RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

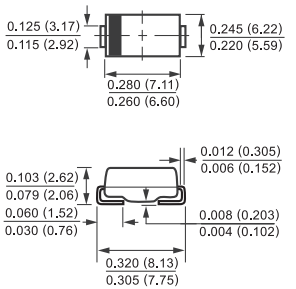
TVS
1.5FMCJ
SERIES

SURFACE MOUNT
TRANSIENT VOLTAGE SUPPRESSOR
1500 WATT PEAK POWER 5.0 WATT STEADY STATE

FEATURES

* Plastic package has underwriters laboratory
* Glass passivated chip construction
* 1500 watt surage capability at 1ms
* Excellent clamping capability
* Low zener impedance
* Fast response time

DO-214AB



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA suffix for types 1.5FMCJ6.8 thru 1.5FMCJ400

Electrical characteristics apply in both direction

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

RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation with a 10/1000uS (Note 1,2, Fig.1)	P_{PPM}	Minimum 1500	Watts
Peak Pulse Current with a 10/1000uS Waveform (Note 1, Fig.3)	I_{PPM}	SEE TABLE 1	Amps
Steady State Power Dissipation at T_L = 75°C (Note 2)	$P_{M(AV)}$	5.0	Watts
Peak Forward Surge Current, 8.3ms single half sine wave-superimmposed on rated load(JEDEC METHOD)(Note 2,3)	I_{FSM}	100	Amps
Maximum Instantaneous Forward Voltage at 50A for unidirectional only (Note 3,4)	V_F	SEE NOTES 4	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to + 175	°C

1998-8

NOTES : 1. Non-repetitive current pulse, per Fig.3 and derated above T_A = 25°C per Fig.2.
2. Mounted on 0.31 X 0.31" (8.0 X 8.0mm) copper pads to each terminal.
3. Measured on 8.3mS single half sine-wave or equivaient square wave, duty cycle = 4 pulses per minute maximum.
4. V_F = 3.5V on 1.5FMCJ6.8 thru 1.5FMCJ90 diveces and VF = 5.0V on 1.5FMCJ100 thru 1.5FMCJ400 devices.

RATING AND CHARACTERISTIC CURVES (1.5FMCJ6.8 THRU 1.5FMCJ400CA)

FIG. 1 - PEAK PULSE POWER RATING CURVE

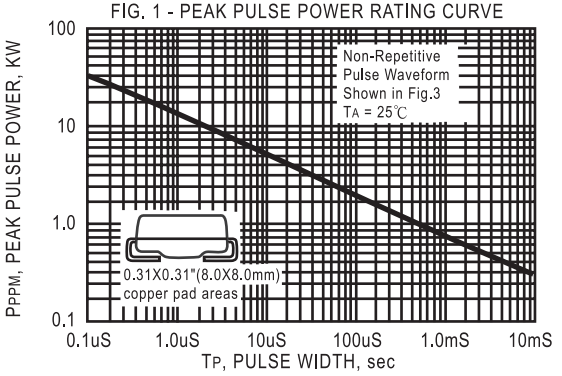


FIG. 2 - PULSE DERATING CURVE

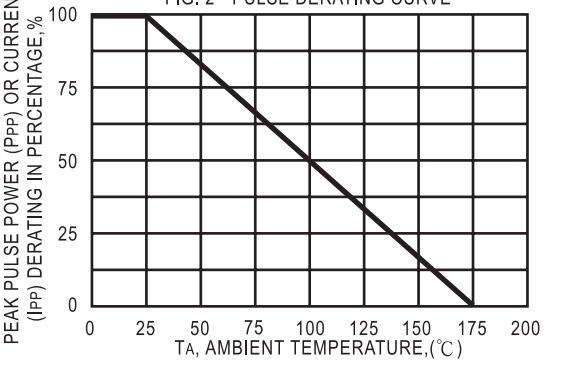


FIG. 3 - PULSE WAVEFORM

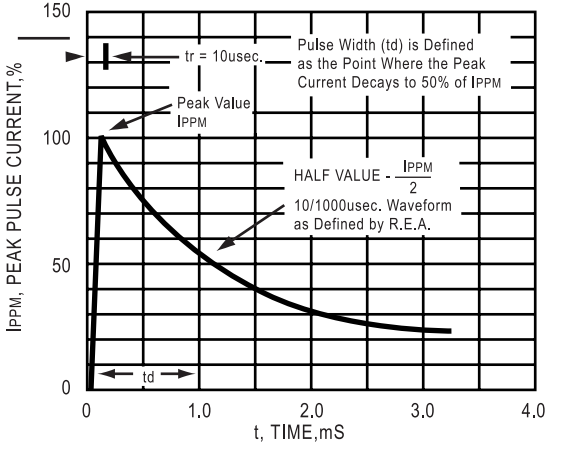


FIG. 4 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

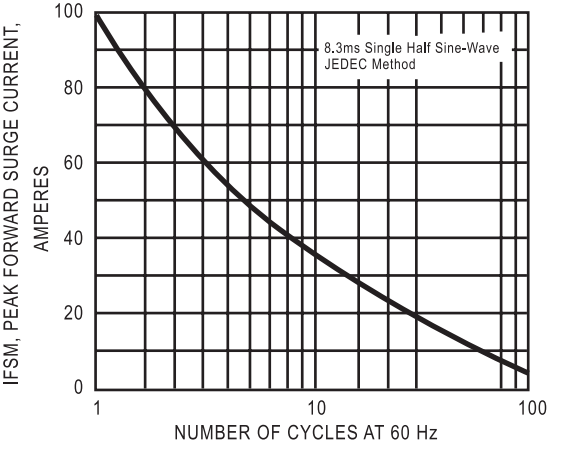


FIG. 5 -STEADY STATE POWER DERATING CURVE

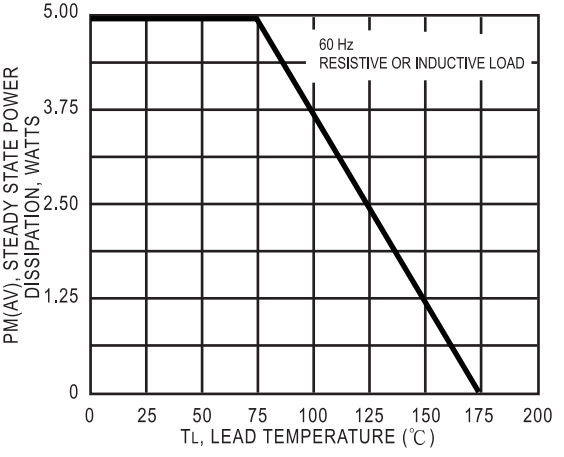
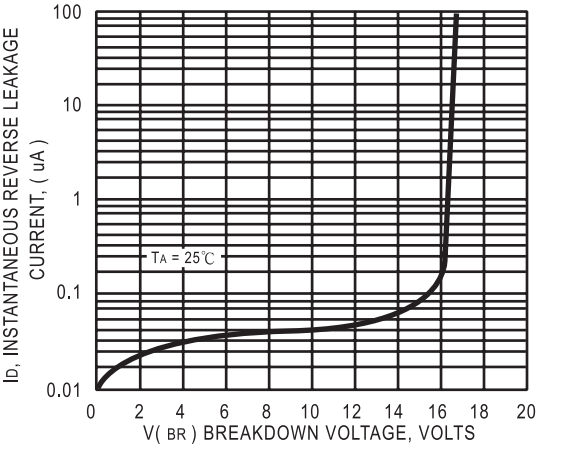


FIG. 6 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS



TRANSIENT VOLTAGE SUPPRESSORS

1500W SERIES TVS DIODES／ DO-214AB (CASE 4) 1500W

TYPE	Breakdown Voltage			Reverse Stand off Voltage V_{WM} (Volts)	Maximum Reverse Leakage at V_{WM} I_D(uA)	Maximum Peak Pulse Current I_{PPM} (Amps)	Maximum Clamping Voltage at I_{PPM} V_C (Volts)
	V_{BR} (Volts)		@I_T				
	MIN.	MAX.	(mA)				
1.5FMCJ6.8	6.12	7.48	10	5.50	1000	145	10.8
1.5FMCJ6.8A	6.45	7.14	10	5.80	1000	150	10.5
1.5FMCJ7.5	6.75	8.25	10	6.05	500	134	11.7
1.5FMCJ7.5A	7.13	7.88	10	6.40	500	139	11.3
1.5FMCJ8.2	7.38	9.02	10	6.63	200	126	12.5
1.5FMCJ8.2A	7.79	8.61	10	7.02	200	130	12.1
1.5FMCJ9.1	8.19	10.0	1.0	7.37	50	114	13.8
1.5FMCJ9.1A	8.69	9.55	1.0	7.78	50	117	13.4
1.5FMCJ10	9.00	11.0	1.0	8.10	10	105	15.0
1.5FMCJ10A	9.50	10.5	1.0	8.55	10	108	14.5
1.5FMCJ11	9.90	12.1	1.0	8.92	5.0	97	16.2
1.5FMCJ11A	10.5	11.6	1.0	9.40	5.0	100	15.6
1.5FMCJ12	10.8	13.2	1.0	9.72	5.0	91	17.3
1.5FMCJ12A	11.4	12.6	1.0	10.2	5.0	94	16.7
1.5FMCJ13	11.7	14.3	1.0	10.5	5.0	82	19.0
1.5FMCJ13A	12.4	13.7	1.0	11.1	5.0	86	18.2
1.5FMCJ15	13.5	16.5	1.0	12.1	5.0	71	22.0
1.5FMCJ15A	14.3	15.8	1.0	12.8	5.0	74	21.2
1.5FMCJ16	14.4	17.6	1.0	12.9	5.0	67	23.5
1.5FMCJ16A	15.2	16.8	1.0	13.6	5.0	70	22.5
1.5FMCJ18	16.2	19.8	1.0	14.5	5.0	59	26.5
1.5FMCJ18A	17.1	18.9	1.0	15.3	5.0	60	25.2
1.5FMCJ20	18.0	22.0	1.0	16.2	5.0	54	29.1
1.5FMCJ20A	19.0	21.0	1.0	17.1	5.0	56	27.7
1.5FMCJ22	19.8	24.2	1.0	17.8	5.0	49	31.9
1.5FMCJ22A	20.9	23.1	1.0	18.8	5.0	51	30.6
1.5FMCJ24	21.6	26.4	1.0	19.4	5.0	45	34.7
1.5FMCJ24A	22.8	25.2	1.0	20.5	5.0	47	33.2
1.5FMCJ27	24.3	29.7	1.0	21.8	5.0	40	39.1
1.5FMCJ27A	25.7	28.4	1.0	23.1	5.0	42	37.5
1.5FMCJ30	27.0	33.0	1.0	24.3	5.0	36	43.5
1.5FMCJ30A	28.5	31.5	1.0	25.6	5.0	38	41.4
1.5FMCJ33	29.7	36.3	1.0	26.8	5.0	33	47.7
1.5FMCJ33A	31.4	34.7	1.0	28.2	5.0	34	45.7
1.5FMCJ36	32.4	39.6	1.0	29.1	5.0	30	52.0
1.5FMCJ36A	34.2	37.8	1.0	30.8	5.0	31	49.9
1.5FMCJ39	35.1	42.9	1.0	31.6	5.0	27	56.4
1.5FMCJ39A	37.1	41.0	1.0	33.3	5.0	29	53.9
1.5FMCJ43	38.7	47.3	1.0	34.8	5.0	25	61.9
1.5FMCJ43A	40.9	45.2	1.0	36.8	5.0	26	59.3
1.5FMCJ47	42.3	51.7	1.0	38.1	5.0	23	67.8
1.5FMCJ47A	44.7	49.4	1.0	40.2	5.0	24	64.8
1.5FMCJ51	45.9	56.1	1.0	41.3	5.0	21	73.5
1.5FMCJ51A	48.5	53.6	1.0	43.6	5.0	22	70.1
1.5FMCJ56	50.4	61.6	1.0	45.4	5.0	19	80.5
1.5FMCJ56A	53.2	58.8	1.0	47.8	5.0	20	77.0

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TYPE	Breakdown Voltage			Reverse Stand off Voltage V_{WM} (Volts)	Maximum Reverse Leakage at V_{WM} I_D(uA)	Maximum Peak Pulse Current I_{PPM} (Amps)	Maximum Clamping Voltage at I_{PPM} V_C (Volts)
	V_{BR} (Volts)		@I_T				
	MIN.	MAX.	(mA)				
1.5FMCJ62	55.8	68.2	1.0	50.2	5.0	17	89.0
1.5FMCJ62A	58.9	65.1	1.0	53.0	5.0	18	85.0
1.5FMCJ68	61.2	74.8	1.0	55.1	5.0	16	98.0
1.5FMCJ68A	64.6	71.4	1.0	58.1	5.0	17	92.0
1.5FMCJ75	67.5	82.5	1.0	60.7	5.0	14	109
1.5FMCJ75A	71.3	78.8	1.0	64.1	5.0	15	104
1.5FMCJ82	73.8	90.2	1.0	66.4	5.0	13	118
1.5FMCJ82A	77.9	86.1	1.0	70.1	5.0	13.9	113
1.5FMCJ91	81.9	100	1.0	73.7	5.0	12	131
1.5FMCJ91A	86.5	95.5	1.0	77.8	5.0	12.6	125
1.5FMCJ100	90.0	110	1.0	81.0	5.0	10.9	144
1.5FMCJ100A	95.0	105	1.0	85.5	5.0	11.4	137
1.5FMCJ110	99.0	121	1.0	89.2	5.0	9.9	158
1.5FMCJ110A	105	116	1.0	94.0	5.0	10.3	152
1.5FMCJ120	108	132	1.0	97.2	5.0	9.1	173
1.5FMCJ120A	114	126	1.0	102	5.0	9.5	165
1.5FMCJ130	117	143	1.0	105	5.0	8.4	187
1.5FMCJ130A	124	137	1.0	111	5.0	8.7	179
1.5FMCJ150	135	165	1.0	121	5.0	7.3	215
1.5FMCJ150A	143	158	1.0	128	5.0	7.6	207
1.5FMCJ160	144	176	1.0	130	5.0	6.8	230
1.5FMCJ160A	152	168	1.0	136	5.0	7.1	219
1.5FMCJ170	153	187	1.0	138	5.0	6.4	244
1.5FMCJ170A	162	179	1.0	145	5.0	6.7	234
1.5FMCJ180	162	198	1.0	146	5.0	6.1	258
1.5FMCJ180A	171	189	1.0	154	5.0	6.4	246
1.5FMCJ200	180	220	1.0	162	5.0	5.4	287
1.5FMCJ200A	190	210	1.0	171	5.0	5.7	274
1.5FMCJ220	198	242	1.0	175	5.0	4.5	344
1.5FMCJ220A	209	231	1.0	185	5.0	4.8	328
1.5FMCJ250	225	275	1.0	202	5.0	4.3	360
1.5FMCJ250A	237	263	1.0	214	5.0	4.5	344
1.5FMCJ300	270	330	1.0	243	5.0	3.6	430
1.5FMCJ300A	285	315	1.0	256	5.0	3.8	414
1.5FMCJ350	315	385	1.0	284	5.0	3.1	504
1.5FMCJ350A	332	368	1.0	300	5.0	3.2	482
1.5FMCJ400	360	440	1.0	324	5.0	2.7	574
1.5FMCJ400A	380	420	1.0	342	5.0	2.8	548

NOTES : 1. V_{BR} measured after I_T applied for 300ms. I_T = square pluse or equivalent.

2. For bidirectional use C or CA suffixs for all types (ex. 1.5FMCJ6.8C,1.5FMCJ400CA) electrical characteristics apply in both directions.

3. For bidirectional types having V_{WM} of 10 volts and less, the I_D limit is doubled.