

# Comchip 1.5KE-G Transient Voltage Suppressor Datasheet

<http://www.manuallib.com/comchip/1-5ke-g-transient-voltage-suppressor-datasheet.html>

## Features

- Glass passivated chip.
- Low leakage.
- 1500W peak pulse power capability with a 10/1000 $\mu$ s waveform, repetitive rate (duty cycle): 0.01%.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.

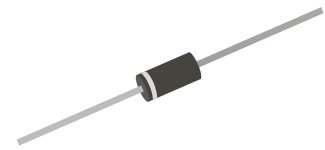
ManualLib.com collects and classifies the global product instruction manuals to help users access anytime and anywhere, helping users make better use of products.

<http://www.manuallib.com>

# 1500W Transient Voltage Suppressor

## 1.5KE-G Series

**Stand-off Voltage: 6.8 ~ 600V**  
**Power Dissipation: 1500 Watts**  
**RoHS Device**

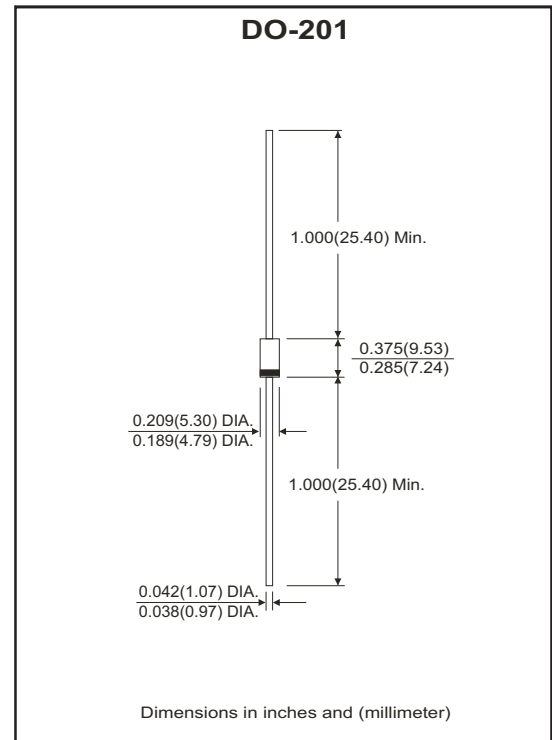


### Features

- Glass passivated chip.
- Low leakage.
- 1500W peak pulse power capability with a 10/1000 $\mu$ s waveform, repetitive rate (duty cycle): 0.01%.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.

### Mechanical Data

- Case: Molded plastic DO-201
- Epoxy: UL 94V-0 rate flame retardant
- Terminals: Axial leads, solderable per MIL-STD-202, Method 208 guranteed
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any
- Approx. weight: 0.844 grams



### Maximum Ratings and Electrical Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 $\mu$ s waveform (Note 1)	PPP	1500	W
Peak pulse current with a 10/1000 $\mu$ s waveform (Note 1)	IPP	See Next Table	A
Power dissipation on infinite heatsink at TL=75°C	PD	6.5	W
Peak forward surge current, 8.3ms single half sine-wave unidirectional only (JEDEC method) (Note 2)	IFSM	200	A
Maximum instantaneous forward voltage at 100 A for unidirectional only (Note 3)	VF	3.5/5.0	V
Operating junction and storage temperature range	TJ, TSTG	-55 to +150	°C

NTOES:

- (1) Non-repetitive current pulse, per fig.5 and derated above TA=25°C per fig.1
- (2) Measured on 8.3ms single half sine-wave or equivalent square wave, square wave, duty cycle=4 pulses per minute maximum
- (3) VF<3.5V for devices of VBR<200V and VF<5.0V for devices of VBR>201V

Company reserves the right to improve product design , functions and reliability without notice.

REV:C

## RATING AND CHARACTERISTIC CURVES (1.5KE6.8-G Thru. 1.5KE600-G )

Fig.1- Pulse Derating Curve

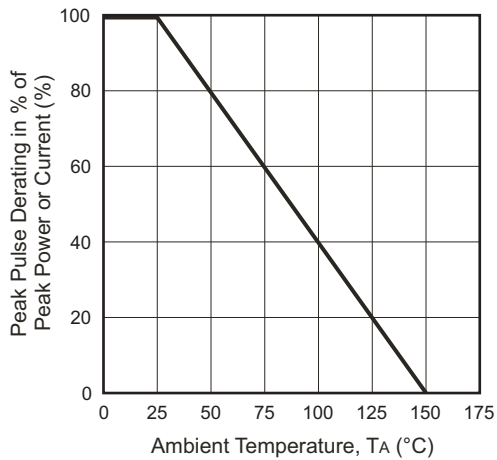


Fig.2- Steady State Power Derating Curve

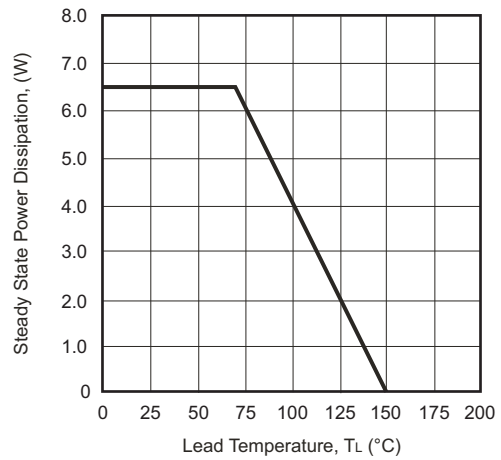


Fig.3- Max. Non-repetitive Surge Current

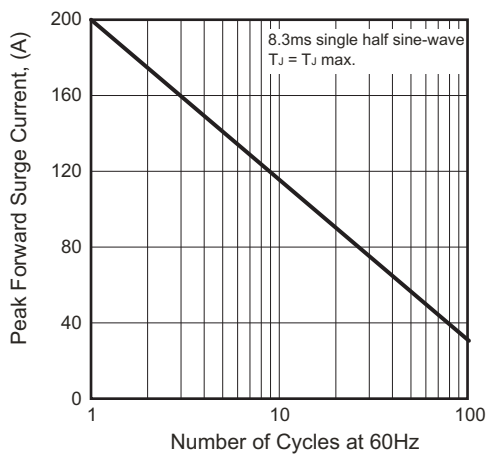


Fig.4- Typical Junction Capacitance

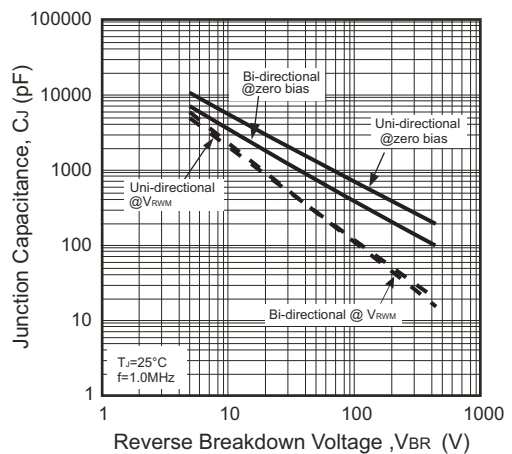


Fig.5- Pulse Waveform

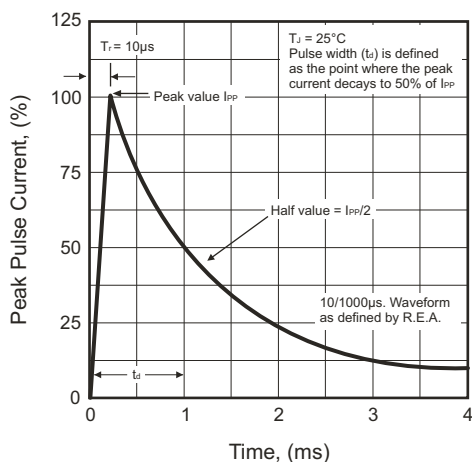
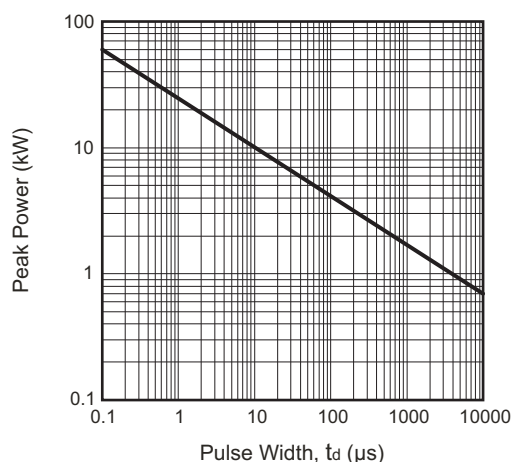


Fig.6- Peak Pulse Power Rating Curve



Company reserves the right to improve product design, functions and reliability without notice.

REV:C

# 1500W Transient Voltage Suppressor

## Electrical Characteristics (1.5KE6.8-G Thru. 1.5KE600-G)

Part No.	Breakdown Voltage V <sub>BR</sub> (V) @ I <sub>T</sub>			Working Peak Reverse Voltage V <sub>RWM</sub> (V)	Maximum Reverse Leakage at V <sub>RWM</sub> I <sub>R</sub> (μA)	Maximum Reverse Surge Current I <sub>PP</sub> (A)	Maximum Clamping Voltage V <sub>c</sub> (V)	Marking Code	
	MIN.(V)	MAX.(V)	I <sub>T</sub> (mA)					UNI	BI
1.5KE6.8(C)A-G	6.46	7.14	10	5.8	1000	142.86	10.5	1.5KE6.8A	1.5KE6.8CA
1.5KE7.5(C)A-G	7.13	7.88	10	6.4	500	132.74	11.3	1.5KE7.5A	1.5KE7.5CA
1.5KE8.2(C)A-G	7.79	8.61	10	7.0	200	123.97	12.1	1.5KE8.2A	1.5KE8.2CA
1.5KE9.1(C)A-G	8.65	9.56	1.0	7.8	50	111.94	13.4	1.5KE9.1A	1.5KE9.1CA
1.5KE10(C)A-G	9.50	10.50	1.0	8.6	10	103.45	14.5	1.5KE10A	1.5KE10CA
1.5KE11(C)A-G	10.45	11.55	1.0	9.4	5.0	96.15	15.6	1.5KE11A	1.5KE11CA
1.5KE12(C)A-G	11.40	12.60	1.0	10.2	5.0	89.82	16.7	1.5KE12A	1.5KE12CA
1.5KE13(C)A-G	12.35	13.65	1.0	11.1	1.0	82.42	18.2	1.5KE13A	1.5KE13CA
1.5KE15(C)A-G	14.25	15.75	1.0	12.8	1.0	70.75	21.2	1.5KE15A	1.5KE15CA
1.5KE16(C)A-G	15.20	16.80	1.0	13.6	1.0	66.67	22.5	1.5KE16A	1.5KE16CA
1.5KE18(C)A-G	17.10	18.90	1.0	15.3	1.0	59.52	25.2	1.5KE18A	1.5KE18CA
1.5KE20(C)A-G	19.00	21.00	1.0	17.1	1.0	54.15	27.7	1.5KE20A	1.5KE20CA
1.5KE22(C)A-G	20.90	23.10	1.0	18.8	1.0	49.02	30.6	1.5KE22A	1.5KE22CA
1.5KE24(C)A-G	22.80	25.20	1.0	20.5	1.0	45.18	33.2	1.5KE24A	1.5KE24CA
1.5KE27(C)A-G	25.65	28.35	1.0	23.1	1.0	40.00	37.5	1.5KE27A	1.5KE27CA
1.5KE30(C)A-G	28.50	31.50	1.0	25.6	1.0	36.23	41.4	1.5KE30A	1.5KE30CA
1.5KE33(C)A-G	31.35	34.65	1.0	28.2	1.0	32.82	45.7	1.5KE33A	1.5KE33CA
1.5KE36(C)A-G	34.20	37.80	1.0	30.8	1.0	30.06	49.9	1.5KE36A	1.5KE36CA
1.5KE39(C)A-G	37.05	40.95	1.0	33.3	1.0	27.83	53.9	1.5KE39A	1.5KE39CA
1.5KE43(C)A-G	40.85	45.15	1.0	36.8	1.0	25.30	59.3	1.5KE43A	1.5KE43CA
1.5KE47(C)A-G	44.65	49.35	1.0	40.2	1.0	23.15	64.8	1.5KE47A	1.5KE47CA
1.5KE51(C)A-G	48.45	53.55	1.0	43.6	1.0	21.40	70.1	1.5KE51A	1.5KE51CA
1.5KE56(C)A-G	53.20	58.80	1.0	47.8	1.0	19.48	77.0	1.5KE56A	1.5KE56CA
1.5KE62(C)A-G	58.90	65.10	1.0	53.0	1.0	17.65	85.0	1.5KE62A	1.5KE62CA
1.5KE68(C)A-G	64.60	71.40	1.0	58.1	1.0	16.30	92.0	1.5KE68A	1.5KE68CA
1.5KE75(C)A-G	71.25	78.75	1.0	64.1	1.0	14.56	103.0	1.5KE75A	1.5KE75CA
1.5KE82(C)A-G	77.90	86.10	1.0	70.1	1.0	13.27	113.0	1.5KE82A	1.5KE82CA
1.5KE91(C)A-G	86.45	95.55	1.0	77.8	1.0	12.00	125.0	1.5KE91A	1.5KE91CA
1.5KE100(C)A-G	95.00	105.00	1.0	85.5	1.0	10.95	137.0	1.5KE100A	1.5KE100CA
1.5KE110(C)A-G	104.50	115.50	1.0	94.0	1.0	9.87	152.0	1.5KE110A	1.5KE110CA
1.5KE120(C)A-G	114.00	126.00	1.0	102.0	1.0	9.09	165.0	1.5KE120A	1.5KE120CA
1.5KE130(C)A-G	123.50	136.50	1.0	111.0	1.0	8.38	179.0	1.5KE130A	1.5KE130CA

Company reserves the right to improve product design , functions and reliability without notice.

REV:C

# 1500W Transient Voltage Suppressor

## Electrical Characteristics (1.5KE6.8-G Thru. 1.5KE600-G)

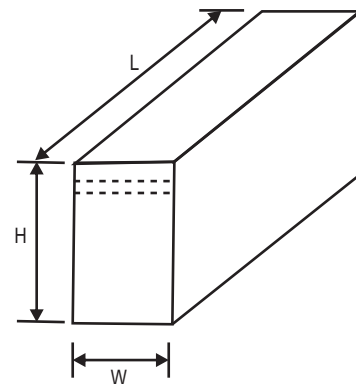
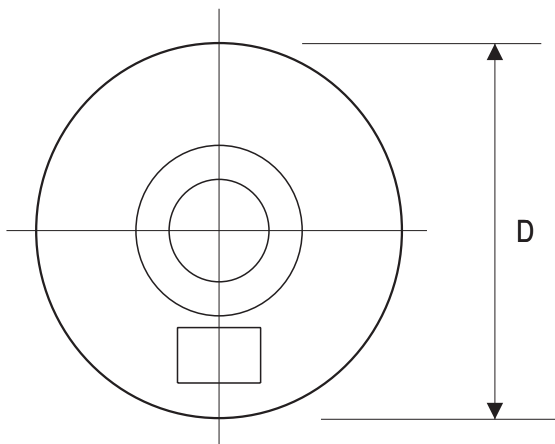
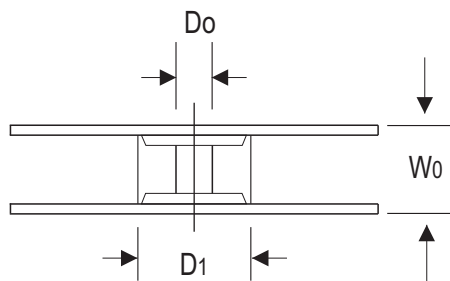
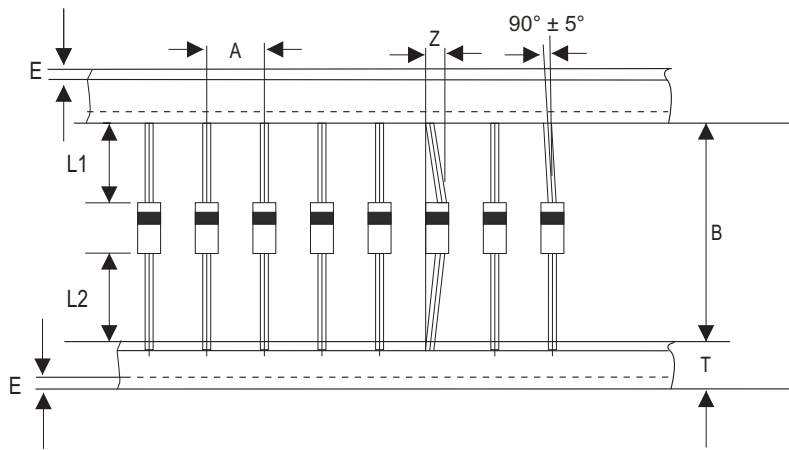
Part No.	Breakdown Voltage V <sub>BR</sub> (V) @ I <sub>T</sub>			Working Peak Reverse Voltage V <sub>RWM</sub> (V)	Maximum Reverse Leakage at V <sub>RWM</sub> I <sub>R</sub> (μA)	Maximum Reverse Surge Current I <sub>PP</sub> (A)	Maximum Clamping Voltage V <sub>c</sub> (V)	Marking Code	
	MIN.(V)	MAX.(V)	I <sub>T</sub> (mA)					UNI	BI
1.5KE150(C)A-G	142.50	157.50	1.0	128.0	1.0	7.25	207.0	1.5KE150A	1.5KE150CA
1.5KE160(C)A-G	152.00	168.00	1.0	136.0	1.0	6.85	219.0	1.5KE160A	1.5KE160CA
1.5KE170(C)A-G	161.50	178.50	1.0	145.0	1.0	6.41	234.0	1.5KE170A	1.5KE170CA
1.5KE180(C)A-G	171.00	189.00	1.0	154.0	1.0	6.10	246.0	1.5KE180A	1.5KE180CA
1.5KE200(C)A-G	190.00	210.00	1.0	171.0	1.0	5.47	274.0	1.5KE200A	1.5KE200CA
1.5KE220(C)A-G	209.00	231.00	1.0	185.0	1.0	4.57	328.0	1.5KE220A	1.5KE220CA
1.5KE250(C)A-G	237.50	262.50	1.0	214.0	1.0	4.36	344.0	1.5KE250A	1.5KE250CA
1.5KE300(C)A-G	285.00	315.00	1.0	256.0	1.0	3.62	414.0	1.5KE300A	1.5KE300CA
1.5KE350(C)A-G	332.50	367.50	1.0	299.3	1.0	3.11	482.0	1.5KE350A	1.5KE350CA
1.5KE380(C)A-G	361.00	399.00	1.0	324.9	1.0	2.86	524.4	1.5KE380A	1.5KE380CA
1.5KE400(C)A-G	380.00	420.00	1.0	342.0	1.0	2.72	548.0	1.5KE400A	1.5KE400CA
1.5KE440(C)A-G	418.00	462.00	1.0	376.2	1.0	2.47	602.0	1.5KE440A	1.5KE440CA
1.5KE500(C)A-G	475.00	525.00	1.0	427.5	1.0	2.17	690.0	1.5KE500A	1.5KE500CA
1.5KE520(C)A-G	494.00	546.00	1.0	444.6	1.0	2.09	717.6	1.5KE520A	1.5KE520CA
1.5KE550(C)A-G	522.50	577.50	1.0	470.3	1.0	1.98	759.0	1.5KE550A	1.5KE550CA
1.5KE600(C)A-G	570.00	630.00	1.0	513.0	1.0	1.81	828.0	1.5KE600A	1.5KE600CA

- Notes: 1. Suffix A denotes 5% tolerance devices.  
 2. Add suffix C or CA after part number to specify bi-directional devices.  
 3. For bi-directional devices having V<sub>R</sub> of 10 volts and under, the I<sub>R</sub> limit is double.

Company reserves the right to improve product design , functions and reliability without notice.

REV:C

## Taping Specification For Axial Lead Diodes



DO-201	SYMBOL	A	B	Z	T	E	L1	L2
	(mm)	$10.00 \pm 0.50$	$52.00 \pm 0.50$	1.20 (max)	$6.00 \pm 0.40$	1.00 (max)	1.00 (max)	1.00 (max)
	(inch)	$0.394 \pm 0.020$	$2.047 \pm 0.020$	0.047 (max)	$0.236 \pm 0.016$	0.039 (max)	0.039 (max)	0.039 (max)

DO-201	SYMBOL	D1	D0	D	W0	L	W	H
	(mm)	$85.70 \pm 0.30$	$16.60 \pm 0.40$	330.00	$72.00 \pm 3.00$	260.00	75.00	145.00
	(inch)	$3.374 \pm 0.012$	$0.654 \pm 0.016$	13.000	$2.835 \pm 0.118$	10.236	2.953	5.709

Company reserves the right to improve product design, functions and reliability without notice.

REV:C

## Marking Code

Packaging	Code	Part Number
AMMO PACK	NA	1.5KEXXX(C)A-G
REEL PACK	T	1.5KEXXX(C)AT-G
BULK PACK	B	1.5KEXXX(C)AB-G

Note: (1) Suffix code after part number to specify packaging item.  
 (2) XXX on behalf of serial products.

## Standard Packaging

Case Type	REEL PACK	
	REEL ( pcs )	Reel Size (inch)
DO-201AD	1,200	13

Case Type	AMMO PACK	
	BOX ( pcs )	CARTON ( pcs )
DO-201AD	1,000	10,000

Case Type	BULK PACK	
	BOX ( pcs )	CARTON ( pcs )
DO-201AD	200	10,000

Company reserves the right to improve product design , functions and reliability without notice.

REV:C