



P6SMB SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR POWER 600 Watt

BREAK DOWN VOLTAGE

6.8 to 400 Volt

SMB / DO-214AA

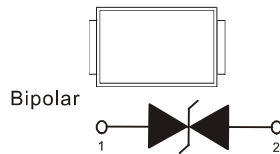
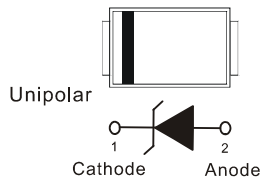
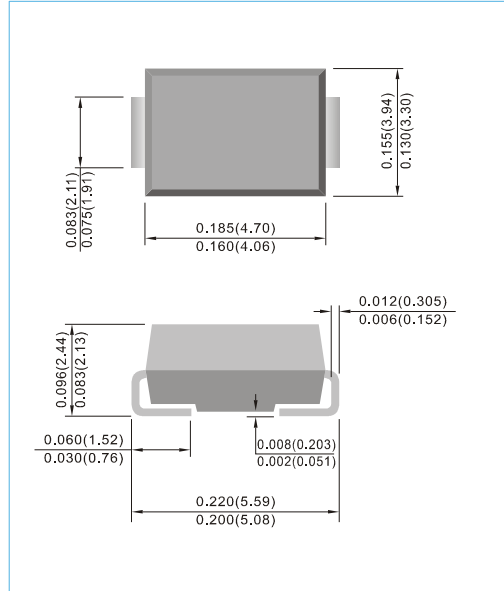
Unit : inch(mm)

FEATURES

- For surface mounted applications in order to optimize board space.
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Fammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- ESD IEC-61000-4-2 Air ± 30kV, Contact ± 30kV
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

- Case: JEDEC DO-214AA ,Molded plastic over passivated junction
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Standard Packaging: 12mm tape (EIA-481)
- Weight: 0.003 ounce, 0.093 gram



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types
Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.
For Capacitive load derate current by 20%.

| Rating | Symbol | Value | Units |
|---|-----------------|-------------|--------|
| Peak Pulse Power Dissipation on $t_p=10/1000\mu s$ waveform (Notes 1,2, Fig.1) | P_{PP} | 600 | Watts |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (Notes 2,3) | I_{FSM} | 100 | Amps |
| Peak Pulse Current on $t_p=10/1000\mu s$ waveform (Notes 1) Fig.3 | I_{PPM} | see Table 1 | Amps |
| Typical Thermal Resistance Junction to Air (Notes 2) | $R_{\theta JA}$ | 60 | °C / W |
| ESD IEC-61000-4-2 (Air) ESD IEC-61000-4-2 (Contact) | V_{ESD} | ±30 ±30 | kV |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | °C |

NOTES :

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ C$ per Fig. 2.
2. Mounted on $5mm^2$ (0.13mm thick) land areas.
3. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulse s per minute maximum.
4. A transient suppressor is selected according to the working peak reverse voltage (V_{RWM}), which should be equal to or greater than the DC or continuous peak operating voltage level.



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| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage 10/1000 μ s | Peak Pulse Current 10/1000 μ s | Marking Code | |
|--|------------|---------------------------|-------------------|------|--------------|-----------------|---------|---------------------------------------|---------------------------------------|--------------|-----|
| | | | $V_{BR} @ I_T$ | | | $I_R @ V_{RWM}$ | | | | | |
| | | V_{RWM} (Notes 4) | Min. | Max. | I_T | UNI | BI | $V_C @ I_{PP}$ | I_{PP} | | |
| UNI | BI | V | V | V | mA | μ A | μ A | V | A | UNI | BI |
| 600W Transient Voltage Suppressor | | | | | | | | | | | |
| P6SMB6.8 | P6SMB6.8C | 5.5 | 6.12 | 7.48 | 10 | 1000 | 2000 | 10.8 | 56 | EZA | DZA |
| P6SMB6.8A | P6SMB6.8CA | 5.8 | 6.45 | 7.14 | 10 | 1000 | 2000 | 10.5 | 57 | EZB | DZB |
| P6SMB7.5 | P6SMB7.5C | 6.05 | 6.75 | 8.25 | 10 | 500 | 1000 | 11.7 | 51 | EZC | DZC |
| P6SMB7.5A | P6SMB7.5CA | 6.4 | 7.13 | 7.88 | 10 | 500 | 1000 | 11.3 | 53 | EZD | DZD |
| P6SMB8.2 | P6SMB8.2C | 6.63 | 7.38 | 9.02 | 10 | 200 | 400 | 12.5 | 48 | EZE | DZE |
| P6SMB8.2A | P6SMB8.2CA | 7.02 | 7.79 | 8.61 | 10 | 200 | 400 | 12.1 | 50 | EZF | DZF |
| P6SMB9.1 | P6SMB9.1C | 7.37 | 8.19 | 10 | 1 | 50 | 100 | 13.8 | 44 | EZG | DZG |
| P6SMB9.1A | P6SMB9.1CA | 7.78 | 8.65 | 9.5 | 1 | 50 | 100 | 13.4 | 45 | EZH | DZH |
| P6SMB10 | P6SMB10C | 8.1 | 9 | 11 | 1 | 10 | 20 | 15 | 40 | EZJ | DZJ |
| P6SMB10A | P6SMB10CA | 8.55 | 9.5 | 10.5 | 1 | 10 | 20 | 14.5 | 41 | EZK | DZK |
| P6SMB11 | P6SMB11C | 8.92 | 9.9 | 12.1 | 1 | 5 | 10 | 16.2 | 37 | EZL | DZL |
| P6SMB11A | P6SMB11CA | 9.4 | 10.5 | 11.6 | 1 | 5 | 10 | 15.6 | 38 | EZM | DZM |
| P6SMB12 | P6SMB12C | 9.72 | 10.8 | 13.2 | 1 | 5 | 5 | 17.3 | 35 | EZN | DZN |
| P6SMB12A | P6SMB12CA | 10.2 | 11.4 | 12.6 | 1 | 5 | 5 | 16.7 | 36 | EZP | DZP |
| P6SMB13 | P6SMB13C | 10.5 | 11.7 | 14.3 | 1 | 1 | 1 | 19 | 32 | EZQ | DZQ |
| P6SMB13A | P6SMB13CA | 11.1 | 12.4 | 13.7 | 1 | 1 | 1 | 18.2 | 33 | EZR | DZR |
| P6SMB15 | P6SMB15C | 12.1 | 13.5 | 16.5 | 1 | 1 | 1 | 22 | 27 | EZS | DZS |
| P6SMB15A | P6SMB15CA | 12.8 | 14.3 | 15.8 | 1 | 1 | 1 | 21.2 | 28 | EZT | DZT |
| P6SMB16 | P6SMB16C | 12.9 | 14.4 | 17.6 | 1 | 1 | 1 | 23.5 | 26 | EZU | DZU |
| P6SMB16A | P6SMB16CA | 13.6 | 15.2 | 16.8 | 1 | 1 | 1 | 22.5 | 27 | EZV | DZV |
| P6SMB18 | P6SMB18C | 14.5 | 16.2 | 19.8 | 1 | 1 | 1 | 26.5 | 23 | EZW | DZW |
| P6SMB18A | P6SMB18CA | 15.3 | 17.1 | 18.9 | 1 | 1 | 1 | 25.2 | 24 | EZX | DZX |
| P6SMB20 | P6SMB20C | 16.2 | 18 | 22 | 1 | 1 | 1 | 29.1 | 21 | EZY | DZY |
| P6SMB20A | P6SMB20CA | 17.1 | 19 | 21 | 1 | 1 | 1 | 27.7 | 22 | EZZ | DZZ |
| P6SMB22 | P6SMB22C | 17.8 | 19.8 | 24.2 | 1 | 1 | 1 | 31.9 | 19 | EXA | DXA |
| P6SMB22A | P6SMB22CA | 18.8 | 20.9 | 23.1 | 1 | 1 | 1 | 30.6 | 20 | EXB | DXB |
| P6SMB24 | P6SMB24C | 19.4 | 21.6 | 26.4 | 1 | 1 | 1 | 34.7 | 17 | EXC | DXC |
| P6SMB24A | P6SMB24CA | 20.5 | 22.8 | 25.2 | 1 | 1 | 1 | 33.2 | 18 | EXD | DXD |
| P6SMB27 | P6SMB27C | 21.8 | 24.3 | 29.7 | 1 | 1 | 1 | 39.1 | 15 | EXE | DXE |
| P6SMB27A | P6SMB27CA | 23.1 | 25.7 | 28.4 | 1 | 1 | 1 | 37.5 | 16 | EXF | DXF |
| P6SMB30 | P6SMB30C | 24.3 | 27 | 33 | 1 | 1 | 1 | 43.5 | 14 | EXG | DXG |
| P6SMB30A | P6SMB30CA | 25.6 | 28.5 | 31.5 | 1 | 1 | 1 | 41.4 | 14.4 | EXH | DXH |
| P6SMB33 | P6SMB33C | 26.8 | 29.7 | 36.3 | 1 | 1 | 1 | 47.7 | 12.6 | EXJ | DXJ |
| P6SMB33A | P6SMB33CA | 28.2 | 31.4 | 34.7 | 1 | 1 | 1 | 45.7 | 13.2 | EXK | DXK |
| P6SMB36 | P6SMB36C | 29.1 | 32.4 | 39.6 | 1 | 1 | 1 | 52 | 11.6 | EXL | DXL |
| P6SMB36A | P6SMB36CA | 30.8 | 34.2 | 37.8 | 1 | 1 | 1 | 49.9 | 12 | EXM | DXM |
| P6SMB39 | P6SMB39C | 31.6 | 35.1 | 42.9 | 1 | 1 | 1 | 56.4 | 10.6 | EXN | DXN |
| P6SMB39A | P6SMB39CA | 33.3 | 37.1 | 41 | 1 | 1 | 1 | 53.9 | 11.2 | EXP | DXP |
| P6SMB43 | P6SMB43C | 34.8 | 38.7 | 47.3 | 1 | 1 | 1 | 61.9 | 9.6 | EXQ | DXQ |
| P6SMB43A | P6SMB43CA | 36.8 | 40.9 | 45.2 | 1 | 1 | 1 | 59.3 | 10.1 | EXR | DXR |
| P6SMB47 | P6SMB47C | 38.1 | 42.3 | 51.7 | 1 | 1 | 1 | 67.8 | 8.9 | EXS | DXS |
| P6SMB47A | P6SMB47CA | 40.2 | 44.7 | 49.4 | 1 | 1 | 1 | 64.8 | 9.3 | EXT | DXT |
| P6SMB51 | P6SMB51C | 41.3 | 45.9 | 56.1 | 1 | 1 | 1 | 73.5 | 8.2 | EXU | DXU |
| P6SMB51A | P6SMB51CA | 43.6 | 48.5 | 53.6 | 1 | 1 | 1 | 70.1 | 8.6 | EXV | DXV |
| P6SMB56 | P6SMB56C | 45.6 | 50.4 | 61.6 | 1 | 1 | 1 | 80.5 | 7.4 | EXW | DXW |



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| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage 10/1000 μ s | Peak Pulse Current 10/1000 μ s | Marking Code | |
|--|------------|-------------------------------|----------------------------------|------|----------------|-----------------------------------|---------|---------------------------------------|---------------------------------------|--------------|-----|
| | | | V _{BR} @ I _T | | | I _R @ V _{RWM} | | | | | |
| | | V _{RWM} (Notes 4) | Min. | Max. | I _T | UNI | BI | V _C @ I _{PP} | I _{PP} | | |
| UNI | BI | V | V | V | mA | μ A | μ A | V | A | UNI | BI |
| 600W Transient Voltage Suppressor | | | | | | | | | | | |
| P6SMB56A | P6SMB56CA | 47.8 | 53.2 | 58.8 | 1 | 1 | 1 | 77 | 7.8 | EXX | DXX |
| P6SMB62 | P6SMB62C | 50.2 | 55.8 | 68.2 | 1 | 1 | 1 | 89 | 6.8 | EXY | DXY |
| P6SMB62A | P6SMB62CA | 53 | 58.9 | 65.1 | 1 | 1 | 1 | 85 | 7.1 | EXZ | DXZ |
| P6SMB68 | P6SMB68C | 55.1 | 61.2 | 74.8 | 1 | 1 | 1 | 98 | 6.1 | EYA | DYA |
| P6SMB68A | P6SMB68CA | 58.1 | 64.6 | 71.4 | 1 | 1 | 1 | 92 | 6.5 | EYB | DYB |
| P6SMB75 | P6SMB75C | 60.7 | 67.5 | 82.5 | 1 | 1 | 1 | 108 | 5.5 | EYC | DYC |
| P6SMB75A | P6SMB75CA | 64.1 | 71.3 | 78.8 | 1 | 1 | 1 | 103 | 5.8 | EYD | DYD |
| P6SMB82 | P6SMB82C | 66.4 | 73.8 | 90.2 | 1 | 1 | 1 | 118 | 5.1 | EYE | DYE |
| P6SMB82A | P6SMB82CA | 70.1 | 77.9 | 86.1 | 1 | 1 | 1 | 113 | 5.3 | EYF | DYF |
| P6SMB91 | P6SMB91C | 73.7 | 81.9 | 100 | 1 | 1 | 1 | 131 | 4.5 | EYG | DYG |
| P6SMB91A | P6SMB91CA | 77.8 | 86.5 | 95.5 | 1 | 1 | 1 | 125 | 4.8 | EYH | DYH |
| P6SMB100 | P6SMB100C | 81 | 90 | 110 | 1 | 1 | 1 | 144 | 4.2 | EYJ | DYJ |
| P6SMB100A | P6SMB100CA | 85.5 | 95 | 105 | 1 | 1 | 1 | 137 | 4.4 | EYK | DYK |
| P6SMB110 | P6SMB110C | 89.2 | 99 | 121 | 1 | 1 | 1 | 158 | 3.8 | EYL | DYL |
| P6SMB110A | P6SMB110CA | 94 | 105 | 116 | 1 | 1 | 1 | 152 | 4 | EYM | DYM |
| P6SMB120 | P6SMB120C | 97.2 | 108 | 132 | 1 | 1 | 1 | 173 | 3.5 | EYN | DYN |
| P6SMB120A | P6SMB120CA | 102 | 114 | 126 | 1 | 1 | 1 | 165 | 3.6 | EYP | DYP |
| P6SMB130 | P6SMB130C | 105 | 117 | 143 | 1 | 1 | 1 | 187 | 3.2 | EYQ | DYQ |
| P6SMB130A | P6SMB130CA | 111 | 124 | 137 | 1 | 1 | 1 | 179 | 3.3 | EYR | DYR |
| P6SMB150 | P6SMB150C | 121 | 135 | 165 | 1 | 1 | 1 | 215 | 2.8 | EYS | DYS |
| P6SMB150A | P6SMB150CA | 128 | 143 | 158 | 1 | 1 | 1 | 207 | 2.9 | EYT | DYT |
| P6SMB160 | P6SMB160C | 130 | 144 | 176 | 1 | 1 | 1 | 230 | 2.6 | EYU | DYU |
| P6SMB160A | P6SMB160CA | 136 | 152 | 168 | 1 | 1 | 1 | 219 | 2.7 | EYV | DYV |
| P6SMB170 | P6SMB170C | 138 | 153 | 187 | 1 | 1 | 1 | 244 | 2.5 | EYW | DYW |
| P6SMB170A | P6SMB170CA | 145 | 162 | 179 | 1 | 1 | 1 | 234 | 2.6 | EYX | DYX |
| P6SMB180 | P6SMB180C | 146 | 162 | 198 | 1 | 1 | 1 | 258 | 2.3 | EYY | DYY |
| P6SMB180A | P6SMB180CA | 154 | 171 | 189 | 1 | 1 | 1 | 246 | 2.4 | EYZ | DYZ |
| P6SMB200 | P6SMB200C | 162 | 180 | 220 | 1 | 1 | 1 | 287 | 2.1 | EWA | DWA |
| P6SMB200A | P6SMB200CA | 171 | 190 | 210 | 1 | 1 | 1 | 274 | 2.2 | EWB | DWB |
| P6SMB220 | P6SMB220C | 175 | 198 | 242 | 1 | 1 | 1 | 344 | 1.8 | EW C | DWC |
| P6SMB220A | P6SMB220CA | 185 | 209 | 231 | 1 | 1 | 1 | 328 | 1.9 | EWD | DWD |
| P6SMB250 | P6SMB250C | 202 | 225 | 275 | 1 | 1 | 1 | 360 | 1.7 | EWE | DWE |
| P6SMB250A | P6SMB250CA | 214 | 237 | 263 | 1 | 1 | 1 | 344 | 1.8 | EW F | DWF |
| P6SMB300A | - | 256 | 285 | 315 | 1 | 1 | - | 414 | 1.5 | EW H | - |
| P6SMB350A | - | 300 | 332 | 368 | 1 | 1 | - | 482 | 1.3 | EW K | - |
| P6SMB400A | - | 342 | 380 | 420 | 1 | 1 | - | 548 | 1.1 | EW M | - |



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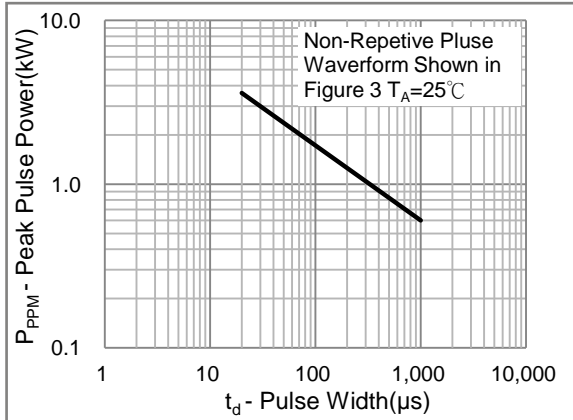


Fig.1 Peak Pulse Power Rating

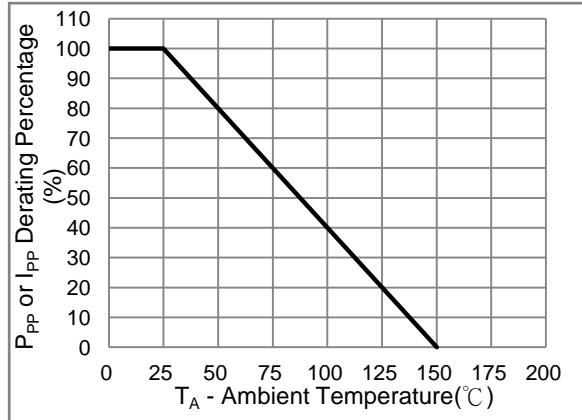


Fig.2 Derating Curve

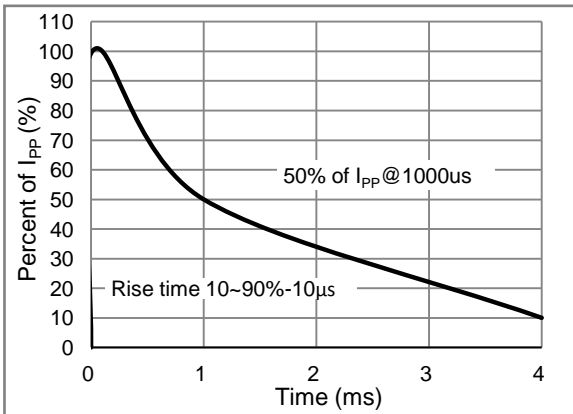


Fig.3 10/1000μs Pulse Waveform

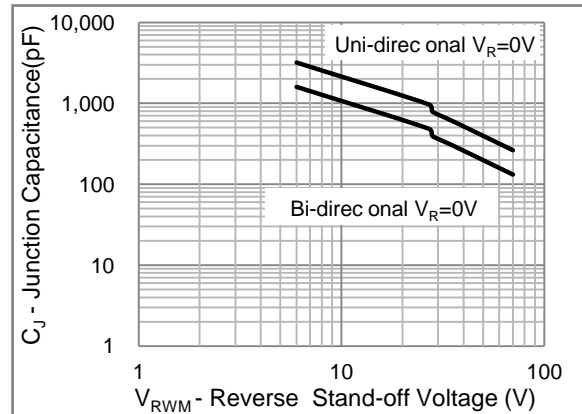


Fig.4 Typical Capacitance

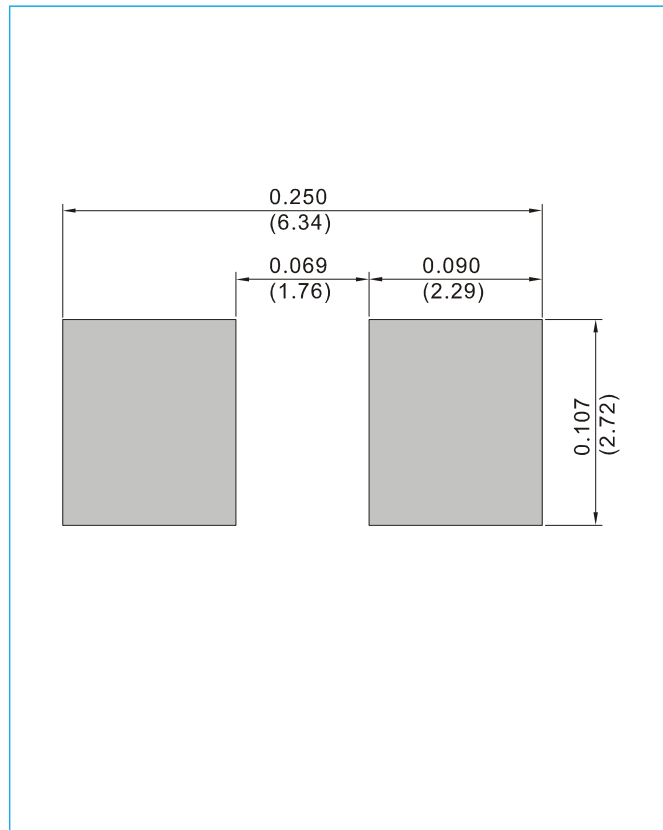


P6SMB SERIES

MOUNTING PAD LAYOUT

SMB / DO-214AA

Unit : inch(mm)



ORDER INFORMATION

- Packing information
 - T/R - 3K per 13" plastic Reel
 - T/R - 0.8K per 7" plastic Reel



P6SMB SERIES

Part No_packing code_Version

P6SMB6.8_R1_00001

P6SMB6.8_R2_00001

For example :

RB500V-40_R2_00001



| Packing Code XX | | | | Version Code XXXXX | | |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type | 1 st Code | Packing size code | 2 nd Code | HF or RoHS | 1 st Code | 2 nd ~5 th Code |
| Tape and Ammunition Box (T/B) | A | N/A | 0 | HF | 0 | serial number |
| Tape and Reel (T/R) | R | 7" | 1 | RoHS | 1 | serial number |
| Bulk Packing (B/P) | B | 13" | 2 | | | |
| Tube Packing (T/P) | T | 26mm | X | | | |
| Tape and Reel (Right Oriented) (TRR) | S | 52mm | Y | | | |
| Tape and Reel (Left Oriented) (TRL) | L | PANASERT T/B CATHODE UP (PBCU) | U | | | |
| FORMING | F | PANASERT T/B CATHODE DOWN (PBCD) | D | | | |