RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

TVS
TFMAJ
SERIES

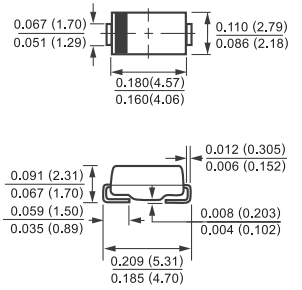
GPP TRANSIENT VOLTAGE SUPPRESSOR

400 WATT PEAK POWER 1.0 WATT STEADY STATE

FEATURES

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

DO-214AC



Dimensions in inches and (millimeters)

Ratings at 25 °C ambient temperature unless otherwise specified.

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 TFMAJ5.0 thru TFMAJ170

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 1,2,5 Fig.1)	P_{PPM}	Minimum 400	Watts
Peak Pulse Current with a 10/1000uS waveform (Note 1, Fig.2)	I_{PPM}	SEE TABLE 1	Amps
Steady State Power Dissipation (Note 3)	$P_{M(AV)}$	1.0	Watts
Peak Forward Surge Current per Fig.5 (Note 3)	I_{FSM}	40	Amps
Maximum Instantaneous Forward Voltage at 25A (Note 4)	V_F	3.5	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C

NOTES : 1. Non-repetitive current pulse, per Fig.3 and derated above T_A = 25°C per Fig.2.
2. Mounted on 0.2 X 0.2"(5.0 X 5.0mm) copper pad to each terminal.
3. Lead temperature at T_L = 25°C
4. Measured on 8.3mS single half sine-wave duty cycle = 4 pules per minute maximum.
5. Peak pulse power waveform is 10/1000uS.

RATING AND CHARACTERISTIC CURVES (TFMAJ5.0 THRU TFMAJ170CA)

FIG. 1 - PEAK PULSE POWER RATING CURVE

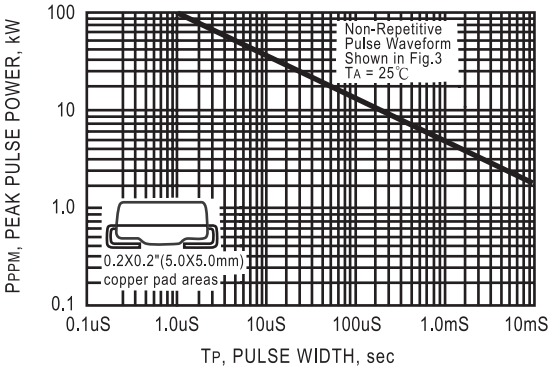


FIG. 2 - PULSE DERATING CURVE

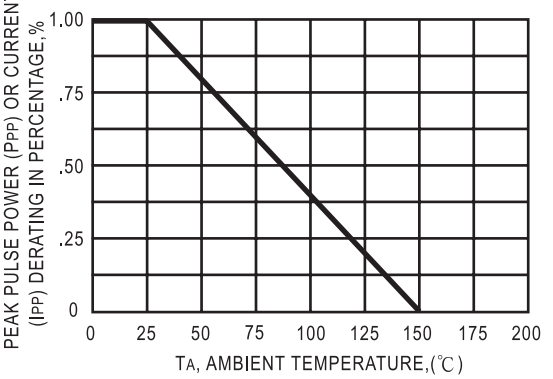


FIG. 3 - PULSE WAVEFORM

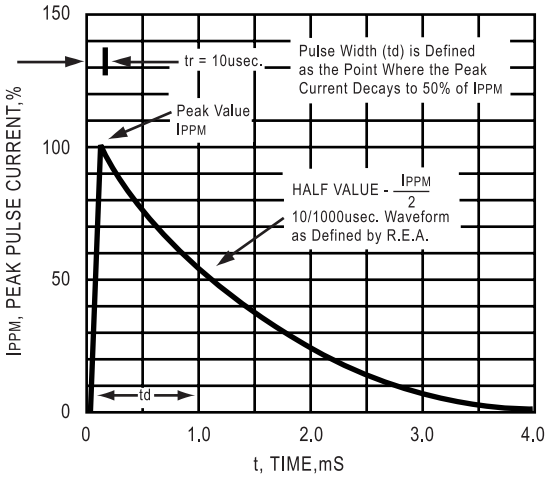


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

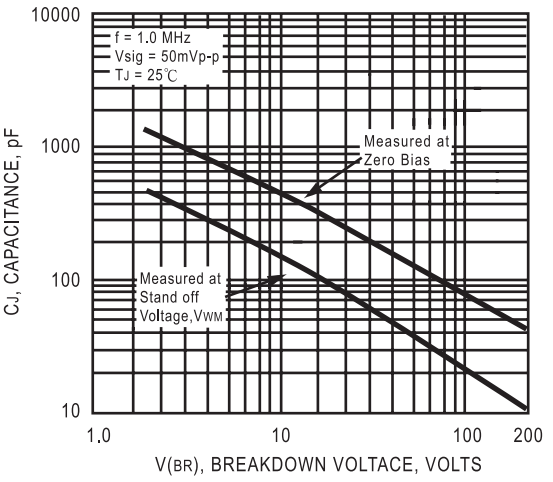
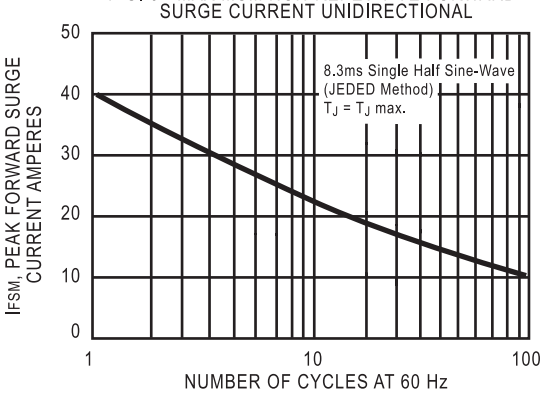


FIG. 6 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL



TRANSIENT VOLTAGE SUPPRESSORS

400W SERIES TVS DIODES／ DO-214AC (CASE 2) 400W

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)				
TFMAJ5.0	6.40	7.30	10	5.0	800.0	32.0	9.6
TFMAJ5.0A	6.40	7.00	10	5.0	800.0	34.0	9.2
TFMAJ6.0	6.67	8.15	10	6.0	800.0	27.6	11.4
TFMAJ6.0A	6.67	7.37	10	6.0	800.0	30.5	10.3
TFMAJ6.5	7.22	8.82	10	6.5	500.0	25.6	12.3
TFMAJ6.5A	7.22	7.98	10	6.5	500.0	28.0	11.2
TFMAJ7.0	7.78	9.51	10	7.0	200.0	23.6	13.3
TFMAJ7.0A	7.78	8.86	10	7.0	200.0	26.0	12.0
TFMAJ7.5	8.33	10.2	1.0	7.5	100.0	22.0	14.3
TFMAJ7.5A	8.33	9.21	1.0	7.5	100.0	24.4	12.9
TFMAJ8.0	8.89	10.9	1.0	8.0	50.0	21.0	15.0
TFMAJ8.0A	8.89	9.83	1.0	8.0	50.0	23.0	13.6
TFMAJ8.5	9.44	11.5	1.0	8.5	10.0	19.8	15.9
TFMAJ8.5A	9.44	10.4	1.0	8.5	10.0	21.8	14.4
TFMAJ9.0	10.0	12.2	1.0	9.0	5.0	18.6	16.9
TFMAJ9.0A	10.0	15.0	1.0	9.0	5.0	20.4	15.4
TFMAJ10	11.1	13.6	1.0	10.0	5.0	16.7	18.8
TFMAJ10A	11.1	12.3	1.0	10.0	5.0	18.5	17.0
TFMAJ11	12.2	14.9	1.0	11.0	5.0	15.6	20.1
TFMAJ11A	12.2	13.5	1.0	11.0	5.0	17.3	18.2
TFMAJ12	13.3	16.3	1.0	12.0	5.0	14.3	22.0
TFMAJ12A	13.3	14.7	1.0	12.0	5.0	15.8	19.9
TFMAJ13	14.4	17.6	1.0	13.0	5.0	13.0	23.8
TFMAJ13A	14.4	15.9	1.0	13.0	5.0	14.6	21.5
TFMAJ14	15.6	19.1	1.0	14.0	5.0	12.2	25.8
TFMAJ14A	15.6	17.2	1.0	14.0	5.0	13.5	23.2
TFMAJ15	16.7	20.4	1.0	15.0	5.0	11.7	26.9
TFMAJ15A	16.7	18.5	1.0	15.0	5.0	12.9	24.4
TFMAJ16	17.8	21.8	1.0	16.0	5.0	10.9	28.8
TFMAJ16A	17.8	19.7	1.0	16.0	5.0	12.0	26.0
TFMAJ17	18.9	23.1	1.0	17.0	5.0	10.3	30.5
TFMAJ17A	18.9	20.9	1.0	17.0	5.0	11.4	27.6
TFMAJ18	20.0	24.2	1.0	18.0	5.0	9.7	32.2
TFMAJ18A	20.0	22.1	1.0	18.0	5.0	10.7	29.2
TFMAJ20	22.2	27.1	1.0	20.0	5.0	8.7	35.8
TFMAJ20A	22.2	24.5	1.0	20.0	5.0	9.7	32.4
TFMAJ22	24.4	29.8	1.0	22.0	5.0	8.0	39.4
TFMAJ22A	24.4	26.9	1.0	22.0	5.0	8.8	35.5
TFMAJ24	26.7	32.6	1.0	24.0	5.0	7.3	43.0
TFMAJ24A	26.7	29.5	1.0	24.0	5.0	8.0	38.9
TFMAJ26	28.9	35.3	1.0	26.0	5.0	6.7	46.6
TFMAJ26A	28.9	31.9	1.0	26.0	5.0	7.4	42.1
TFMAJ28	31.1	38.0	1.0	28.0	5.0	6.3	50.1
TFMAJ28A	31.1	34.4	1.0	28.0	5.0	6.9	45.4
TFMAJ30	33.3	40.7	1.0	30.0	5.0	5.8	53.5
TFMAJ30A	33.3	36.8	1.0	30.0	5.0	6.5	48.4
TFMAJ33	36.7	44.9	1.0	33.0	5.0	5.3	59.0
TFMAJ33A	36.7	40.6	1.0	33.0	5.0	5.9	53.3
TFMAJ36	40.0	48.9	1.0	36.0	5.0	4.8	64.3
TFMAJ36A	40.0	44.2	1.0	36.0	5.0	5.4	58.1

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	V_{BR} (Volts)		@I_T				
	MIN.	MAX.	(mA)				
TFMAJ40	44.4	54.3	1.0	40	5.0	4.4	71.4
TFMAJ40A	44.4	49.1	1.0	40	5.0	4.8	64.5
TFMAJ43	47.8	58.4	1.0	43	5.0	4.1	76.7
TFMAJ43A	47.8	52.8	1.0	43	5.0	4.5	69.4
TFMAJ45	50.0	61.1	1.0	45	5.0	3.9	80.3
TFMAJ45A	50.0	55.3	1.0	45	5.0	4.3	72.7
TFMAJ48	53.3	65.1	1.0	48	5.0	3.6	85.5
TFMAJ48A	53.3	58.9	1.0	48	5.0	4.0	77.4
TFMAJ51	56.7	69.3	1.0	51	5.0	3.4	91.1
TFMAJ51A	56.7	62.7	1.0	51	5.0	3.8	82.4
TFMAJ54	60.0	73.3	1.0	54	5.0	3.2	96.3
TFMAJ54A	60.0	66.3	1.0	54	5.0	3.6	87.1
TFMAJ58	64.4	78.7	1.0	58	5.0	3.0	103
TFMAJ58A	64.4	71.2	1.0	58	5.0	3.3	93.6
TFMAJ60	66.7	81.5	1.0	60	5.0	2.9	107
TFMAJ60A	66.7	73.7	1.0	60	5.0	3.2	96.8
TFMAJ64	71.1	86.9	1.0	64	5.0	2.7	114
TFMAJ64A	71.1	78.6	1.0	64	5.0	3.0	103
TFMAJ70	77.8	95.1	1.0	70	5.0	2.5	125
TFMAJ70A	77.8	86.0	1.0	70	5.0	2.7	113
TFMAJ75	83.3	102	1.0	75	5.0	2.3	134
TFMAJ75A	83.3	92.1	1.0	75	5.0	2.6	121
TFMAJ78	86.7	106	1.0	78	5.0	2.2	139
TFMAJ78A	86.7	95.8	1.0	78	5.0	2.5	126
TFMAJ85	94.4	115	1.0	85	5.0	2.0	151
TFMAJ85A	94.4	104	1.0	85	5.0	2.2	137
TFMAJ90	100	122	1.0	90	5.0	1.9	160
TFMAJ90A	100	111	1.0	90	5.0	2.1	146
TFMAJ100	110	136	1.0	100	5.0	1.7	179
TFMAJ100A	110	123	1.0	100	5.0	1.9	162
TFMAJ110	122	149	1.0	110	5.0	1.6	196
TFMAJ110A	122	135	1.0	110	5.0	1.7	177
TFMAJ120	133	163	1.0	120	5.0	1.4	214
TFMAJ120A	133	147	1.0	120	5.0	1.6	193
TFMAJ130	144	176	1.0	130	5.0	1.3	231
TFMAJ130A	144	159	1.0	130	5.0	1.5	209
TFMAJ150	167	204	1.0	150	5.0	1.1	268
TFMAJ150A	167	185	1.0	150	5.0	1.3	243
TFMAJ160	178	218	1.0	160	5.0	1.0	287
TFMAJ160A	178	197	1.0	160	5.0	1.2	259
TFMAJ170	189	231	1.0	170	5.0	1.0	304
TFMAJ170A	189	209	1.0	170	5.0	1.1	275

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. TFMAJ5.0C,TFMAJ170CA) electrical characteristics apply in both directions.
3. For bidirectional types having V_{WM} of 10 volts and less, the I_D limit is doubled.