

## Glass Passivated Junction Transient Voltage Suppressor Rectifiers

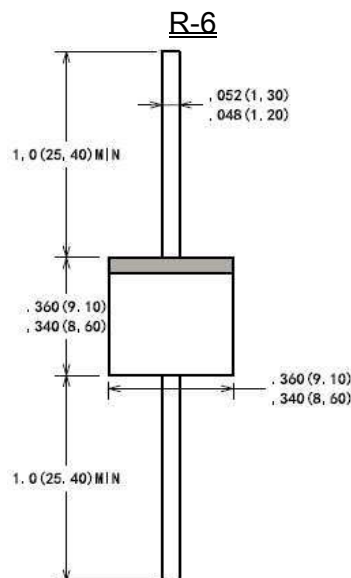
Reverse Voltage 20 ~ 300 V  
 20000 Watt Peak Pulse Power

### Features

- Glass passivated chip
- 20000 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

### Mechanical Data

- Case:R-6 Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any



Unit: inch (mm)

Maximum Ratings & Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	Value	Unit
Peak power dissipation with a 10/1000 us waveform <sup>(1)</sup>	$P_{PP}$	20000	W
Peak pulse current with a 10/1000 us waveform <sup>(1)</sup>	$I_{PP}$	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75\text{ }^\circ\text{C}$	$P_D$	8.0	W
Peak forward surge current, 8.3 ms single half sine wave unidirectional only <sup>(2)</sup>	$I_{FSM}$	400	A
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	8.0	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	40	$^\circ\text{C/W}$

Note:

1. Non-repetitive current pulse, per Fig. 4 and derated above  $T_J(\text{initial})=25^\circ\text{C}$  per Fig. 3
2. Measured of 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 per minute maximum

**Electrical Characteristics** ( $T_A=25\text{ }^\circ\text{C}$  unless otherwise noted )Table 1

Model		Breakdown Voltage $V_{BR}@I_T$		Test Current $I_T$	Reverse Stand-off Voltage $V_{WM}$	Maximum Reverse Leakage $I_R@V_{WM}$	Maximum Peak Pulse Current	Maximum Clamping Voltage $V_C@I_{PPM}$
		Min	Max					
Uni	Bi	(V)		(mA)	(V)	( $\mu$ A)	(A)	(V)
20KP20A	20KP20CA	22.34	24.57	50	20	5000	548.9	36.8
20KP24A	20KP24CA	26.81	29.49	50	24	5000	490.3	41.2
20KP26A	20KP26CA	29.04	31.94	50	26	2000	451.9	44.7
20KP28A	20KP28CA	31.28	34.41	50	28	1000	420.8	48.0
20KP30A	20KP30CA	33.51	36.86	5	30	250	392.2	51.5
20KP32A	20KP32CA	35.74	39.31	5	32	150	372.0	54.3
20KP34A	20KP34CA	38.00	41.80	5	34	50	351.3	57.5
20KP36A	20KP36CA	40.20	44.22	5	36	20	328.5	61.5
20KP40A	20KP40CA	44.70	49.17	5	40	15	297.9	67.8
20KP44A	20KP44CA	49.10	54.01	5	44	2	277.9	72.7
20KP48A	20KP48CA	53.60	58.96	5	48	2	254.4	79.4
20KP52A	20KP52CA	58.10	63.91	5	52	2	235.4	85.8
20KP56A	20KP56CA	62.60	68.86	5	56	2	218.1	92.6
20KP60A	20KP60CA	67.00	73.70	5	60	2	207.0	97.6
20KP64A	20KP64CA	71.50	78.65	5	64	2	194.2	104.0
20KP68A	20KP68CA	76.00	83.60	5	68	2	183.6	110.0
20KP72A	20KP72CA	80.40	88.44	5	72	2	174.1	116.0
20KP80A	20KP80CA	89.40	98.34	5	80	2	155.4	130.0
20KP88A	20KP88CA	98.30	108.13	5	88	2	142.3	142.0
20KP96A	20KP96CA	107.20	117.92	5	96.00	2	130.3	155.0
20KP104A	20KP104CA	116.20	127.82	5	104.00	2	120.2	168.0
20KP112A	20KP112CA	125.10	137.61	5	112.00	2	111.0	182.0
20KP120A	20KP120CA	134.00	147.40	5	120.00	2	104.1	194.0
20KP132A	20KP132CA	147.40	162.14	5	132.00	2	94.8	213.0
20KP144A	20KP144CA	160.80	176.88	5	144.00	2	87.1	232.0
20KP160A	20KP160CA	178.70	196.57	5	160.00	2	78.3	258.0
20KP172A	20KP172CA	192.10	211.31	5	172.00	2	72.9	277.0
20KP180A	20KP180CA	201.10	221.21	5	180.00	2	69.4	291.0
20KP192A	20KP192CA	214.50	235.95	5	192.00	2	65.4	309.0
20KP204A	20KP204CA	227.90	250.69	5	204.00	2	61.4	329.0
20KP216A	20KP216CA	241.30	265.43	5	216.00	2	58.0	348.0
20KP232A	20KP232CA	259.10	285.01	5	232.00	2	54.0	374.0

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		Min	Max					
Uni	Bi	(V)		(mA)	(V)	( $\mu\text{A}$ )	(A)	(V)
20KP240A	20KP240CA	268.10	294.91	5	240.00	2	52.2	387.0
20KP256A	20KP256CA	286.00	314.60	5	256.00	2	49.0	412.0
20KP280A	20KP280CA	312.80	344.08	5	280.00	2	44.8	451.0
20KP300A	20KP300CA	335.10	368.61	5	300.00	2	41.8	483.0

**Ratings and Characteristics Curves** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

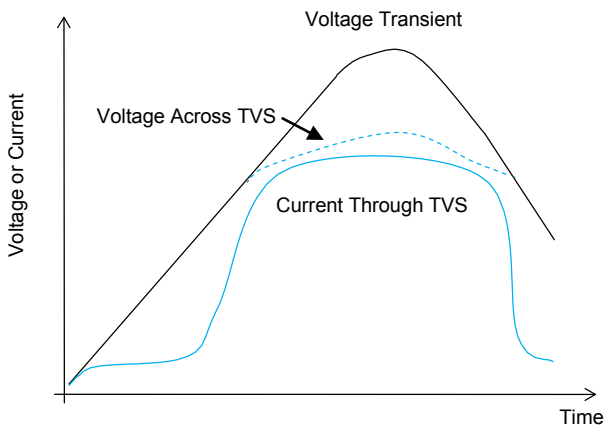


Fig.1 TVS Transients Clamping Waveform

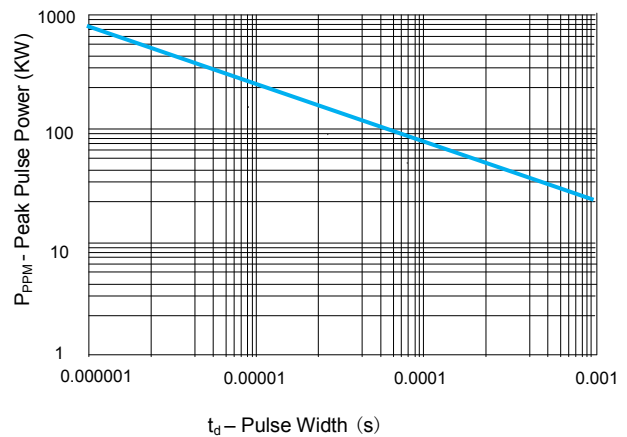


Fig.2 Peak Pulse Power Rating Curve

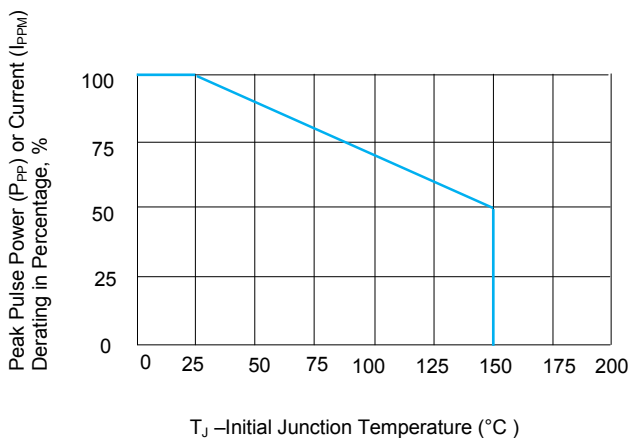


Fig.3 Peak Pulse Power Derating Curve

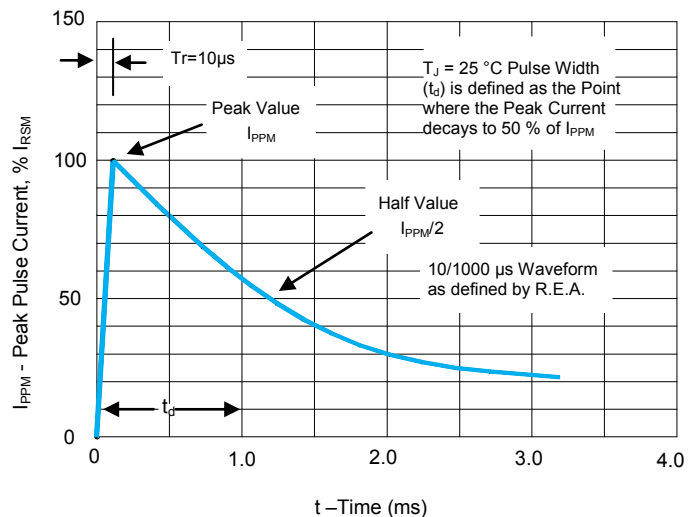


Fig.4 Pulse Waveform

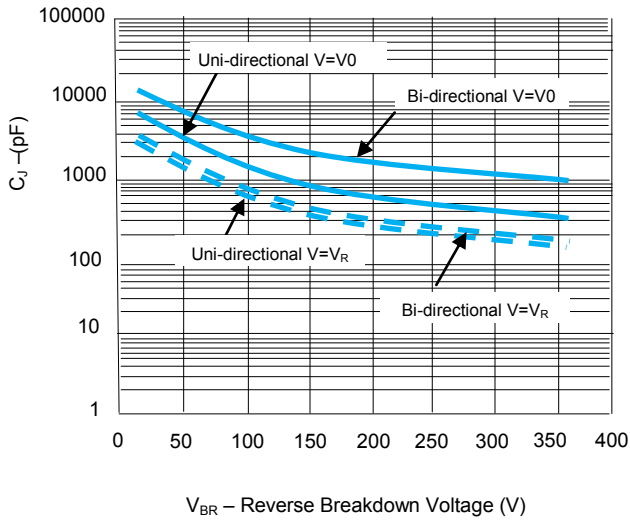


Fig.5 Typical Junction Capacitance

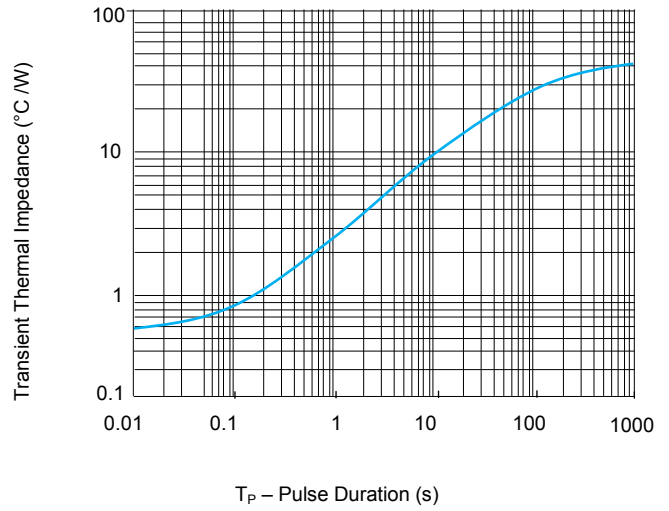


Fig.6 Typical Transient Thermal Impedance

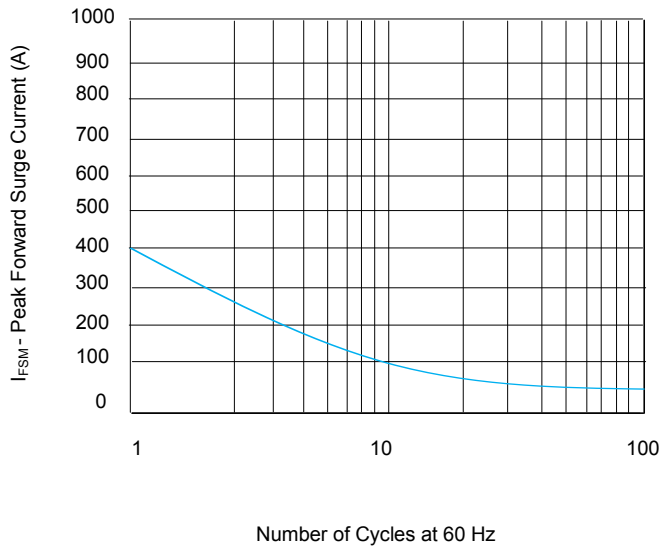


Fig.7 Maximum Non-Repetitive Forward Surge Current  
Uni-Directional only

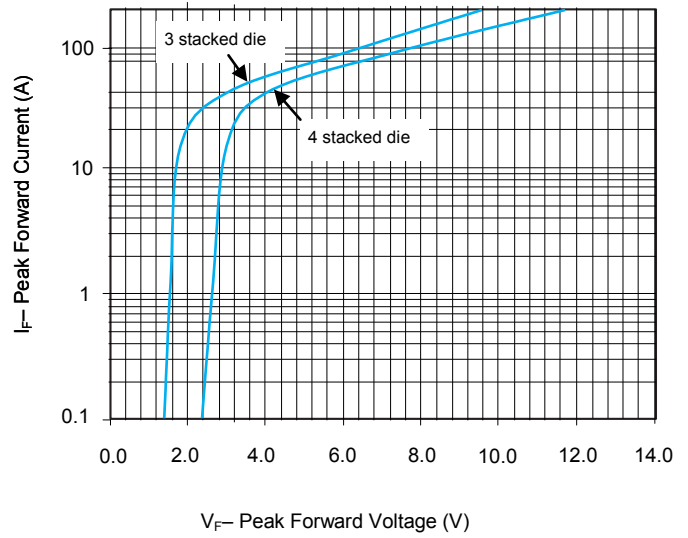


Fig.8 Peak Forward Drop vs Peak Forward Current  
(Typical Values)