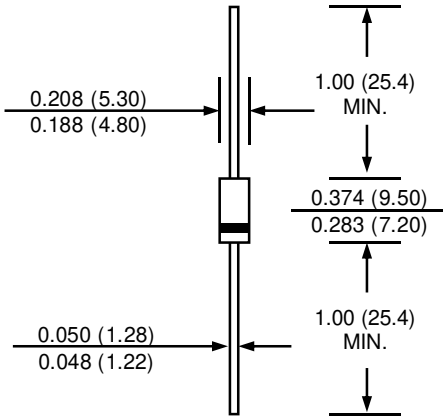
www.eicsemi.com

1.5KE6.8CL SERIES

BI-DIRECTIONAL TRANSIENT VOLTAGE SUPPRESSOR

V_{BR} : 6.8 - 440 Volts
P_{PK} : 1500 Watts

DO - 201AD



Dimensions in inches and (millimeters)

FEATURES :

* 1500W surge capability at 1ms
* Excellent clamping capability
* Low zener impedance
* Fast response time : typically less then 1.0 ps from 0 volt to $V_{BR(min.)}$
* Typical I_R less then 1µA above 10V
* Pb / RoHS Free

MECHANICAL DATA

* Case : DO-201AD Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
* Mounting position : Any
* Weight : 1.21 grams

DEVICES FOR UNIPOLAR APPLICATIONS

For uni-directional without "C"
Electrical characteristics apply in both directions

MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified

Rating	Symbol	Value	Unit
Peak Power Dissipation at Ta = 25 °C, Tp=1ms (Note1)	P_{PK}	Minimum 1500	W
Steady State Power Dissipation at T_L = 75 °C Lead Lengths 0.375", (9.5mm) (Note 2)	P_D	5.0	W
Operating and Storage Temperature Range	T_J, T_{STG}	- 65 to + 175	°C

Notes :

(1) Non-repetitive Current pulse, per Fig. 2 and derated above Ta = 25 °C per Fig. 1

(2) Mounted on Copper Leaf area of 0.79 in^2 (20mm^2).

ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

Type No.	Breakdown Voltage @ It (Note 1)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Current	Maximum Clamping Voltage @ I_{RSM}	Maximum Temperature Co-efficient of V_{BR}
	V_{BR} (V)		It	V_{RWM}	I_R	I_{RSM}	V_{RSM}	
	Min.	Max.	(mA)	(V)	(μA)	(A)	(V)	(% / °C)
1.5KE6.8CL	6.12	7.48	10	5.50	2000	139	10.8	0.057
1.5KE6.8CAL	6.45	7.14	10	5.80	2000	143	10.5	0.057
1.5KE7.5CL	6.75	8.25	10	6.05	1000	128	11.7	0.061
1.5KE7.5CAL	7.13	7.88	10	6.40	1000	132	11.3	0.061
1.5KE8.2CL	7.38	9.02	10	6.63	400	120	12.5	0.065
1.5KE8.2CAL	7.79	8.61	10	7.02	400	124	12.1	0.065
1.5KE9.1CL	8.19	10.0	1.0	7.37	100	109	13.8	0.068
1.5KE9.1CAL	8.65	9.55	1.0	7.78	100	112	13.4	0.068
1.5KE10CL	9.00	11.0	1.0	8.10	20	100	15.0	0.073
1.5KE10CAL	9.50	10.5	1.0	8.55	20	103	14.5	0.073
1.5KE11CL	9.90	12.1	1.0	8.92	10	93.0	16.2	0.075
1.5KE11CAL	10.5	11.6	1.0	9.40	10	96.0	15.6	0.075
1.5KE12CL	10.8	13.2	1.0	9.72	5.0	87.0	17.3	0.078
1.5KE12CAL	11.4	12.6	1.0	10.2	5.0	90.0	16.7	0.078
1.5KE13CL	11.7	14.3	1.0	10.5	5.0	79.0	19.0	0.081
1.5KE13CAL	12.4	13.7	1.0	11.1	5.0	82.0	18.2	0.081
1.5KE15CL	13.5	16.5	1.0	12.1	5.0	68.0	22.0	0.084
1.5KE15CAL	14.3	15.8	1.0	12.8	5.0	71.0	21.2	0.084
1.5KE16CL	14.4	17.6	1.0	12.9	5.0	64.0	23.5	0.086
1.5KE16CAL	15.2	16.8	1.0	13.6	5.0	67.0	22.5	0.086
1.5KE18CL	16.2	19.8	1.0	14.5	5.0	56.5	26.5	0.088
1.5KE18CAL	17.1	18.9	1.0	15.3	5.0	59.5	25.2	0.088
1.5KE20CL	18.0	22.0	1.0	16.2	5.0	51.5	29.1	0.090
1.5KE20CAL	19.0	21.0	1.0	17.1	5.0	54.0	27.7	0.090
1.5KE22CL	19.8	24.2	1.0	17.8	5.0	47.0	31.9	0.092
1.5KE22CAL	20.9	23.1	1.0	18.8	5.0	49.0	30.6	0.092
1.5KE24CL	21.6	26.4	1.0	19.4	5.0	43.0	34.7	0.094
1.5KE24CAL	22.8	25.2	1.0	20.5	5.0	45.0	33.2	0.094
1.5KE27CL	24.3	29.7	1.0	21.8	5.0	38.5	39.1	0.096
1.5KE27CAL	25.7	28.4	1.0	23.1	5.0	40.0	37.5	0.096
1.5KE30CL	27.0	33.0	1.0	24.3	5.0	34.5	43.5	0.097
1.5KE30CAL	28.5	31.5	1.0	25.6	5.0	36.0	41.4	0.097
1.5KE33CL	29.7	36.3	1.0	26.8	5.0	31.5	47.7	0.098
1.5KE33CAL	31.4	34.7	1.0	28.2	5.0	33.0	45.7	0.098
1.5KE36CL	32.4	39.6	1.0	29.1	5.0	29.0	52.0	0.099
1.5KE36CAL	34.2	37.8	1.0	30.8	5.0	30.0	49.9	0.099
1.5KE39CL	35.1	42.9	1.0	31.6	5.0	26.5	56.4	0.100
1.5KE39CAL	37.1	41.0	1.0	33.3	5.0	28.0	53.9	0.100
1.5KE43CL	38.7	47.3	1.0	34.8	5.0	24.0	61.9	0.101
1.5KE43CAL	40.9	45.2	1.0	36.8	5.0	25.3	59.3	0.101
1.5KE47CL	42.3	51.7	1.0	38.1	5.0	22.2	67.8	0.101
1.5KE47CAL	44.7	49.4	1.0	40.2	5.0	23.2	64.8	0.101
1.5KE51CL	45.9	56.1	1.0	41.3	5.0	20.4	73.5	0.102
1.5KE51CAL	48.5	53.6	1.0	43.6	5.0	21.4	70.1	0.102
1.5KE56CL	50.4	61.6	1.0	45.4	5.0	18.6	80.5	0.103
1.5KE56CAL	53.2	58.8	1.0	47.8	5.0	19.5	77.0	0.103

ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

Type No.	Breakdown Voltage @ It (Note 1)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Current	Maximum Clamping Voltage @ I_{RSM}	Maximum Temperature Co-efficient of V_{BR}
	V_{BR} (V)		It	V_{RWM}	I_R	I_{RSM}	V_{RSM}	
	Min.	Max.	(mA)	(V)	(μA)	(A)	(V)	(% / °C)
1.5KE62CL	55.8	68.2	1.0	50.2	5.0	16.9	89.0	0.104
1.5KE62CAL	58.9	65.1	1.0	53.0	5.0	17.7	85.0	0.104
1.5KE68CL	61.2	74.8	1.0	55.1	5.0	15.3	98.0	0.104
1.5KE68CAL	64.6	71.4	1.0	58.1	5.0	16.3	92.0	0.104
1.5KE75CL	67.5	82.5	1.0	60.7	5.0	13.9	108	0.105
1.5KE75CAL	71.3	78.8	1.0	64.1	5.0	14.6	103	0.105
1.5KE82CL	73.8	90.2	1.0	66.4	5.0	12.7	118	0.105
1.5KE82CAL	77.9	86.1	1.0	70.1	5.0	13.3	113	0.105
1.5KE91CL	81.9	100	1.0	73.7	5.0	11.4	131	0.106
1.5KE91CAL	86.5	95.5	1.0	77.8	5.0	12.0	125	0.106
1.5KE100CL	90.0	110	1.0	81.0	5.0	10.4	144	0.106
1.5KE100CAL	95.0	105	1.0	85.5	5.0	11.0	137	0.106
1.5KE110CL	99.0	121	1.0	89.2	5.0	9.5	158	0.107
1.5KE110CAL	105	116	1.0	94.0	5.0	9.9	152	0.107
1.5KE120CL	108	132	1.0	97.2	5.0	8.7	173	0.107
1.5KE120CAL	114	126	1.0	102	5.0	9.1	165	0.107
1.5KE130CL	117	143	1.0	105	5.0	8.0	187	0.107
1.5KE130CAL	124	137	1.0	111	5.0	8.4	179	0.107
1.5KE150CL	135	165	1.0	121	5.0	7.0	215	0.108
1.5KE150CAL	143	158	1.0	128	5.0	7.2	207	0.108
1.5KE160CL	144	176	1.0	130	5.0	6.5	230	0.108
1.5KE160CAL	152	168	1.0	136	5.0	6.8	219	0.108
1.5KE170CL	153	187	1.0	138	5.0	6.2	244	0.108
1.5KE170CAL	162	179	1.0	145	5.0	6.4	234	0.108
1.5KE180CL	162	198	1.0	146	5.0	5.8	258	0.108
1.5KE180CAL	171	189	1.0	154	5.0	6.1	246	0.108
1.5KE200CL	180	220	1.0	162	5.0	5.2	287	0.108
1.5KE200CAL	190	210	1.0	171	5.0	5.5	274	0.108
1.5KE220CL	198	242	1.0	175	5.0	4.3	344	0.108
1.5KE220CAL	209	231	1.0	185	5.0	4.6	328	0.108
1.5KE250CL	225	275	1.0	202	5.0	4.2	360	0.110
1.5KE250CAL	237	263	1.0	214	5.0	4.4	344	0.110
1.5KE300CL	270	330	1.0	243	5.0	3.5	430	0.110
1.5KE300CAL	285	315	1.0	256	5.0	3.6	414	0.110
1.5KE350CL	315	385	1.0	284	5.0	3.0	504	0.110
1.5KE350CAL	332	368	1.0	300	5.0	3.1	482	0.110
1.5KE400CL	360	440	1.0	324	5.0	2.6	574	0.110
1.5KE400CAL	380	420	1.0	342	5.0	2.7	548	0.110
1.5KE440CL	396	484	1.0	356	5.0	2.4	631	0.110
1.5KE440CAL	418	462	1.0	376	5.0	2.5	602	0.110

Notes:

(1) V_{BR} measured after It applied for 300 μs., It = square wave pulse or equivalent.

(2) "1.5" will be omitted in marking on the diode.

RATING AND CHARACTERISTIC CURVES (1.5KE6.8CL SERIES)

FIG.1 - PULSE DERATING CURVE

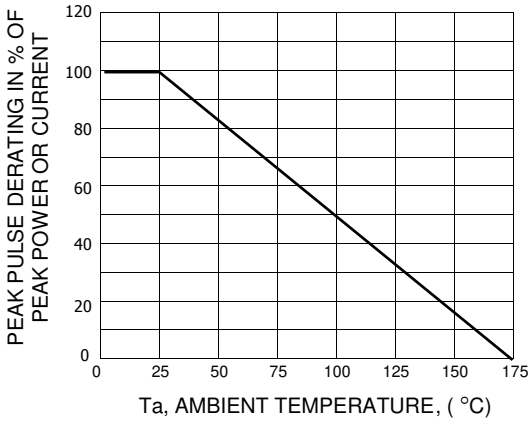


FIG.2 - PULSE WAVEFORM

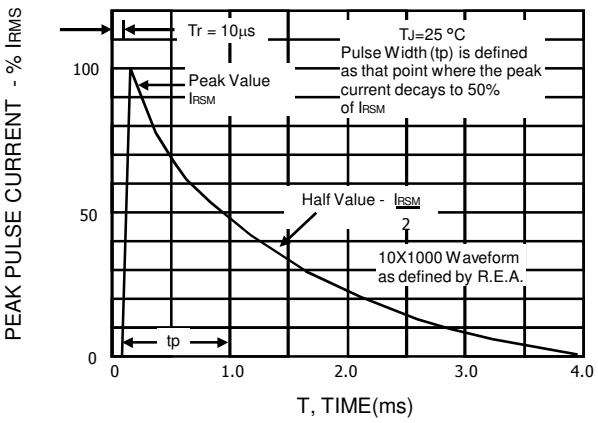


FIG.3 - STEADY STATE POWER DERATING

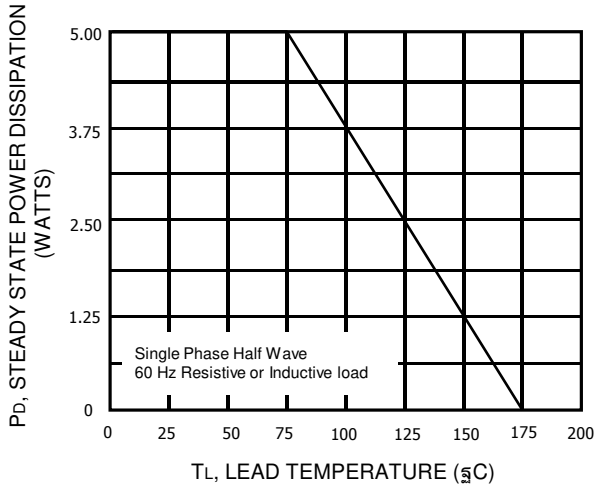


FIG.4 - PULSE RATING CURVE

