



# CHENMKO ENTERPRISE CO.,LTD

**GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR**  
**VOLTAGE-6.8 TO 400 VOLTS**  
**1500 WATTS PEAK POWER 6.5 WATTS STEADY STATE**

**1.5KE  
 SERIES**

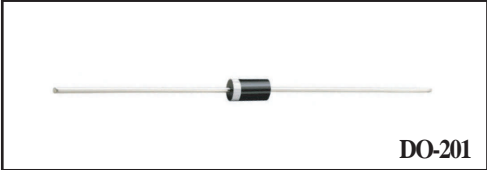
*Halogens free devices*

### FEATURES

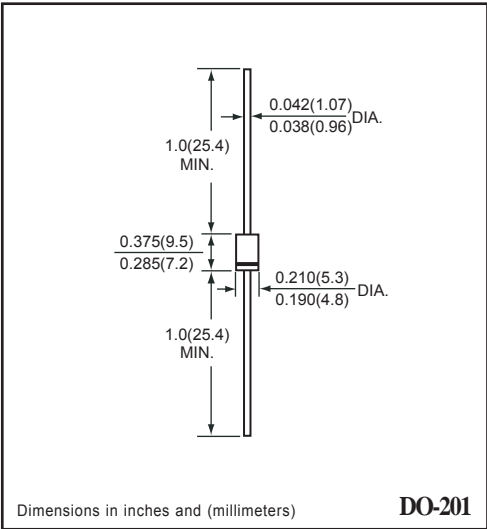
- \* Plastic package
- \* 1500W surge capability at 1ms
- \* Glass passivated chip junction in DO-201 Package
- \* Excellent clamping capability
- \* Low Zener Impedance
- \* Fast response time: typically less than 1.0ps from 0 volts to BV min.
- \* Typical IR less than 1 uA above 10V
- \* High temperature soldering guaranteed: 300 degree C/10seconds/.375"(9.5mm) lead length/51 bs., (2.3k) tension

### MECHANICAL DATA

**Case:** JEDEC DO-201 molded plastic  
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.045 ounce, 1.2 grams



DO-201



DO-201

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.  
 Single phase, half wave, 60 Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

### DEVICES FOR BIDIRECTIONAL APPLICATIONS

For Bidirectional use C or CA Suffix for types 1.5KE6.8 thru types 1.5KE400  
 Electrical characteristics apply in both directions.

### MAXIMUM RATINGS ( At TA = 25°C unless otherwise noted )

RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation at TA = 25°C, Tp = 1ms ( Note1 )	PPK	Minimum 1500	Watts
Steady State Power Dissipation at TL = 75°C Lead Lengths .375" (9.5mm)	PD	6.5	Watts
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load ( Note 2 )	IFSM	200	Amps
Operating and Storage Temperature Range	TJ, TSTG	-65 to +175	°C

NOTES : 1. Non-repetitive current pulse, per Fig. 3 and derated above TA = 25°C per Fig. 2.  
 2. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.

PRODUCT NO.	Breakdown Voltage			Working Peak Reverse Voltage	Maximum Reverse Leakage at Vrwm	Maximum Reverse Current ( NOTE 2 )	Maximum Reverse Voltage at Irsm ( clamping )	Maximum Temperature Coefficient of Vbr
	VBR Volts ( NOTE 1 )		@ IT ( mA )					
	MIN.	MAX.		Vrwm ( V )	Ir ( uA )	Irsm ( A )	Vrsm ( V )	( %C )
1.5KE6.8GP	6.12	7.48	10	5.50	1000	139	10.8	0.057
1.5KE6.8AGP	6.45	7.14	10	5.80	1000	143	10.5	0.057
1.5KE7.5GP	6.75	8.25	10	6.05	500	128	11.7	0.061
1.5KE7.5AGP	7.13	7.88	10	6.40	500	132	11.3	0.061
1.5KE8.2GP	7.38	9.02	10	6.63	200	120	12.5	0.065
1.5KE8.2AGP	7.79	8.61	10	7.02	200	124	12.1	0.065
1.5KE9.1GP	8.19	10.0	1.0	7.37	50	109	13.8	0.068
1.5KE9.1AGP	8.65	9.55	1.0	7.78	50	112	13.4	0.068
1.5KE10GP	9.0	11.0	1.0	8.10	10	100	15.0	0.073
1.5KE10AGP	9.5	10.5	1.0	8.55	10	103	14.5	0.073
1.5KE11GP	9.9	12.1	1.0	8.92	5.0	93.0	16.2	0.075
1.5KE11AGP	10.5	11.6	1.0	9.40	5.0	96.0	15.6	0.075
1.5KE12GP	10.8	13.2	1.0	9.72	5.0	87.0	17.3	0.078
1.5KE12AGP	11.4	12.6	1.0	10.2	5.0	90.0	16.7	0.078
1.5KE13GP	11.7	14.3	1.0	10.5	5.0	79.0	19.0	0.081
1.5KE13AGP	12.4	13.7	1.0	11.1	5.0	82.0	18.2	0.081
1.5KE15GP	13.5	16.5	1.0	12.1	5.0	68.0	22.0	0.084
1.5KE15AGP	14.3	15.8	1.0	12.8	5.0	71.0	21.2	0.084
1.5KE16GP	14.4	17.6	1.0	12.9	5.0	64.0	23.5	0.086
1.5KE16AGP	15.2	16.8	1.0	13.6	5.0	67.0	22.5	0.086
1.5KE18GP	16.2	19.8	1.0	14.5	5.0	56.5	26.5	0.088
1.5KE18AGP	17.1	18.9	1.0	15.3	5.0	59.5	25.2	0.088
1.5KE20GP	18.0	22.0	1.0	16.2	5.0	51.5	29.1	0.090
1.5KE20AGP	19.0	21.0	1.0	17.1	5.0	54.0	27.7	0.090
1.5KE22GP	19.8	24.2	1.0	17.8	5.0	47.0	31.9	0.092
1.5KE22AGP	20.9	23.1	1.0	18.8	5.0	49.0	30.6	0.092
1.5KE24GP	21.6	26.4	1.0	19.4	5.0	43.0	34.7	0.094
1.5KE24AGP	22.8	25.2	1.0	20.5	5.0	45.0	33.2	0.094
1.5KE27GP	24.3	29.7	1.0	21.8	5.0	38.5	39.1	0.096
1.5KE27AGP	25.7	28.4	1.0	23.1	5.0	40.0	37.5	0.096
1.5KE30GP	27.0	33.0	1.0	24.3	5.0	34.5	43.5	0.097
1.5KE30AGP	28.5	31.5	1.0	25.6	5.0	36.0	41.4	0.097
1.5KE33GP	29.7	36.3	1.0	26.8	5.0	31.5	47.7	0.098
1.5KE33AGP	31.4	34.7	1.0	28.2	5.0	33.0	45.7	0.098
1.5KE36GP	32.4	39.6	1.0	29.1	5.0	29.0	52.0	0.099
1.5KE36AGP	34.2	37.8	1.0	30.8	5.0	30.0	49.9	0.099
1.5KE39GP	35.1	42.9	1.0	31.6	5.0	26.5	56.4	0.100
1.5KE39AGP	37.1	41.0	1.0	33.3	5.0	28.0	53.9	0.100
1.5KE43GP	38.7	47.3	1.0	34.8	5.0	24.0	61.9	0.101
1.5KE43AGP	40.9	45.2	1.0	36.8	5.0	25.3	59.3	0.101
1.5KE47GP	42.3	51.7	1.0	38.1	5.0	22.2	67.8	0.101
1.5KE47AGP	44.7	49.4	1.0	40.2	5.0	23.2	64.8	0.101
1.5KE51GP	45.9	56.1	1.0	41.3	5.0	20.4	73.5	0.102
1.5KE51AGP	48.5	53.6	1.0	43.6	5.0	21.4	70.1	0.102
1.5KE56GP	50.4	61.6	1.0	45.4	5.0	18.6	80.5	0.103

PRODUCT NO.	Breakdown Voltage			Working Peak Reverse Voltage	Maximum Reverse Leakage at Vrwm	Maximum Reverse Current ( NOTE 2 )	Maximum Reverse Voltage at Irsm ( clamping )	Maximum Temperature Coefficient of Vbr
	VBR Volts ( NOTE 1 )		@ IT ( mA )					
	MIN.	MAX.		Vrwm ( V )	Ir ( uA )	Irsm ( A )	Vrsm ( V )	( %C )
1.5KE56AGP	53.2	58.8	1.0	47.8	5.0	19.5	77.0	0.103
1.5KE62GP	55.8	68.2	1.0	50.2	5.0	16.9	89.0	0.104
1.5KE62AGP	58.9	65.1	1.0	53.0	5.0	17.7	85.0	0.104
1.5KE68GP	61.2	74.8	1.0	55.1	5.0	15.3	98.0	0.104
1.5KE68AGP	64.6	71.4	1.0	58.0	5.0	16.3	92.0	0.104
1.5KE75GP	67.5	82.5	1.0	60.7	5.0	13.9	108	0.105
1.5KE75AGP	71.3	78.8	1.0	64.1	5.0	14.6	103	0.105
1.5KE82GP	73.8	90.2	1.0	66.4	5.0	12.7	118	0.105
1.5KE82AGP	77.9	86.1	1.0	70.1	5.0	13.3	113	0.105
1.5KE91GP	81.9	100	1.0	73.7	5.0	11.4	131	0.106
1.5KE91AGP	86.5	95.5	1.0	77.8	5.0	12.0	125	0.106
1.5KE100GP	90.0	110	1.0	81.0	5.0	10.4	144	0.106
1.5KE100AGP	95.0	105	1.0	85.5	5.0	11.0	137	0.106
1.5KE110GP	99.0	121	1.0	89.2	5.0	9.5	158	0.107
1.5KE110AGP	105	116	1.0	94.0	5.0	9.9	152	0.107
1.5KE120GP	108	132	1.0	97.2	5.0	8.7	173	0.107
1.5KE120AGP	114	126	1.0	102	5.0	9.1	165	0.107
1.5KE130GP	117	143	1.0	105	5.0	8.0	187	0.107
1.5KE130AGP	124	137	1.0	111	5.0	8.4	179	0.107
1.5KE150GP	135	165	1.0	121	5.0	7.0	215	0.108
1.5KE150AGP	143	158	1.0	128	5.0	7.2	207	0.108
1.5KE160GP	144	176	1.0	130	5.0	6.5	230	0.108
1.5KE160AGP	152	168	1.0	136	5.0	6.8	219	0.108
1.5KE170GP	153	187	1.0	138	5.0	6.2	244	0.108
1.5KE170AGP	162	179	1.0	145	5.0	6.4	234	0.108
1.5KE180GP	162	198	1.0	146	5.0	5.8	258	0.108
1.5KE180AGP	171	189	1.0	154	5.0	6.1	246	0.108
1.5KE200GP	180	220	1.0	162	5.0	5.2	287	0.108
1.5KE200AGP	190	210	1.0	171	5.0	5.5	274	0.108
1.5KE220GP	198	242	1.0	175	5.0	4.3	344	0.108
1.5KE220AGP	209	231	1.0	185	5.0	4.6	328	0.108
1.5KE250GP	225	275	1.0	202	5.0	5.0	360	0.110
1.5KE250AGP	237	263	1.0	214	5.0	5.0	344	0.110
1.5KE300GP	270	330	1.0	243	5.0	5.0	430	0.110
1.5KE300AGP	285	315	1.0	256	5.0	5.0	414	0.110
1.5KE350GP	315	385	1.0	284	5.0	4.0	504	0.110
1.5KE350AGP	332	368	1.0	300	5.0	4.0	482	0.110
1.5KE400GP	360	440	1.0	324	5.0	4.0	574	0.110
1.5KE400AGP	380	420	1.0	342	5.0	4.0	548	0.110

- NOTES : 1. Vbr measured after IT applied for 300 us. IT = Square Wave Pulse or equivalent.  
2. Surge Current Waveform per Figure 3 and Derated per Figure 2.  
3. Vf = 3.5 V max. at If= 100 A ( 1.5KE6.8 thru 1.5KE91A )  
Vf = 5.0 V max. at If = 100 A ( 1.5KE100 thru 1.5KE400A ) on 1/2 Square or equivalent Sine Wave.  
PW = 8.3ms, Duty Cycle = 4 Pulses per minute maximum.  
4. For Bipolar types having VR of 10 Volts and under, the IR limit is doubled.

# RATING CHARACTERISTIC CURVES ( 1.5KE6.8GP ~ 1.5KE400AGP )

FIG. 1 - PULSE POWER RATING CURVE

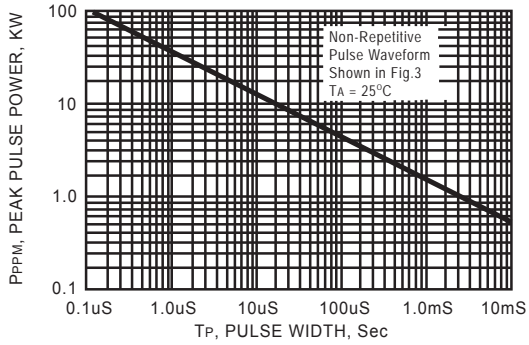


FIG. 2 - PULSE DERATING CURVE

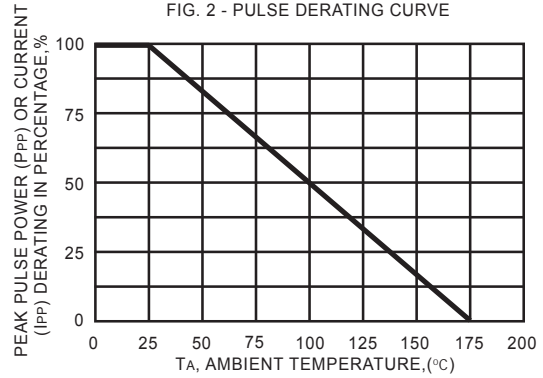


FIG. 3 - PULSE WAVEFORM

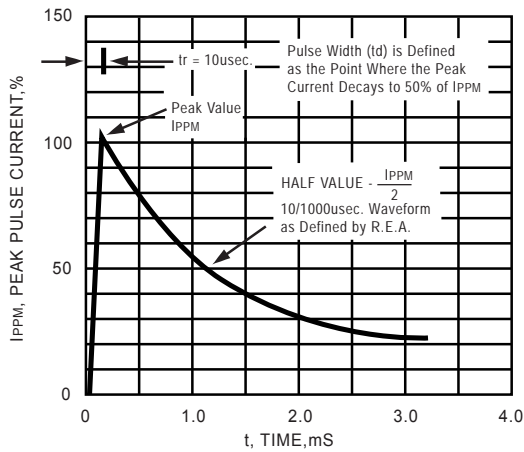


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

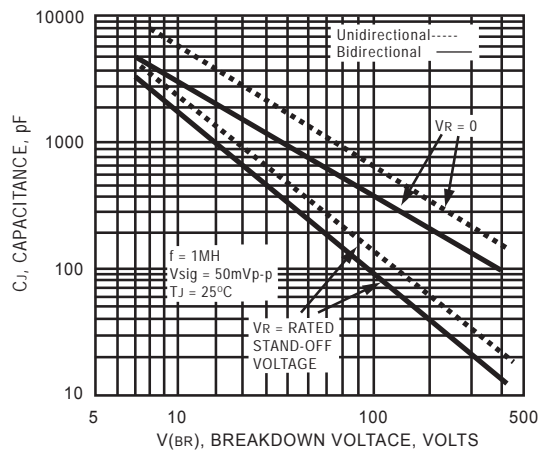


FIG. 5 - STEADY STATE POWER DERATING CURVE

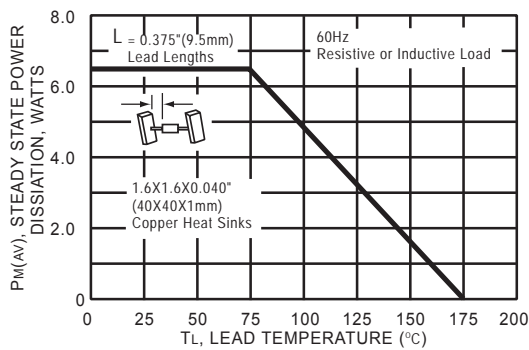
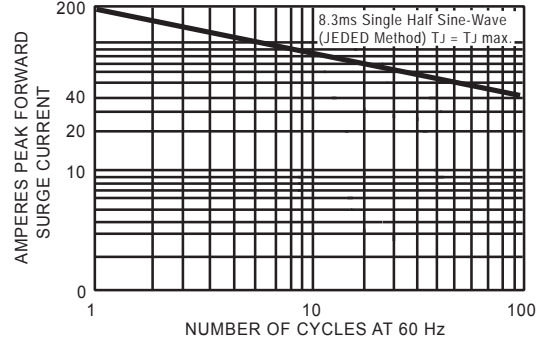


FIG. 6 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL



# RATING CHARACTERISTIC CURVES (1.5KE6.8GP ~ 1.5KE400AGP)

