 41-51C = bidirektionale Diode, $V_{BR} = 51 \text{ V } (\pm 10\%)$, $V_{WM} \geq 41.3 \text{ V}$ at $I_D = 5 \mu\text{A}$
TGL 41-9.1A = unidirektionale Diode, $V_{BR} = 9.1 \text{ V } (\pm 5\%)$, $V_{WM} \geq 7.7 \text{ V}$ at $I_D = 50 \mu\text{A}$

¹⁾ Mounted on P.C. board with 25 mm² copper pads at each terminal
Montage auf Leiterplatte mit 25 mm² Kupferbelag (Lötpad) an jedem Anschluß