

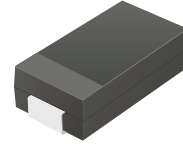
## ATV06B5V0-HF Thru. ATV06B441-HF

Working Peak Reverse voltage: 5.0 to 440Volts


Power Dissipation: 600 Watts

RoHS Device

Halogen Free

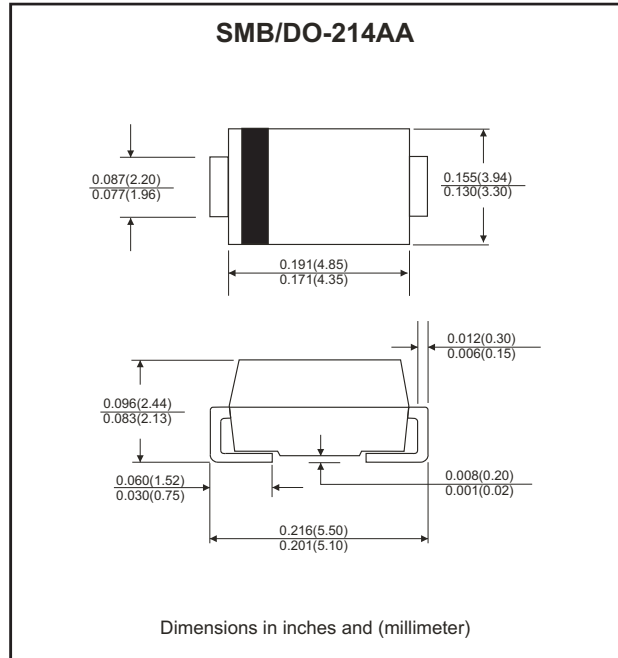


### Features

- Glass passivated chip.
- 600W peak pulse power capability with a 10/1000 $\mu$ s waveform, repetitive rate (duty cycle): 0.01%.
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- Comply with AEC-Q101.
- UL recognized file # E349157  Range: ATV06B5V0J(B) thru. ATV06B400J(B)

### Mechanical Data

- Case: JEDEC DO-214AA, molded plastic.
- Epoxy: UL 94V-0 rate flame retardant.
- Terminals: solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar.
- Mounting position: Any.
- Weight: 0.108 gram (approx.)



### Maximum Ratings and Electrical Characteristics

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

| Parameter  | Symbol                            | Value          | Units |
|--|-----------------------------------|----------------|-------|
| Peak power dissipation with a 10/1000 $\mu$ s waveform (Note 1)                      | P <sub>PP</sub>                   | 600            | Watts |
| Peak pulse current with a 10/1000 $\mu$ s waveform (Note 1)                          | I <sub>PP</sub>                   | See Next Table | A     |
| Power dissipation on infinite heatsink at T <sub>L</sub> =75°C                       | P <sub>D</sub>                    | 5.0            | Watts |
| Peak forward surge current, 8.3ms single half sine-wave unidirectional only (Note 2) | I <sub>FSM</sub>                  | 100            | A     |
| Maximum instantaneous forward voltage at 50 A for unidirectional only (Note 3)       | V <sub>F</sub>                    | 3.5/5.0        | V     |
| Operating junction and Storage temperature range                                     | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150    | °C    |

- Note: 1. Non-repetitive current pulse per Fig. 5 and derated above T<sub>A</sub>=25°C per Fig.1  
 2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.  
 3. V<sub>F</sub><3.5V for devices of V<sub>BR</sub> <200V and V<sub>F</sub> <5.0V for devices of V<sub>BR</sub> >201V

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## Rating and Characteristics Curves (ATV06B5V0-HF Thru. ATV06B441-HF)

Fig.1 - Pulse Derating Curve

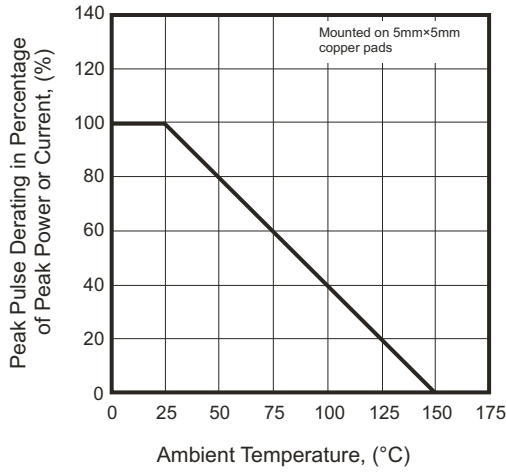


Fig.2 - Max. Non-Repetitive Surge Current

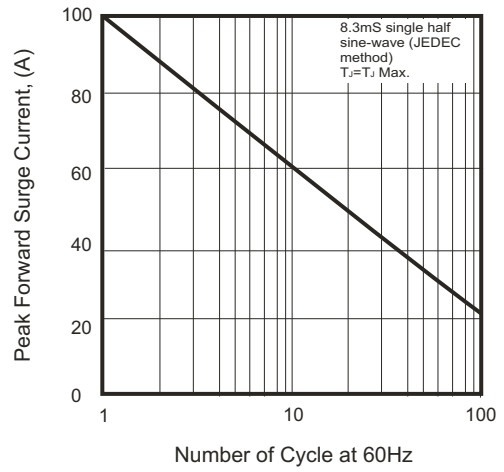


Fig.3 - Steady State Power Derating Curve

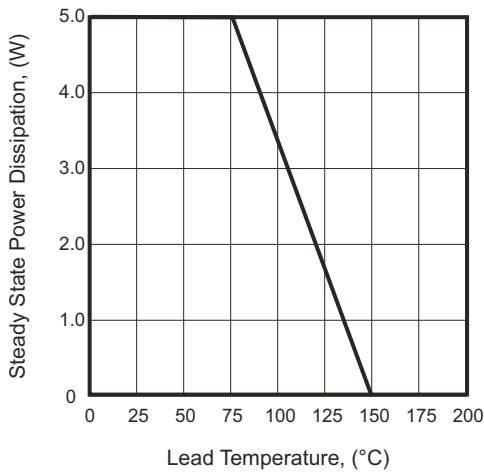


Fig.4 - Peak Pulse Power Rating Curve

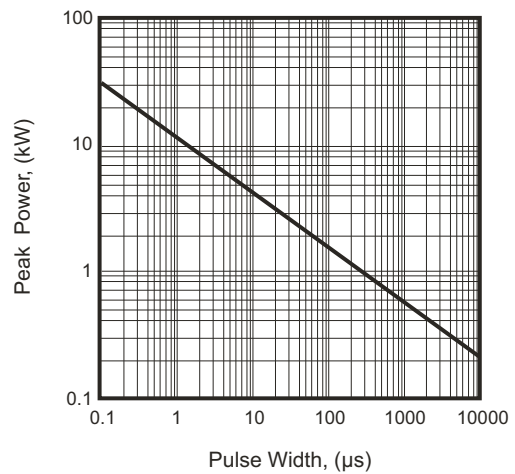


Fig.5 - Pulse Waveform

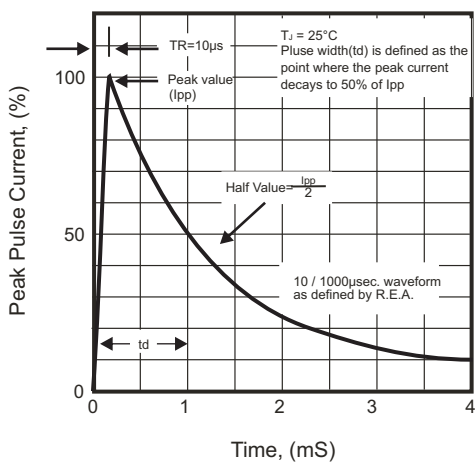
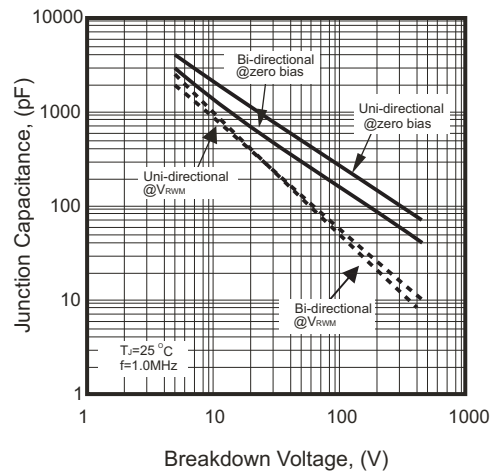


Fig.6 - Typical Junction Capacitance



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# SMD Transient Voltage Suppressor



## Electrical Characteristics (ATV06B5V0-HF Thru. ATV06B441-HF)

| Part No.         | Breakdown voltage<br>V <sub>BR</sub> @ I <sub>T</sub> |             |                        | Maximum<br>Reverse<br>Leakage<br>@V <sub>RWM</sub><br>I <sub>R</sub> (uA) | Working<br>Peak<br>Reverse<br>Voltage<br>V <sub>RWM</sub> (V) | Maximum<br>Reverse<br>Surge<br>Current<br>I <sub>PP</sub> (A) | Maximum<br>Clamping<br>Voltage<br>@I <sub>PP</sub><br>V <sub>c</sub> (V) | Device<br>Marking<br>Code |    |
|------------------|---|-------------|------------------------|---|---|---|--|---------------------------|----|
|                  | Min.<br>(V)   | Max.<br>(V) | I <sub>T</sub><br>(mA) |   |   |   |  | UNI                       | BI |
| ATV06B5V0J(B)-HF | 6.40  | 7.00        | 10                     | 800   | 5.0   | 65.22   | 9.2  | KE                        | AE |
| ATV06B6V0J(B)-HF | 6.67  | 7.37        | 10                     | 800   | 6.0   | 58.25   | 10.3   | KG                        | AG |
| ATV06B6V5J(B)-HF | 7.22  | 7.98        | 10                     | 500   | 6.5   | 53.57   | 11.2   | KK                        | AK |
| ATV06B7V0J(B)-HF | 7.78  | 8.60        | 10                     | 200   | 7.0   | 50.00   | 12.0   | KM                        | AM |
| ATV06B7V5J(B)-HF | 8.33  | 9.21        | 1                      | 100   | 7.5   | 46.51   | 12.9   | KP                        | AP |
| ATV06B8V0J(B)-HF | 8.89  | 9.83        | 1                      | 50  | 8.0   | 44.12   | 13.6   | KR                        | AR |
| ATV06B8V5J(B)-HF | 9.44  | 10.40       | 1                      | 20  | 8.5   | 41.67   | 14.4   | KT                        | AT |
| ATV06B9V0J(B)-HF | 10.00   | 11.10       | 1                      | 10  | 9.0   | 38.96   | 15.4   | KV                        | AV |
| ATV06B100J(B)-HF | 11.10   | 12.30       | 1                      | 5.0   | 10.0  | 35.29   | 17.0   | KX                        | AX |
| ATV06B110J(B)-HF | 12.20   | 13.50       | 1                      | 1.0   | 11.0  | 32.97   | 18.2   | KZ                        | AZ |
| ATV06B120J(B)-HF | 13.30   | 14.70       | 1                      | 1.0   | 12.0  | 30.15   | 19.9   | LE                        | BE |
| ATV06B130J(B)-HF | 14.40   | 15.90       | 1                      | 1.0   | 13.0  | 27.91   | 21.5   | LG                        | BG |
| ATV06B140J(B)-HF | 15.60   | 17.20       | 1                      | 1.0   | 14.0  | 25.86   | 23.2   | LK                        | BK |
| ATV06B150J(B)-HF | 16.70   | 18.50       | 1                      | 1.0   | 15.0  | 24.59   | 24.4   | LM                        | BM |
| ATV06B160J(B)-HF | 17.80   | 19.70       | 1                      | 1.0   | 16.0  | 23.08   | 26.0   | LP                        | BP |
| ATV06B170J(B)-HF | 18.90   | 20.90       | 1                      | 1.0   | 17.0  | 21.74   | 27.6   | LR                        | BR |
| ATV06B180J(B)-HF | 20.00   | 22.10       | 1                      | 1.0   | 18.0  | 20.55   | 29.2   | LT                        | BT |
| ATV06B190J(B)-HF | 21.10   | 23.30       | 1                      | 1.0   | 19.0  | 19.49   | 30.8   | LB                        | BB |
| ATV06B200J(B)-HF | 22.20   | 24.50       | 1                      | 1.0   | 20.0  | 18.52   | 32.4   | LV                        | BV |
| ATV06B220J(B)-HF | 24.40   | 26.90       | 1                      | 1.0   | 22.0  | 16.90   | 35.5   | LX                        | BX |
| ATV06B240J(B)-HF | 26.70   | 29.50       | 1                      | 1.0   | 24.0  | 15.42   | 38.9   | LZ                        | BZ |
| ATV06B260J(B)-HF | 28.90   | 31.90       | 1                      | 1.0   | 26.0  | 14.25   | 42.1   | ME                        | CE |
| ATV06B280J(B)-HF | 31.10   | 34.40       | 1                      | 1.0   | 28.0  | 13.22   | 45.4   | MG                        | CG |
| ATV06B300J(B)-HF | 33.30   | 36.80       | 1                      | 1.0   | 30.0  | 12.40   | 48.4   | MK                        | CK |
| ATV06B330J(B)-HF | 36.70   | 40.60       | 1                      | 1.0   | 33.0  | 11.26   | 53.3   | MM                        | CM |
| ATV06B360J(B)-HF | 40.00   | 44.20       | 1                      | 1.0   | 36.0  | 10.33   | 58.1   | MP                        | CP |
| ATV06B400J(B)-HF | 44.40   | 49.10       | 1                      | 1.0   | 40.0  | 9.30  | 64.5   | MR                        | CR |
| ATV06B430J(B)-HF | 47.80   | 52.80       | 1                      | 1.0   | 43.0  | 8.65  | 69.4   | MT                        | CT |
| ATV06B450J(B)-HF | 50.00   | 55.30       | 1                      | 1.0   | 45.0  | 8.25  | 72.7   | MV                        | CV |
| ATV06B480J(B)-HF | 53.30   | 58.90       | 1                      | 1.0   | 48.0  | 7.75  | 77.4   | MX                        | CX |
| ATV06B510J(B)-HF | 56.70   | 62.70       | 1                      | 1.0   | 51.0  | 7.28  | 82.4   | MZ                        | CZ |
| ATV06B540J(B)-HF | 60.00   | 66.30       | 1                      | 1.0   | 54.0  | 6.89  | 87.1   | NE                        | DE |
| ATV06B580J(B)-HF | 64.40   | 71.20       | 1                      | 1.0   | 58.0  | 6.41  | 93.6   | NG                        | DG |
| ATV06B600J(B)-HF | 66.70   | 73.70       | 1                      | 1.0   | 60.0  | 6.20  | 96.8   | NK                        | DK |
| ATV06B640J(B)-HF | 71.10   | 78.60       | 1                      | 1.0   | 64.0  | 5.83  | 103.0  | NM                        | DM |
| ATV06B700J(B)-HF | 77.80   | 86.00       | 1                      | 1.0   | 70.0  | 5.31  | 113.0  | NP                        | DP |
| ATV06B750J(B)-HF | 83.30   | 92.10       | 1                      | 1.0   | 75.0  | 4.96  | 121.0  | NR                        | DR |
| ATV06B780J(B)-HF | 86.70   | 95.80       | 1                      | 1.0   | 78.0  | 4.76  | 126.0  | NT                        | DT |
| ATV06B800J(B)-HF | 88.80   | 97.60       | 1                      | 1.0   | 80.0  | 4.63  | 129.6  | NB                        | DB |
| ATV06B850J(B)-HF | 94.40   | 104.00      | 1                      | 1.0   | 85.0  | 4.38  | 137.0  | NV                        | DV |
| ATV06B900J(B)-HF | 100.00  | 111.00      | 1                      | 1.0   | 90.0  | 4.11  | 146.0  | NX                        | DX |
| ATV06B101J(B)-HF | 111.00  | 123.00      | 1                      | 1.0   | 100.0   | 3.70  | 162.0  | NZ                        | DZ |
| ATV06B111J(B)-HF | 122.00  | 135.00      | 1                      | 1.0   | 110.0   | 3.39  | 177.0  | PE                        | EE |
| ATV06B121J(B)-HF | 133.00  | 147.00      | 1                      | 1.0   | 120.0   | 3.11  | 193.0  | PG                        | EG |

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REV:B

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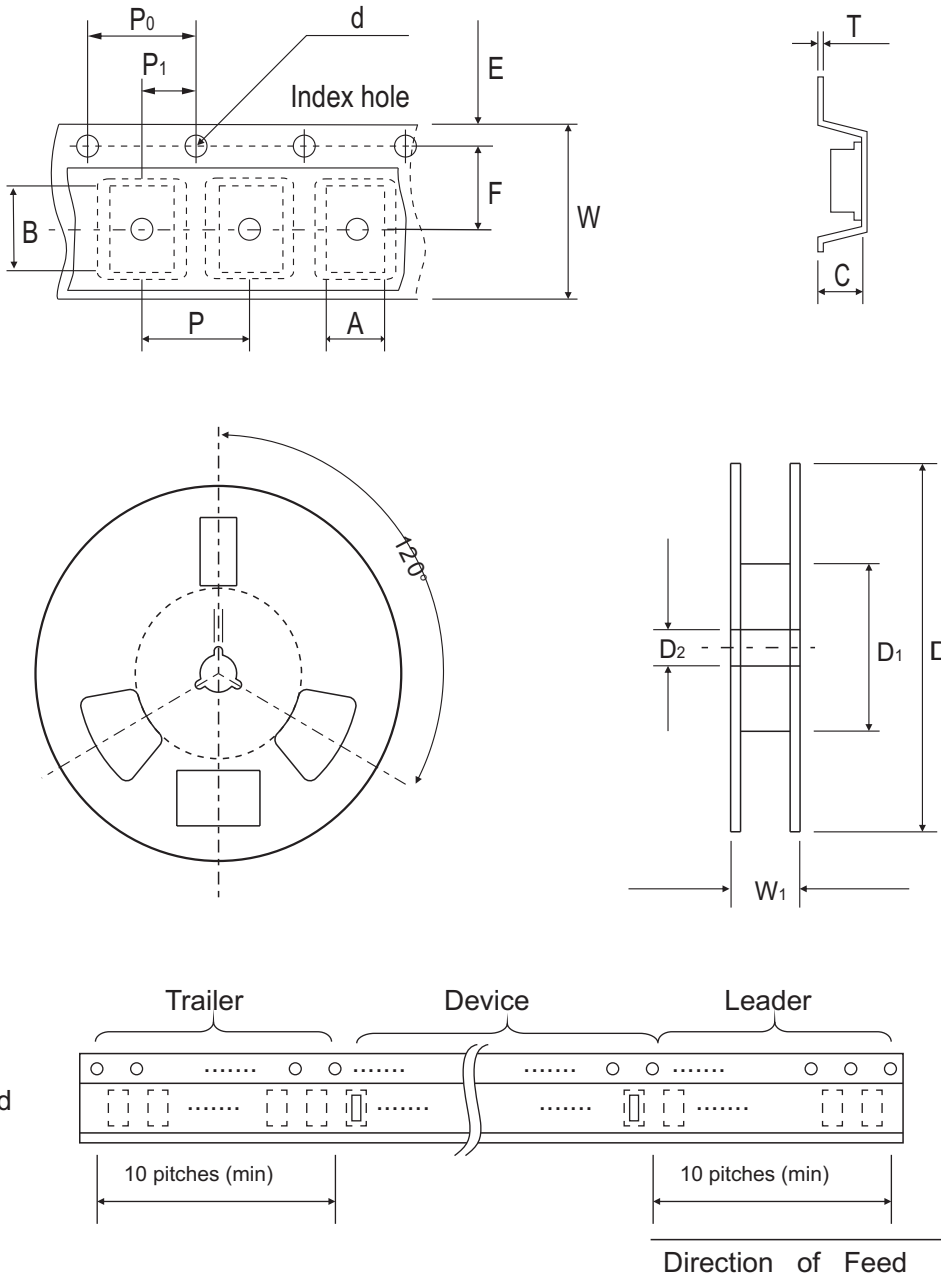
## Electrical Characteristics (ATV06B5V0-HF Thru. ATV06B441-HF)

| Part No.         | Breakdown voltage<br>V <sub>BR</sub> @ I <sub>T</sub> |             |                        | Maximum<br>Reverse<br>Leakage<br>@V <sub>RWM</sub><br>I <sub>R</sub> (uA) | Working<br>Peak<br>Reverse<br>Voltage<br>V <sub>RWM</sub> (V) | Maximum<br>Reverse<br>Surge<br>Current<br>I <sub>PP</sub> (A) | Maximum<br>Clamping<br>Voltage<br>@I <sub>PP</sub><br>V <sub>C</sub> (V) | Device<br>Marking<br>Code |    |
|------------------|---|-------------|------------------------|---|---|---|--|---------------------------|----|
|                  | Min.<br>(V)   | Max.<br>(V) | I <sub>T</sub><br>(mA) |   |   |   |  | UNI                       | BI |
| ATV06B131J(B)-HF | 144.0   | 159.0       | 1                      | 1.0   | 130.0   | 2.87  | 209.0  | PK                        | EK |
| ATV06B141J(B)-HF | 155.0   | 171.0       | 1                      | 1.0   | 140.0   | 2.65  | 226.8  | PB                        | EB |
| ATV06B151J(B)-HF | 167.0   | 185.0       | 1                      | 1.0   | 150.0   | 2.47  | 243.0  | PM                        | EM |
| ATV06B161J(B)-HF | 178.0   | 197.0       | 1                      | 1.0   | 160.0   | 2.32  | 259.0  | PP                        | EP |
| ATV06B171J(B)-HF | 189.0   | 209.0       | 1                      | 1.0   | 170.0   | 2.18  | 275.0  | PR                        | ER |
| ATV06B181J(B)-HF | 200.0   | 220.0       | 1                      | 1.0   | 180.0   | 2.06  | 291.6  | PT                        | ET |
| ATV06B191J(B)-HF | 211.0   | 232.0       | 1                      | 1.0   | 190.0   | 1.95  | 307.8  | PV                        | EV |
| ATV06B201J(B)-HF | 224.0   | 247.0       | 1                      | 1.0   | 200.0   | 1.85  | 324.0  | PW                        | EW |
| ATV06B221J(B)-HF | 246.0   | 272.0       | 1                      | 1.0   | 220.0   | 1.69  | 356.0  | PX                        | EX |
| ATV06B251J(B)-HF | 279.0   | 309.0       | 1                      | 1.0   | 250.0   | 1.48  | 405.0  | PZ                        | EZ |
| ATV06B301J(B)-HF | 335.0   | 371.0       | 1                      | 1.0   | 300.0   | 1.23  | 486.0  | QE                        | FE |
| ATV06B351J(B)-HF | 391.0   | 432.0       | 1                      | 1.0   | 350.0   | 1.06  | 567.0  | QG                        | FG |
| ATV06B401J(B)-HF | 447.0   | 494.0       | 1                      | 1.0   | 400.0   | 0.93  | 648.0  | QK                        | FK |
| ATV06B441J(B)-HF | 492.0   | 543.0       | 1                      | 1.0   | 440.0   | 0.84  | 713.0  | QM                        | FM |

Note:

- 1) Suffix J denotes 5% tolerance devices.
- 2) Suffix B after part number to specify Bi-directional devices.
- 3) For Bi-Directional devices having V<sub>R</sub> of 10 volts and under, the I<sub>R</sub> limit is double.

## Reel Taping Specification



| DO-214AA<br>(SMB) | SYMBOL | A                 | B                 | C           | d                 | D      | D1          | D2                |
|-------------------|--------|-------------------|-------------------|-------------|-------------------|--------|-------------|-------------------|
|                   | (mm)   | $3.67 \pm 0.10$   | $5.69 \pm 0.10$   | 4.50 (max)  | $1.55 \pm 0.10$   | 330.00 | 50.00 (min) | $13.00 \pm 0.20$  |
|                   | (inch) | $0.144 \pm 0.004$ | $0.224 \pm 0.004$ | 0.177 (max) | $0.061 \pm 0.004$ | 13.000 | 1.969 (min) | $0.512 \pm 0.008$ |

| DO-214AA<br>(SMB) | SYMBOL | E                 | F                 | P                 | P0                | P1                | W                 | W1          |
|-------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|
|                   | (mm)   | $1.75 \pm 0.10$   | $5.50 \pm 0.05$   | $8.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.05$   | $12.00 \pm 0.30$  | 18.40 (max) |
|                   | (inch) | $0.069 \pm 0.004$ | $0.217 \pm 0.002$ | $0.315 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.002$ | $0.472 \pm 0.012$ | 0.724 (max) |

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