



# CHENMKO ENTERPRISE CO.,LTD

**GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR**  
**VOLTAGE-6.8 TO 200 VOLTS**  
**400 WATTS PEAK POWER 1.0 WATT STEADY STATE**

**P4SSMJ**  
**CA SERIES**

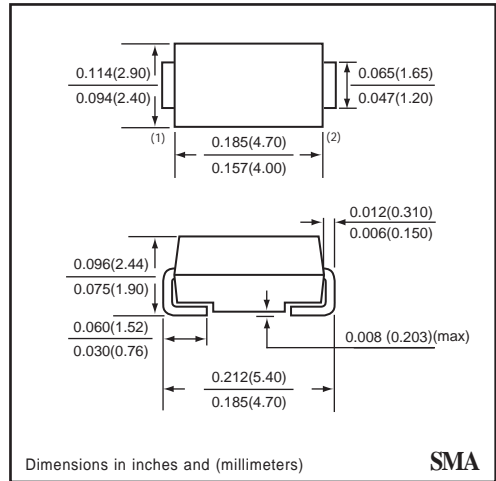
*Halogens free devices*

### FEATURES

- \* Plastic package
- \* 400W surge capability at 1ms
- \* Glass passivated chip junction in SMA Package
- \* Excellent clamping capability
- \* Low Zener Impedance
- \* Fast response time: typically less than 1.0ps from 0 volts to BV min.
- \* Typical IR less than 1 uA above 10V
- \* High temperature soldering guaranteed : 260°C/10 seconds at terminals

### MECHANICAL DATA

**Case:** JEDEC SMA molded plastic  
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026  
**Polarity:** Bidirectional  
**Mounting Position:** Any  
**Weight:** 0.002 ounce, 0.064 gram



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.  
 Single phase, half wave, 60 Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

### DEVICES FOR BIDIRECTIONAL APPLICATIONS

For Bidirectional use C or CA Suffix for types P4SSMJ6.8A thru types P4SSMJ200A  
 Electrical characteristics apply in both directions.

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

| RATINGS                                                                                      | SYMBOL   | VALUE       | UNITS |
|----------------------------------------------------------------------------------------------|----------|-------------|-------|
| Peak Power Dissipation at TA = 25°C, Tp = 1ms ( Note 1 )                                     | PPK      | Minimum 400 | Watts |
| Steady State Power Dissipation at TL = 75°C                                                  | PD       | 1.0         | Watts |
| Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load ( Note 2 ) | IFSM     | 40          | Amps  |
| Operating and Storage Temperature Range                                                      | TJ, TSTG | -65 to +175 | °C    |

NOTES : 1. Non-repetitive current pulse, per Fig. 3 and derated above TA = 25°C per Fig. 2.  
 2. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.  
 3. PC Board Mounted on 0.2 X 0.2" ( 5 X 5mm ) copper pad area.

| PRODUCT NO.   | Breakdown Voltage       |      |      |                | Working Peak Reverse Voltage | Maximum Reverse Leakage at Vrwm | Maximum Reverse Current ( NOTE 2 ) | Maximum Reverse Voltage at Irsm ( clamping ) | Maximum Temperature Coefficient of Vbr |
|---------------|-------------------------|------|------|----------------|------------------------------|---------------------------------|------------------------------------|----------------------------------------------|----------------------------------------|
|               | VBR<br>Volts ( NOTE 1 ) |      |      | @ IT<br>( mA ) |                              |                                 |                                    |                                              |                                        |
|               | MIN.                    | NOM. | MAX. |                | Vrwm ( V )                   | Ir ( uA )                       | Irsm ( A )                         | Vrsm ( V )                                   | ( %C )                                 |
| P4SSMJ6.8CAGP | 6.45                    | 6.8  | 7.14 | 10             | 5.80                         | 2000                            | 40                                 | 10.5                                         | 0.057                                  |
| P4SSMJ7.5CAGP | 7.13                    | 7.5  | 7.88 | 10             | 6.40                         | 1000                            | 37                                 | 11.3                                         | 0.061                                  |
| P4SSMJ8.2CAGP | 7.79                    | 8.2  | 8.61 | 10             | 7.02                         | 400                             | 35                                 | 12.1                                         | 0.065                                  |
| P4SSMJ9.1CAGP | 8.65                    | 9.1  | 9.55 | 1.0            | 7.78                         | 100                             | 31                                 | 13.4                                         | 0.068                                  |
| P4SSMJ10CAGP  | 9.5                     | 10   | 10.5 | 1.0            | 8.55                         | 20                              | 29                                 | 14.5                                         | 0.073                                  |
| P4SSMJ11CAGP  | 10.5                    | 11   | 11.6 | 1.0            | 9.40                         | 10                              | 27                                 | 15.6                                         | 0.075                                  |
| P4SSMJ12CAGP  | 11.4                    | 12   | 12.6 | 1.0            | 10.2                         | 5.0                             | 25                                 | 16.7                                         | 0.078                                  |
| P4SSMJ13CAGP  | 12.4                    | 13   | 13.7 | 1.0            | 11.1                         | 5.0                             | 23                                 | 18.2                                         | 0.081                                  |
| P4SSMJ15CAGP  | 14.3                    | 15   | 15.8 | 1.0            | 12.8                         | 5.0                             | 20                                 | 21.2                                         | 0.084                                  |
| P4SSMJ16CAGP  | 15.2                    | 16   | 16.8 | 1.0            | 13.6                         | 5.0                             | 19                                 | 22.5                                         | 0.086                                  |
| P4SSMJ18CAGP  | 17.1                    | 18   | 18.9 | 1.0            | 15.3                         | 5.0                             | 17                                 | 25.2                                         | 0.088                                  |
| P4SSMJ20CAGP  | 19.0                    | 20   | 21.0 | 1.0            | 17.1                         | 5.0                             | 15                                 | 27.7                                         | 0.090                                  |
| P4SSMJ22CAGP  | 20.9                    | 22   | 23.1 | 1.0            | 18.8                         | 5.0                             | 14                                 | 30.6                                         | 0.092                                  |
| P4SSMJ24CAGP  | 22.8                    | 24   | 25.2 | 1.0            | 20.5                         | 5.0                             | 13                                 | 33.2                                         | 0.094                                  |
| P4SSMJ27CAGP  | 25.7                    | 27   | 28.4 | 1.0            | 23.1                         | 5.0                             | 11.2                               | 37.5                                         | 0.096                                  |
| P4SSMJ30CAGP  | 28.5                    | 30   | 31.5 | 1.0            | 25.6                         | 5.0                             | 10                                 | 41.4                                         | 0.097                                  |
| P4SSMJ33CAGP  | 31.4                    | 33   | 34.7 | 1.0            | 28.2                         | 5.0                             | 9                                  | 45.7                                         | 0.098                                  |
| P4SSMJ36CAGP  | 34.2                    | 36   | 37.8 | 1.0            | 30.8                         | 5.0                             | 8.4                                | 49.9                                         | 0.099                                  |
| P4SSMJ39CAGP  | 37.1                    | 39   | 41.0 | 1.0            | 33.3                         | 5.0                             | 7.8                                | 53.9                                         | 0.100                                  |
| P4SSMJ43CAGP  | 40.9                    | 43   | 45.2 | 1.0            | 36.8                         | 5.0                             | 7.1                                | 59.3                                         | 0.101                                  |
| P4SSMJ47CAGP  | 44.7                    | 47   | 49.4 | 1.0            | 40.2                         | 5.0                             | 5.0                                | 64.8                                         | 0.101                                  |
| P4SSMJ51CAGP  | 48.5                    | 51   | 53.6 | 1.0            | 43.6                         | 5.0                             | 6.0                                | 70.1                                         | 0.102                                  |
| P4SSMJ56CAGP  | 53.2                    | 56   | 58.8 | 1.0            | 47.8                         | 5.0                             | 5.5                                | 77.0                                         | 0.103                                  |
| P4SSMJ62CAGP  | 58.9                    | 62   | 65.1 | 1.0            | 53.0                         | 5.0                             | 5.0                                | 85.0                                         | 0.104                                  |
| P4SSMJ68CAGP  | 64.6                    | 68   | 71.4 | 1.0            | 58.0                         | 5.0                             | 4.6                                | 92.0                                         | 0.104                                  |
| P4SSMJ75CAGP  | 71.3                    | 75   | 78.8 | 1.0            | 64.1                         | 5.0                             | 4.1                                | 103                                          | 0.105                                  |
| P4SSMJ82CAGP  | 77.9                    | 82   | 86.1 | 1.0            | 70.1                         | 5.0                             | 3.7                                | 113                                          | 0.105                                  |
| P4SSMJ91CAGP  | 86.5                    | 91   | 95.5 | 1.0            | 77.8                         | 5.0                             | 3.4                                | 125                                          | 0.106                                  |
| P4SSMJ100CAGP | 95.0                    | 100  | 105  | 1.0            | 85.5                         | 5.0                             | 3.1                                | 137                                          | 0.106                                  |
| P4SSMJ110CAGP | 105                     | 110  | 116  | 1.0            | 94.0                         | 5.0                             | 2.8                                | 152                                          | 0.107                                  |
| P4SSMJ120CAGP | 114                     | 120  | 126  | 1.0            | 102                          | 5.0                             | 2.5                                | 165                                          | 0.107                                  |
| P4SSMJ130CAGP | 124                     | 130  | 137  | 1.0            | 111                          | 5.0                             | 2.3                                | 179                                          | 0.107                                  |
| P4SSMJ150CAGP | 143                     | 150  | 158  | 1.0            | 128                          | 5.0                             | 2.0                                | 207                                          | 0.108                                  |
| P4SSMJ160CAGP | 152                     | 160  | 168  | 1.0            | 136                          | 5.0                             | 1.9                                | 219                                          | 0.108                                  |
| P4SSMJ170CAGP | 162                     | 170  | 179  | 1.0            | 145                          | 5.0                             | 1.8                                | 234                                          | 0.108                                  |
| P4SSMJ180CAGP | 171                     | 180  | 189  | 1.0            | 154                          | 5.0                             | 1.7                                | 246                                          | 0.108                                  |
| P4SSMJ200CAGP | 190                     | 200  | 210  | 1.0            | 171                          | 5.0                             | 1.53                               | 274                                          | 0.108                                  |

# RATING CHARACTERISTIC CURVES ( P4SSMJ6.8CAGP ~ P4SSMJ200CAGP )

FIG. 1 - PEAK PULSE POWER RATING CURVE

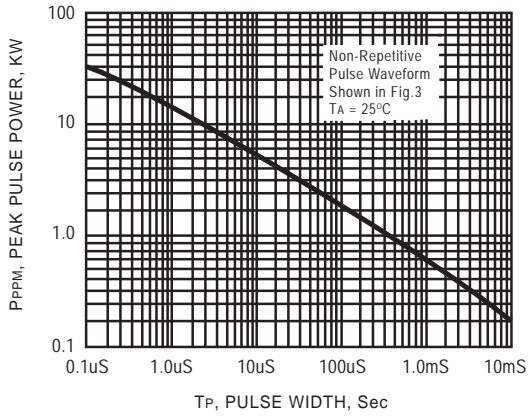


FIG. 2 - PULSE DERATING CURVE

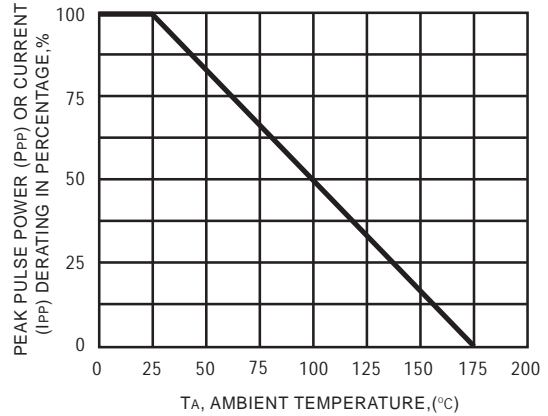


FIG. 3 - PULSE WAVEFORM

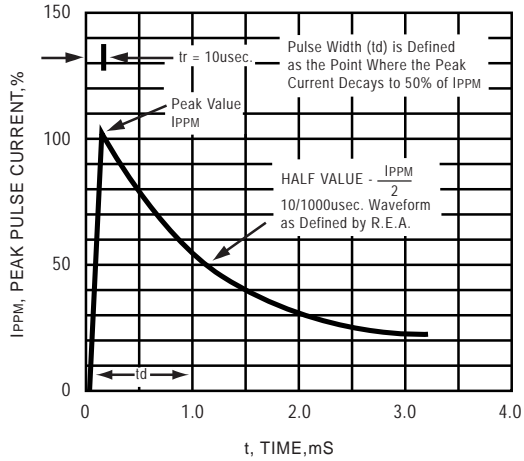
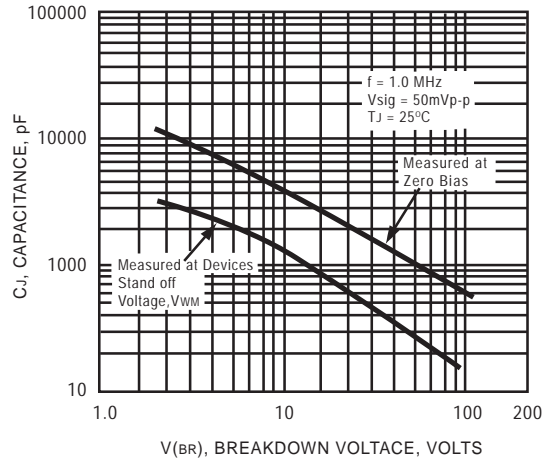


FIG. 4 - TYPICAL JUNCTION CAPACITANCE UNI-DIRECTIONAL



# RATING CHARACTERISTIC CURVES( P4SSMJ6.8CAGP~P4SSMJ200CAGP )

FIG. 5 - STEADY STATE POWER DERATING CURVE

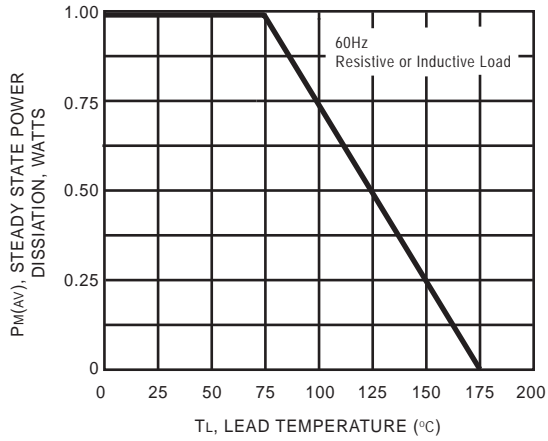


FIG. 6 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL

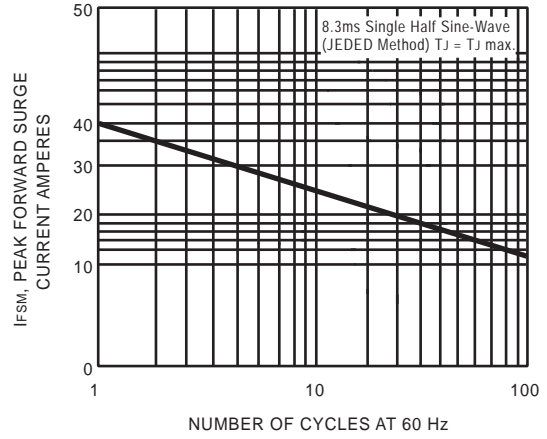


FIG. 7 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS

