

1.5KCD SERIES

TRANSIENT VOLTAGE SUPPRESSOR

V_{RW} : 5.0 - 171 Volts

P_{PK} : 1500 Watts

FEATURES :

- * Glass passivated junction chip
- * 1500W surge capability at 1ms
- * Excellent clamping capability
- * Low clamping voltage
- * Fast response time : typically less than 1.0 ns from 0 volt to $V_{BR(min.)}$
- * Pb / RoHS Free

MECHANICAL DATA

- * Case : C3A
- * Terminals : Solderable per MIL-STD-202, Method 208 guaranteed
- * Polarity : Cathode to bigger size slug, For Anode to bigger size slug use "R" suffix.
- * Mounting position : Any
- * Weight : 0.11 gram

DEVICES FOR BIPOLAR APPLICATIONS

For Bi-directional use C or CA Suffix

Electrical characteristics apply in both directions

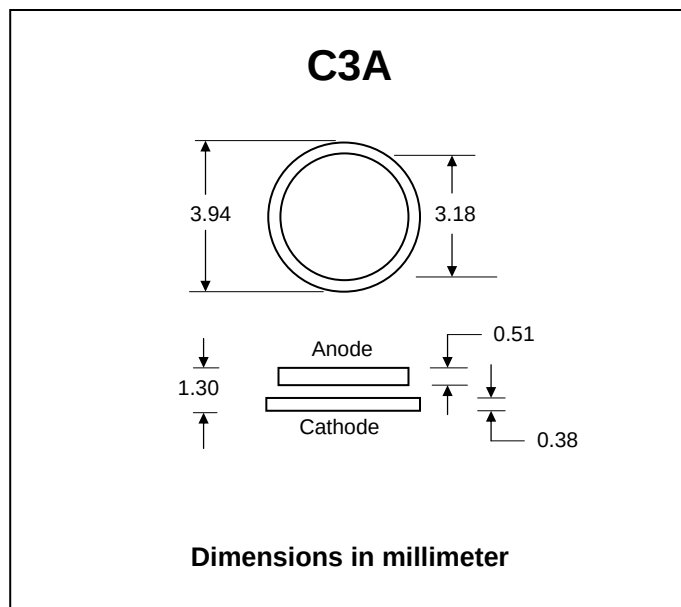
MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Power Dissipation at $T_a = 25\text{ °C}$, $T_p=1\text{ms}$ (Note1)	P_{PK}	Minimum 1500	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I_{FSM}	200	A
Operating and Storage Temperature Range	T_J, T_{STG}	- 65 to + 175	°C

Notes :

- (1) Non-repetitive Current pulse, per Fig. 5 and derated above $T_a = 25\text{ °C}$ per Fig. 1
- (3) 8.3 ms single half sine-wave, duty cycle = 4 pulses per minutes maximum.



ELECTRICAL CHARACTERISTICS (Rating at 25 °C ambient temperature unless otherwise specified)

Type Number	Breakdown Voltage @ I_t (Note 1)			Working Peak Reverse Voltage V_{RWM}	Maximum Reverse Leakage @ V_{RWM} I_R	Maximum Reverse Current I_{RSM}	Maximum Clamping Voltage @ I_{RSM} V_{RSM}	Maximum Temperature Co-efficient of V_{BR} (% / °C)
	V_{BR} (V)		I_t					
	Min.	Max.	(mA)					
1.5KCD6.8	6.12	7.48	10	5.50	1000	139	10.8	0.057
1.5KCD6.8A	6.45	7.14	10	5.80	1000	143	10.5	0.057
1.5KCD7.5	6.75	8.25	10	6.05	500	128	11.7	0.061
1.5KCD7.5A	7.13	7.88	10	6.40	500	132	11.3	0.061
1.5KCD8.2	7.38	9.02	10	6.63	200	120	12.5	0.065
1.5KCD8.2A	7.79	8.61	10	7.02	200	124	12.1	0.065
1.5KCD9.1	8.19	10.0	1.0	7.37	50	109	13.8	0.068
1.5KCD9.1A	8.65	9.55	1.0	7.78	50	112	13.4	0.068
1.5KCD10	9.00	11.0	1.0	8.10	10	100	15.0	0.073
1.5KCD10A	9.50	10.5	1.0	8.55	10	103	14.5	0.073
1.5KCD11	9.90	12.1	1.0	8.92	5.0	93.0	16.2	0.075
1.5KCD11A	10.5	11.6	1.0	9.40	5.0	96.0	15.6	0.075
1.5KCD12	10.8	13.2	1.0	9.72	5.0	87.0	17.3	0.078
1.5KCD12A	11.4	12.6	1.0	10.2	5.0	90.0	16.7	0.078
1.5KCD13	11.7	14.3	1.0	10.5	5.0	79.0	19.0	0.081
1.5KCD13A	12.4	13.7	1.0	11.1	5.0	82.0	18.2	0.081
1.5KCD15	13.5	16.5	1.0	12.1	1.0	68.0	22.0	0.084
1.5KCD15A	14.3	15.8	1.0	12.8	1.0	71.0	21.2	0.084
1.5KCD16	14.4	17.6	1.0	12.9	1.0	64.0	23.5	0.086
1.5KCD16A	15.2	16.8	1.0	13.6	1.0	67.0	22.5	0.086
1.5KCD18	16.2	19.8	1.0	14.5	1.0	56.5	26.5	0.088
1.5KCD18A	17.1	18.9	1.0	15.3	1.0	59.5	25.2	0.088
1.5KCD20	18.0	22.0	1.0	16.2	1.0	51.5	29.1	0.090
1.5KCD20A	19.0	21.0	1.0	17.1	1.0	54.0	27.7	0.090
1.5KCD22	19.8	24.2	1.0	17.8	1.0	47.0	31.9	0.092
1.5KCD22A	20.9	23.1	1.0	18.8	1.0	49.0	30.6	0.092
1.5KCD24	21.6	26.4	1.0	19.4	1.0	43.0	34.7	0.094
1.5KCD24A	22.8	25.2	1.0	20.5	1.0	45.0	33.2	0.094
1.5KCD27	24.3	29.7	1.0	21.8	1.0	38.5	39.1	0.096
1.5KCD27A	25.7	28.4	1.0	23.1	1.0	40.0	37.5	0.096
1.5KCD30	27.0	33.0	1.0	24.3	1.0	34.5	43.5	0.097
1.5KCD30A	28.5	31.5	1.0	25.6	1.0	36.0	41.4	0.097
1.5KCD33	29.7	36.3	1.0	26.8	1.0	31.5	47.7	0.098
1.5KCD33A	31.4	34.7	1.0	28.2	1.0	33.0	45.7	0.098
1.5KCD36	32.4	39.6	1.0	29.1	1.0	29.0	52.0	0.099
1.5KCD36A	34.2	37.8	1.0	30.8	1.0	30.0	49.9	0.099
1.5KCD39	35.1	42.9	1.0	31.6	1.0	26.5	56.4	0.100
1.5KCD39A	37.1	41.0	1.0	33.3	1.0	28.0	53.9	0.100
1.5KCD43	38.7	47.3	1.0	34.8	1.0	24.0	61.9	0.101
1.5KCD43A	40.9	45.2	1.0	36.8	1.0	25.3	59.3	0.101

ELECTRICAL CHARACTERISTICS (Rating at 25 °C ambient temperature unless otherwise specified)

Type Number	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)
1.5KCD47	42.3	51.7	1.0	38.1	1.0	22.2	67.8	0.101				
1.5KCD47A	44.7	49.4	1.0	40.2	1.0	23.2	64.8	0.101				
1.5KCD51	45.9	56.1	1.0	41.3	1.0	20.4	73.5	0.102				
1.5KCD51A	48.5	53.6	1.0	43.6	1.0	21.4	70.1	0.102				
1.5KCD56	50.4	61.6	1.0	45.4	1.0	18.6	80.5	0.103				
1.5KCD56A	53.2	58.8	1.0	47.8	1.0	19.5	77.0	0.103				
1.5KCD62	55.8	68.2	1.0	50.2	1.0	16.9	89.0	0.104				
1.5KCD62A	58.9	65.1	1.0	53.0	1.0	17.7	85.0	0.104				
1.5KCD68	61.2	74.8	1.0	55.1	1.0	15.3	98.0	0.104				
1.5KCD68A	64.6	71.4	1.0	58.1	1.0	16.3	92.0	0.104				
1.5KCD75	67.5	82.5	1.0	60.7	1.0	13.9	108	0.105				
1.5KCD75A	71.3	78.8	1.0	64.1	1.0	14.6	103	0.105				
1.5KCD82	73.8	90.2	1.0	66.4	1.0	12.7	118	0.105				
1.5KCD82A	77.9	86.1	1.0	70.1	1.0	13.3	113	0.105				
1.5KCD91	81.9	100	1.0	73.7	1.0	11.4	131	0.106				
1.5KCD91A	86.5	95.5	1.0	77.8	1.0	12.0	125	0.106				
1.5KCD100	90.0	110	1.0	81.0	1.0	10.4	144	0.106				
1.5KCD100A	95.0	105	1.0	85.5	1.0	11.0	137	0.106				
1.5KCD110	99.0	121	1.0	89.2	1.0	9.5	158	0.107				
1.5KCD110A	105	116	1.0	94.0	1.0	9.9	152	0.107				
1.5KCD120	108	132	1.0	97.2	1.0	8.7	173	0.107				
1.5KCD120A	114	126	1.0	102	1.0	9.1	165	0.107				
1.5KCD130	117	143	1.0	105	1.0	8.0	187	0.107				
1.5KCD130A	124	137	1.0	111	1.0	8.4	179	0.107				
1.5KCD150	135	165	1.0	121	1.0	7.0	215	0.108				
1.5KCD150A	143	158	1.0	128	1.0	7.2	207	0.108				
1.5KCD160	144	176	1.0	130	1.0	6.5	230	0.108				
1.5KCD160A	152	168	1.0	136	1.0	6.8	219	0.108				
1.5KCD170	153	187	1.0	138	1.0	6.2	244	0.108				
1.5KCD170A	162	179	1.0	145	1.0	6.4	234	0.108				
1.5KCD180	162	198	1.0	146	1.0	5.8	258	0.108				
1.5KCD180A	171	189	1.0	154	1.0	6.1	246	0.108				
1.5KCD200	180	220	1.0	162	1.0	5.2	287	0.108				
1.5KCD200A	190	210	1.0	171	1.0	5.5	274	0.108				

Notes:

- (1) For bidirectional types having V_{WM} of 8 volts and under, the I_D leakage current is double.
- (2) $V_F = 3.5 V_{max.}$, $I_F = 100$ Amps.
 $P_W = 8.3$ ms, sine wave equals

RATING AND CHARACTERISTIC CURVES (1.5KCD SERIES)

FIG.1 - PULSE DERATING CURVE

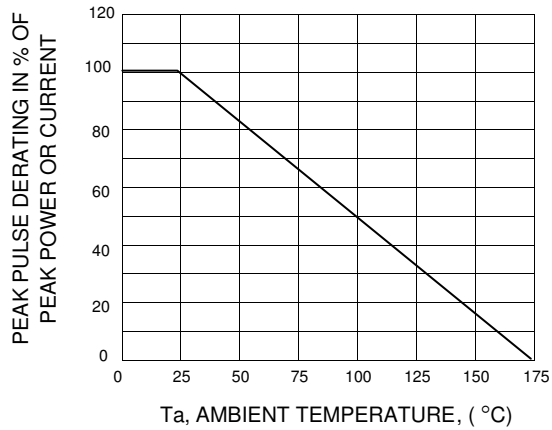


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

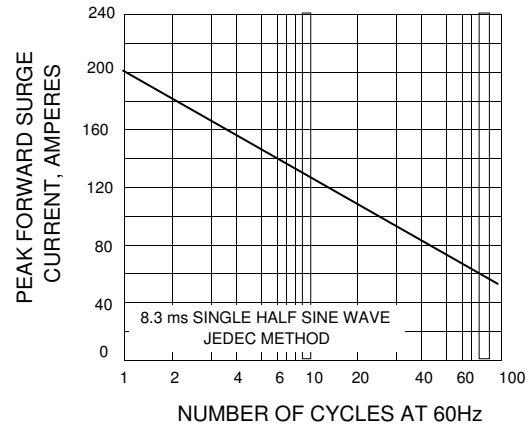


FIG. 6 - TYPICAL JUNCTION CAPACITANCE

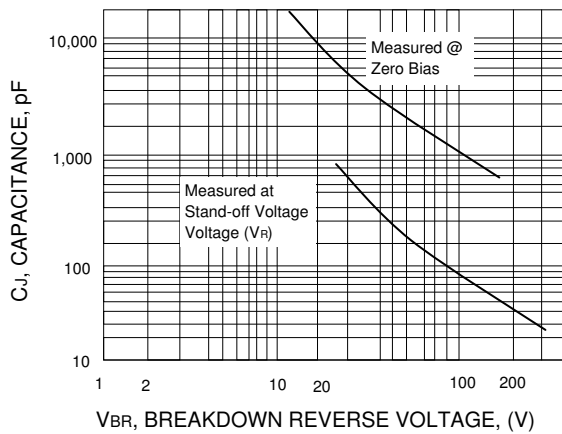


FIG.4 - PULSE RATING CURVE

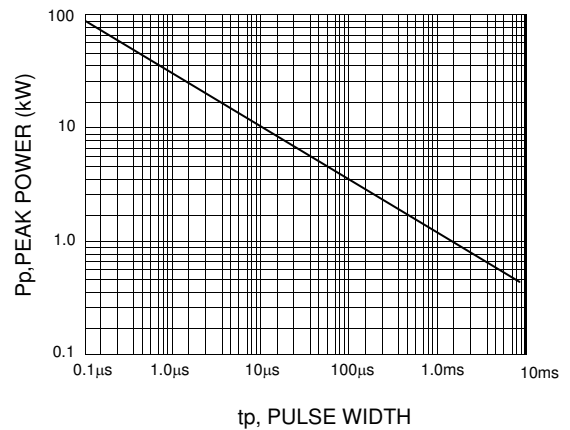


FIG.5 - PULSE WAVEFORM

