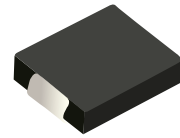


FEATURES

- | Low profile package
- | Ideal for automated placement
- | 3000 Watt peak pulse power capability with a 10/1000µs waveform
- | For surface mounted applicatons to optimize board space
- | Excellent clamping capability
- | Very fast response time
- | Low incremental surge resistance



DO-214AB(SMC)



Uni-directionnal



Bi-directionnal

APPLICATIONS

- | Power supply protection
- | Automotive application
- | Industrial application
- | Power management

APPROVALS

| | |
|-------------|------------------------------------|
| RoHS | Compliance with 2011/65/EU |
| HF | Compliance with IEC61249-2-21:2003 |

MAXIMUM RATINGS (T_A=25°C)

| Parameter | Symbo | Value | Unit |
|-------------------------------------------------------------------------------------------|------------------|-------|-------|
| Peak Pulse Power Dissipation on 10/1000us waveform (Note1, Note2). | P _{PPM} | 3000 | Watts |
| Steady State Power Dissipation at T _L =50°C, Lead lengths.375"(9.5mm) (Note2) | P _D | 6.5 | Watts |

- Notes :** 1.Non-repetitive current pulse,T_A=25°C.
 2.Mounted on 5.0mm*5.0mm (0.03mm thick) Copper Pads to each terminal.

THERMAL CONSIDERATIONS

| Parameter | Symbol | Value | Unit |
|----------------------------------------|------------------|-------------|------|
| Operating Junction Temperature | T _J | -55 to +150 | °C |
| Storage Temperature Range | T _{STG} | -55 to +150 | °C |
| Junction to Ambient on printed circuit | R _{θJA} | 75 | °C/W |

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

| Part Number | | Device Marking Code | | Reverse Stand-off Voltage | Breakdown Voltage Min.@I _T | Breakdown Voltage Max.@I _T | Test Current | Maximum Clamping Voltage @I _{PP} | Peak Pulse Current | Reverse Leakage @V _{RWM} |
|-------------|-----------|---------------------|-----|---------------------------|---------------------------------------|---------------------------------------|---------------------|-------------------------------------------|---------------------|-----------------------------------|
| Uni-Polar | Bi-Polar | Uni | Bi | V _{RWM} (V) | V _{BR} (V) | V _{BR} (V) | I _T (mA) | V _C (V) | I _{PP} (A) | I _R (uA) |
| SMDJ5.0A | SMDJ5.0CA | RDE | DDE | 5.0 | 6.4 | 7.0 | 10 | 9.2 | 326.1 | 800 |
| SMDJ6.0A | SMDJ6.0CA | RDG | DDG | 6.0 | 6.67 | 7.37 | 10 | 10.3 | 291.3 | 800 |
| SMDJ6.5A | SMDJ6.5CA | RDK | DDK | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 267.9 | 500 |
| SMDJ7.0A | SMDJ7.0CA | PDM | DDM | 7.0 | 7.78 | 8.60 | 10 | 12.0 | 250.0 | 200 |
| SMDJ7.5A | SMDJ7.5CA | PDP | DDP | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 232.6 | 100 |
| SMDJ8.0A | SMDJ8.0CA | PDR | DDR | 8.0 | 8.89 | 9.83 | 1 | 13.6 | 220.6 | 50 |
| SMDJ8.5A | SMDJ8.5CA | PDT | DDT | 8.5 | 9.44 | 10.4 | 1 | 14.4 | 208.3 | 20 |
| SMDJ9.0A | SMDJ9.0CA | PDV | DDV | 9.0 | 10.0 | 11.1 | 1 | 15.4 | 194.8 | 10 |
| SMDJ10A | SMDJ10CA | PDX | DDX | 10.0 | 11.1 | 12.3 | 1 | 17.0 | 176.5 | 5 |
| SMDJ11A | SMDJ11CA | PDZ | DDZ | 11.0 | 12.2 | 13.5 | 1 | 18.2 | 164.8 | 2 |
| SMDJ12A | SMDJ12CA | PEE | DEE | 12.0 | 13.3 | 14.7 | 1 | 19.9 | 150.8 | 2 |
| SMDJ13A | SMDJ13CA | PEG | DEG | 13.0 | 14.4 | 15.9 | 1 | 21.5 | 139.5 | 2 |
| SMDJ14A | SMDJ14CA | PEK | DEK | 14.0 | 15.6 | 17.2 | 1 | 23.2 | 129.3 | 2 |
| SMDJ15A | SMDJ15CA | PEM | DEM | 15.0 | 16.7 | 18.5 | 1 | 24.4 | 123.0 | 2 |
| SMDJ16A | SMDJ16CA | PEP | DEP | 16.0 | 17.8 | 19.7 | 1 | 26.0 | 115.4 | 2 |
| SMDJ17A | SMDJ17CA | PER | DER | 17.0 | 18.9 | 20.9 | 1 | 27.6 | 108.7 | 2 |
| SMDJ18A | SMDJ18CA | PET | DET | 18.0 | 20.0 | 22.1 | 1 | 29.2 | 102.7 | 2 |
| SMDJ20A | SMDJ20CA | PEV | DEV | 20.0 | 22.2 | 24.5 | 1 | 32.4 | 92.6 | 2 |
| SMDJ22A | SMDJ22CA | PEX | DEX | 22.0 | 24.4 | 26.9 | 1 | 35.5 | 84.5 | 2 |
| SMDJ24A | SMDJ24CA | PEZ | DEZ | 24.0 | 26.7 | 29.5 | 1 | 38.9 | 77.1 | 2 |
| SMDJ26A | SMDJ26CA | PFE | DFE | 26.0 | 28.9 | 31.9 | 1 | 42.1 | 71.3 | 2 |
| SMDJ28A | SMDJ28CA | PFG | DFG | 28.0 | 31.1 | 34.4 | 1 | 45.4 | 66.1 | 2 |
| SMDJ30A | SMDJ30CA | PFK | DFK | 30.0 | 33.3 | 36.8 | 1 | 48.4 | 62.0 | 2 |
| SMDJ33A | SMDJ33CA | PFM | DFM | 33.0 | 36.7 | 40.6 | 1 | 53.3 | 56.3 | 2 |
| SMDJ36A | SMDJ36CA | PFP | DFP | 36.0 | 40.0 | 44.2 | 1 | 58.1 | 51.6 | 2 |
| SMDJ40A | SMDJ40CA | PFR | DFR | 40.0 | 44.4 | 49.1 | 1 | 64.5 | 46.5 | 2 |
| SMDJ43A | SMDJ43CA | PFT | DFT | 43.0 | 47.8 | 52.8 | 1 | 69.4 | 43.2 | 2 |
| SMDJ45A | SMDJ45CA | PFV | DFV | 45.0 | 50.0 | 55.3 | 1 | 72.7 | 41.3 | 2 |
| SMDJ48A | SMDJ48CA | PFX | DFX | 48.0 | 53.3 | 58.9 | 1 | 77.4 | 38.8 | 2 |
| SMDJ51A | SMDJ51CA | PFZ | DFZ | 51.0 | 56.7 | 62.7 | 1 | 82.4 | 36.4 | 2 |
| SMDJ54A | SMDJ54CA | RGE | DGE | 54.0 | 60.0 | 66.3 | 1 | 87.1 | 34.4 | 2 |
| SMDJ58A | SMDJ58CA | PGG | DGG | 58.0 | 64.4 | 71.2 | 1 | 93.6 | 32.1 | 2 |

| Part Number | | Device Marking Code | | Reverse Stand-off Voltage | Breakdown Voltage Min.@I _T | Breakdown Voltage Max.@I _T | Test Current | Maximum Clamping Voltage @I _{PP} | Peak Pulse Current | Reverse Leakage @V _{RWM} |
|-------------|-----------|---------------------|-----|---------------------------|---------------------------------------|---------------------------------------|---------------------|-------------------------------------------|---------------------|-----------------------------------|
| Uni-Polar | Bi-Polar | Uni | Bi | V _{RWM} (V) | V _{BR} (V) | V _{BR} (V) | I _T (mA) | V _C (V) | I _{PP} (A) | I _R (uA) |
| SMDJ60A | SMDJ60CA | PGK | DGK | 60.0 | 66.7 | 73.7 | 1 | 96.8 | 31.0 | 2 |
| SMDJ64A | SMDJ64CA | PGM | DGM | 64.0 | 71.1 | 78.6 | 1 | 103.0 | 29.1 | 2 |
| SMDJ70A | SMDJ70CA | PGP | DGP | 70.0 | 77.8 | 86.0 | 1 | 113.0 | 26.5 | 2 |
| SMDJ75A | SMDJ75CA | PGR | DGR | 75.0 | 83.3 | 92.1 | 1 | 121.0 | 24.8 | 2 |
| SMDJ78A | SMDJ78CA | PGT | DGT | 78.0 | 86.7 | 95.8 | 1 | 126.0 | 23.8 | 2 |
| SMDJ85A | SMDJ85CA | PGV | DGV | 85.0 | 94.4 | 104.0 | 1 | 137.0 | 21.9 | 2 |
| SMDJ90A | SMDJ90CA | PGX | DGX | 90.0 | 100.0 | 111.0 | 1 | 146.0 | 20.5 | 2 |
| SMDJ100A | SMDJ100CA | PGZ | DGZ | 100.0 | 111.0 | 123.0 | 1 | 162.0 | 18.5 | 2 |
| SMDJ110A | SMDJ110CA | PHE | DHE | 110.0 | 122.0 | 135.0 | 1 | 177.0 | 16.9 | 2 |
| SMDJ120A | SMDJ120CA | PHG | DHG | 120.0 | 133.0 | 147.0 | 1 | 193.0 | 15.5 | 2 |
| SMDJ130A | SMDJ130CA | PHK | DHK | 130.0 | 144.0 | 159.0 | 1 | 209.0 | 14.4 | 2 |
| SMDJ150A | SMDJ150CA | PHM | DHM | 150.0 | 167.0 | 185.0 | 1 | 243.0 | 12.3 | 2 |
| SMDJ160A | SMDJ160CA | PHP | DHP | 160.0 | 178.0 | 197.0 | 1 | 259.0 | 11.6 | 2 |
| SMDJ170A | SMDJ170CA | PHR | DHR | 170.0 | 189.0 | 209.0 | 1 | 275.0 | 10.9 | 2 |
| SMDJ180A | SMDJ180CA | PHT | DHT | 180.0 | 201.0 | 222.0 | 1 | 292.0 | 10.3 | 2 |
| SMDJ190A | SMDJ190CA | PHU | DHU | 190.0 | 209.0 | 243.0 | 1 | 308.0 | 9.7 | 2 |
| SMDJ200A | SMDJ200CA | PHV | DHV | 200.0 | 224.0 | 247.0 | 1 | 324.0 | 9.3 | 2 |
| SMDJ210A | SMDJ210CA | PHW | DHW | 210.0 | 231.0 | 269.0 | 1 | 340.0 | 8.8 | 2 |
| SMDJ220A | SMDJ220CA | PKE | DKE | 220.0 | 246.0 | 272.0 | 1 | 356.0 | 8.4 | 2 |
| SMDJ250A | SMDJ250CA | PKG | DKG | 250.0 | 279.0 | 309.0 | 1 | 405.0 | 7.4 | 2 |
| SMDJ300A | SMDJ300CA | PKK | DKK | 300.0 | 335.0 | 371.0 | 1 | 486.0 | 6.2 | 2 |
| SMDJ350A | SMDJ350CA | PKM | DKM | 350.0 | 391.0 | 432.0 | 1 | 567.0 | 5.3 | 2 |
| SMDJ400A | SMDJ400CA | PKP | DKP | 400.0 | 447.0 | 494.0 | 1 | 648.0 | 4.6 | 2 |
| SMDJ440A | SMDJ440CA | PKR | DKR | 440.0 | 492.0 | 543.0 | 1 | 713.0 | 4.2 | 2 |

CHARACTERISTIC CURVES

TVS Transients Clamping Waveform



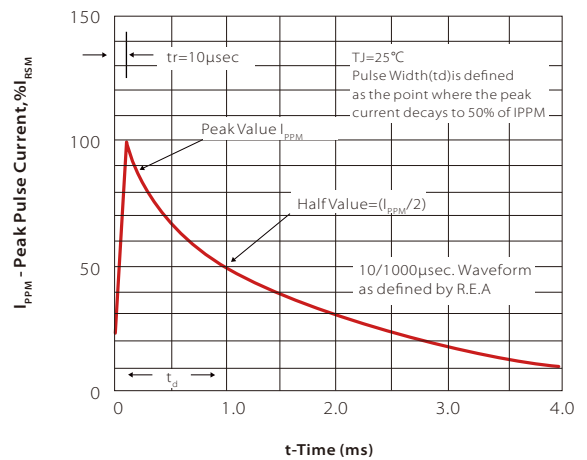
Peak Pulse Power Rating Curve

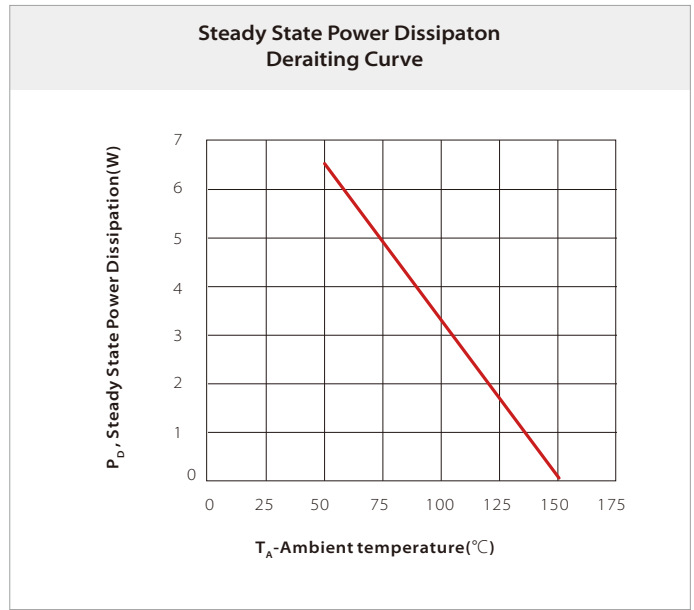


Pulse Derating Curve



Pulse Waveform





SOLDERING PARAMETERS

| Reflow Condition | | Lead-free assembly |
|--------------------------------------------------------|----------------------------------|--------------------|
| Pre Heat | Temperature Max ($T_{s(min)}$) | 150°C |
| | Temperature Max ($T_{s(max)}$) | 200°C |
| | Time (min to max) (t_2) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp (T_L) to peak) | | 3°C/second max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/second max |
| Reflow | Temperature (T_L) (Liquidus) | 217°C |
| | Time (min to max) (t_1) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260°C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes max. |
| Do not exceed | | 260°C |



DO-214AB(SMC) PACKAGE INFORMATION



| Ref. | Millimeters | | Inches | |
|------|-------------|------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.80 | 3.20 | 0.110 | 0.126 |
| B | 6.60 | 7.20 | 0.260 | 0.283 |
| C | 5.70 | 6.10 | 0.224 | 0.240 |
| D | 2.15 | 2.75 | 0.085 | 0.108 |
| E | 1.00 | 1.60 | 0.039 | 0.063 |
| F | 0.02 | 0.20 | 0.000 | 0.008 |
| G | 7.60 | 8.00 | 0.299 | 0.315 |
| H | 0.15 | 0.30 | 0.006 | 0.012 |

RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters | | Inches | |
|------|-------------|------|----------|-------|
| | Min. | Max. | Min. | Max. |
| A | 3.30 | - | 0.129 | - |
| B | 2.40 | - | 0.094 | - |
| C | - | 4.20 | - | 0.165 |
| D | 2.40 | - | 0.094 | - |
| E | 8.20REF | | 0.323REF | |

ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|-------------|-------------------|----------|-----------|
| SMDJxx(C)A | DO-214AB(SMC) | 3000PCS | 13" |

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