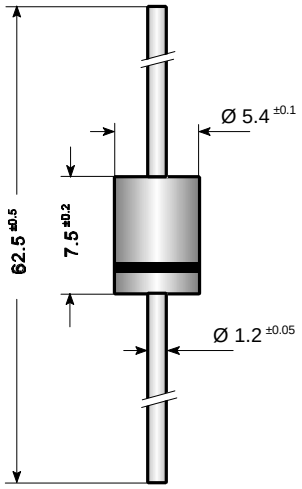
Unidirectional and bidirectional Transient Voltage Suppressor Diodes

Unidirektionale und bidirektionale Spannungs-Begrenzer-Dioden



Dimensions / Maße in mm

Peak pulse power dissipation Impuls-Verlustleistung	1500 W
Nominal breakdown voltage Nenn-Arbeitsspannung	6.8...440 V
Plastic case – Kunststoffgehäuse	Ø 5.6 x 7.5 [mm]
Weight approx. – Gewicht ca.	1.4 g
Plastic material has UL classification 94V-0 Gehäusematerial UL94V-0 klassifiziert	
Standard packaging taped in ammo pack Standard Lieferform gegurtet in Ammo-Pack	see page 17 siehe Seite 17

For bidirectional types use suffix “C” or “CA” Suffix “C” oder “CA” für bidirektionale Typen

Maximum ratings — Grenzwerte

Peak pulse power dissipation (10/1000 µs waveform) Impuls-Verlustleistung (Strom-Impuls 10/1000 µs)	T_A = 25 °C	P_{PPM}	1500 W [1]
Steady state power dissipation Verlustleistung im Dauerbetrieb	T_A = 25 °C	$P_{M(AV)}$	5 W [2]
Peak forward surge current, 60 Hz half sine-wave Stoßstrom für eine 60 Hz Sinus-Halbwelle	T_A = 25°C	I_{FSM}	200 A [3]
Operating junction temperature – Sperrschichttemperatur		T_j	– 50…+175°C
Storage temperature – Lagerungstemperatur		T_S	– 50…+175°C

Characteristics — Kennwerte

Max. instantaneous forward voltage Augenblickswert der Durchlaßspannung	I_F = 50 A	$V_{BR} \le 200$ V	V_F	< 3.5 V [3]
		$V_{BR} > 200$ V	V_F	< 5.0 V [3]
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft			R_{thA}	< 25 K/W [2]

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

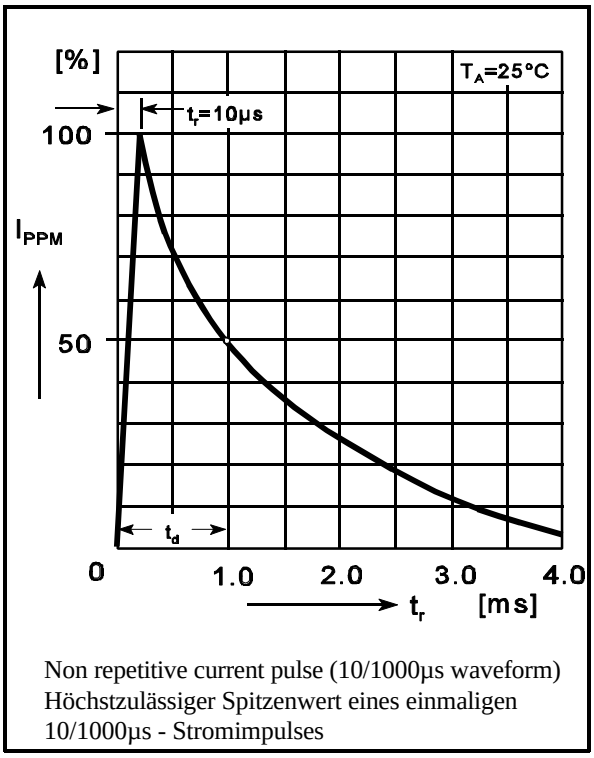
[2] Valid, if leads are kept at ambient temperature at a distance of 10 mm from case
Gültig, wenn die Anschlußdrähte in 10 mm Abstand von Gehäuse auf Umgebungstemperatur gehalten werden

[3] Unidirectional diodes only – nur für unidirektionale Dioden

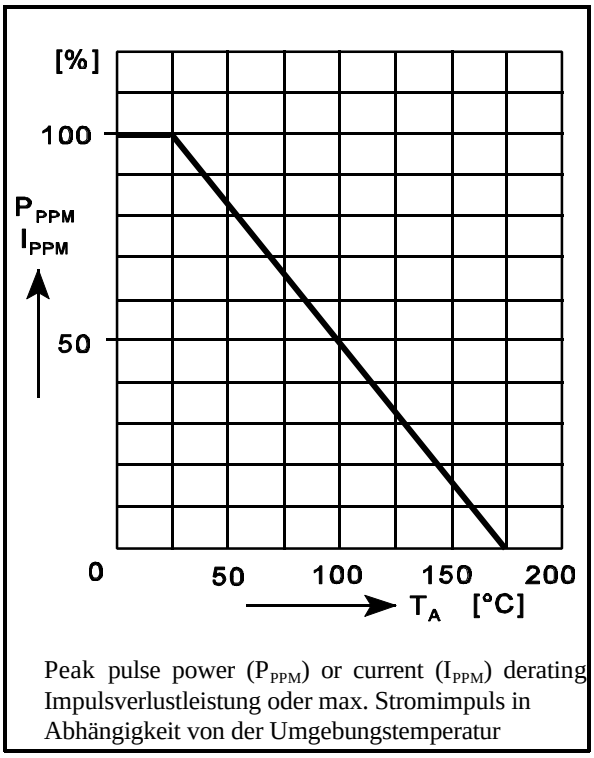
Maximum ratings						**Grenzwerte**
Type Typ	Breakdown voltage at I_T = 1 mA Arbeitsspannung bei I_T = 1 mA *) tested at / gemessen bei 10 mA		Max. stand-off voltage at leakage current Max. Sperrspannung bei Sperrstrom		Max. clamping voltage at 10/1000µs-pulse current Max. Begrenzerspannung bei 10/1000µs-Stromimp.	
	V_{BR} [V]		V_{WM} [V]	I_D [µA]	V_C [V]	I_{PPM} [A]
1.5KE6.8	6.8 ± 10%	6.12...7.48 *)	5.5	1000	10.8	145
1.5KE6.8A	6.8 ± 5%	6.45...7.14 *)	5.8	1000	10.5	150
1.5KE7.5	7.5 ± 10%	6.75...8.25 *)	6.0	500	11.7	134
1.5KE7.5A	7.5 ± 5%	7.13...7.88 *)	6.4	500	11.3	139
1.5KE8.2	8.2 ± 10%	7.38...9.02 *)	6.6	200	12.5	126
1.5KE8.2A	8.2 ± 5%	7.79...8.61 *)	7.0	200	12.1	130
1.5KE9.1	9.1 ± 10%	8.19...10.0	7.3	50	13.8	114
1.5KE9.1A	9.1 ± 5%	8.65...9.55	7.7	50	13.4	117
1.5KE10	10 ± 10%	9.0...11.0	8.1	10	15.0	105
1.5KE10A	10 ± 5%	9.5...10.5	8.5	10	14.5	108
1.5KE11	11 ± 10%	9.9...12.1	8.9	5	16.2	97
1.5KE11A	11 ± 5%	10.5...11.6	9.4	5	15.6	100
1.5KE12	12 ± 10%	10.8...13.2	9.7	5	17.3	91
1.5KE12A	12 ± 5%	11.4...12.6	10.2	5	16.7	94
1.5KE13	13 ± 10%	11.7...14.3	10.5	5	19.0	82
1.5KE13A	13 ± 5%	12.4...13.7	11.1	5	18.2	86
1.5KE15	15 ± 10%	13.5...16.5	12.1	5	22.0	71
1.5KE15A	15 ± 5%	14.3...15.8	12.8	5	21.2	74
1.5KE16	16 ± 10%	14.4...17.6	12.9	5	23.5	67
1.5KE16A	16 ± 5%	15.2...16.8	13.6	5	22.5	70
1.5KE18	18 ± 10%	16.2...19.8	14.5	5	26.5	59
1.5KE18A	18 ± 5%	17.1...18.9	15.3	5	25.5	60
1.5KE20	20 ± 10%	18.0...22.0	16.2	5	29.1	54
1.5KE20A	20 ± 5%	19.0...21.0	17.1	5	27.7	56
1.5KE22	22 ± 10%	19.8...24.2	17.8	5	31.9	49
1.5KE22A	22 ± 5%	20.9...23.1	18.8	5	30.6	51
1.5KE24	24 ± 10%	21.6...26.4	19.4	5	34.7	45
1.5KE24A	24 ± 5%	22.8...25.2	20.5	5	33.2	47
1.5KE27	27 ± 10%	24.3...29.7	21.8	5	39.1	40
1.5KE27A	27 ± 5%	25.7...28.4	23.1	5	37.5	42
1.5KE30	30 ± 10%	27.0...33.0	24.3	5	43.5	36
1.5KE30A	30 ± 5%	28.5...31.5	25.6	5	41.4	38
1.5KE33	33 ± 10%	29.7...36.3	26.8	5	47.7	33
1.5KE33A	33 ± 5%	31.4...34.7	28.2	5	45.7	34
1.5KE36	36 ± 10%	32.4...39.6	29.1	5	52.0	30
1.5KE36A	36 ± 5%	34.2...37.8	30.8	5	49.9	31
1.5KE39	39 ± 10%	35.1...42.9	31.6	5	56.4	27
1.5KE39A	39 ± 5%	37.1...41.0	33.3	5	53.9	29
1.5KE43	43 ± 10%	38.7...47.3	34.8	5	61.9	25
1.5KE43A	43 ± 5%	40.9...45.2	36.8	5	59.3	26
1.5KE47	47 ± 10%	42.3...51.7	38.1	5	67.8	23
1.5KE47A	47 ± 5%	44.7...49.4	40.2	5	64.8	24
1.5KE51	51 ± 10%	45.9...56.1	41.3	5	73.5	21
1.5KE51A	51 ± 5%	48.5...53.6	43.6	5	70.1	22

Maximum ratings						**Grenzwerte**
Type Typ	Breakdown voltage at I_T = 1 mA Arbeitsspannung bei I_T = 1 mA *) tested at / gemessen bei 10 mA		Max. stand-off voltage at leakage current Max. Sperrspannung bei Sperrstrom		Max. clamping voltage at 10/1000µs-pulse current Max. Begrenzerspannung bei 10/1000µs-Stromimp.	
	V_{BR} [V]		V_{WM} [V]	I_D [µA]	V_C [V]	I_{PPM} [A]
1.5KE56	56 ± 10%	50.4...61.6	45.4	5	80.5	19
1.5KE56A	56 ± 5%	53.2...58.8	43.6	5	77.0	20
1.5KE62	62 ± 10%	55.8...68.8	50.2	5	89.0	17
1.5KE62A	62 ± 5%	58.9...65.1	53.0	5	85.0	18
1.5KE68	68 ± 10%	61.2...74.8	55.1	5	98.0	16.0
1.5KE68A	68 ± 5%	64.6...71.4	58.1	5	92.0	17.0
1.5KE75	75 ± 10%	67.5...82.5	60.7	5	108	14.0
1.5KE75A	75 ± 5%	71.3...78.8	64.1	5	103	15.0
1.5KE82	82 ± 10%	73.8...90.2	66.4	5	118	13.0
1.5KE82A	82 ± 5%	77.9...86.1	70.1	5	113	13.9
1.5KE91	91 ± 10%	81.9...100	73.7	5	131	12.0
1.5KE91A	91 ± 5%	86.5...95.5	77.8	5	125	12.6
1.5KE100	100 ± 10%	90.0...110	81.0	5	144	10.9
1.5KE100A	100 ± 5%	95.0...105	85.5	5	137	11.4
1.5KE110	110 ± 10%	99.0...121	89.2	5	158	9.9
1.5KE110A	110 ± 5%	105...116	94.0	5	152	10.3
1.5KE120	120 ± 10%	108...132	97.2	5	173	9.1
1.5KE120A	120 ± 5%	114...126	102	5	165	9.5
1.5KE130	130 ± 10%	117...143	105	5	187	8.4
1.5KE130A	130 ± 5%	124...137	111	5	179	8.7
1.5KE150	150 ± 10%	135...165	121	5	215	7.3
1.5KE150A	150 ± 5%	143...158	128	5	207	7.6
1.5KE160	160 ± 10%	144...176	130	5	230	6.8
1.5KE160A	160 ± 5%	152...168	136	5	219	7.1
1.5KE170	170 ± 10%	153...187	138	5	244	6.4
1.5KE170A	170 ± 5%	162...179	145	5	234	6.7
1.5KE180	180 ± 10%	162...198	146	5	258	6.1
1.5KE180A	180 ± 5%	171...189	154	5	246	6.4
1.5KE200	200 ± 10%	180...220	162	5	287	5.4
1.5KE200A	200 ± 5%	190...210	171	5	274	5.7
1.5KE220	220 ± 10%	198...242	175	5	344	4.5
1.5KE220A	220 ± 5%	209...231	185	5	328	4.8
1.5KE250	250 ± 10%	225...275	202	5	360	4.3
1.5KE250A	250 ± 5%	237...267	214	5	344	4.5
1.5KE300	300 ± 10%	270...330	243	5	430	3.6
1.5KE300A	300 ± 5%	285...315	256	5	414	3.8
1.5KE350	350 ± 10%	315...385	284	5	504	3.1
1.5KE350A	350 ± 5%	332...368	300	5	482	3.2
1.5KE400	400 ± 10%	360...440	324	5	574	2.7
1.5KE400A	400 ± 5%	380...420	342	5	548	2.8
1.5KE440	440 ± 10%	396...484	356	5	631	2.4
1.5KE440A	440 ± 5%	418...462	376	5	602	2.6

For bidirectional types (suffix “C”), electrical characteristics apply in both directions.
Für bidirektionale Dioden (Suffix “C”) gelten die elektrischen Werte in beiden Richtungen.



Non repetitive current pulse (10/1000µs waveform)
Höchstzulässiger Spitzenwert eines einmaligen 10/1000µs - Stromimpulses



Peak pulse power (P_{PPM}) or current (I_{PPM}) derating
Impulsverlustleistung oder max. Stromimpuls in Abhängigkeit von der Umgebungstemperatur

The order of type numbers is graded to the international E 24 standard. The standard tolerance of the breakdown voltage for each type is ± 10%. Suffix “A” denotes a tolerance of ± 5% for the breakdown voltage.

e.g.: 1.5KE160CA = bidirectional diode, V_{BR} = 160V (± 5%)
1.5KE27A = unidirectional diode, V_{BR} = 27V (± 5%)

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

z.B.: 1.5KE160CA = bidirektionale Diode, V_{BR} = 160V (± 5%)
1.5KE27A = unidirektionale Diode, V_{BR} = 27V (± 5%)