



Features

- 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

IEC Compatibility (EN61000-4)

- IEC 61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 9A (8/20µs)



SOD-523

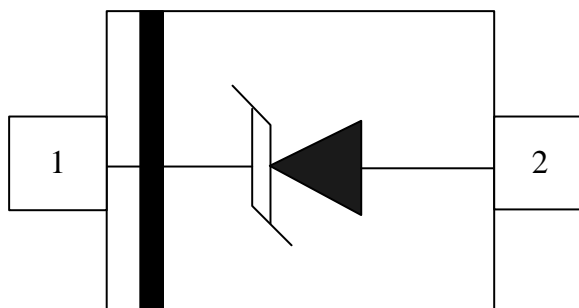
Mechanical Characteristics

- 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

Applications

- 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

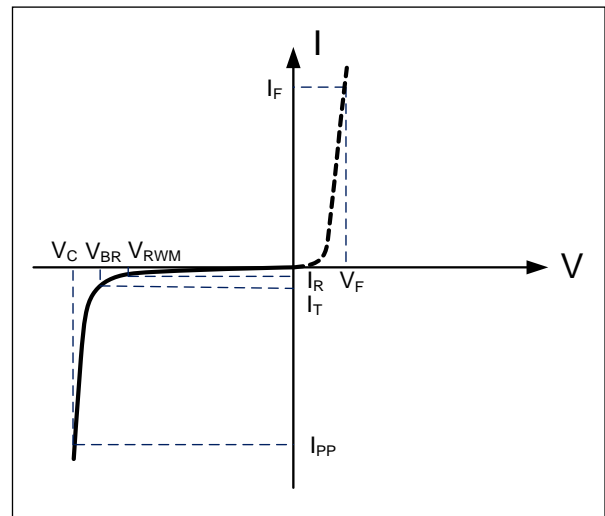
Schematic & PIN Configuration



| Absolute Maximum Rating | | | |
|--|---------------|--------------|--------------|
| Rating | Symbol | Value | Units |
| Peak Pulse Power ($t_p=8/20\mu s$) | P_{PP} | 504 | Watts |
| Peak Pulse Current ($t_p=8/20\mu s$) | I_{pp} | 9 | A |
| Operating Temperature | T_J | -55 to + 125 | °C |
| Storage Temperature | T_{STG} | -55 to +150 | °C |

Electrical Parameters (T=25°C)

| Symbol | Parameter |
|---------------|-------------------------------------|
| I_{PP} | Reverse Peak Pulse Current |
| V_C | Clamping Voltage @ I_{PP} |
| V_{RWM} | Reverse Stand-Off Voltage |
| I_R | Reverse Leakage Current @ V_{RWM} |
| V_{BR} | Breakdown Voltage @ I_T |
| I_T | Test Current |
| I_F | Forward Current |
| V_F | Forward Voltage @ I_F |



Electrical Characteristics

| DW24D5-AT-E | | | | | | |
|-----------------------------------|---------------|---------------------------------------|----------------|----------------|----------------|--------------|
| Parameter | Symbol | Conditions | Minimum | Typical | Maximum | Units |
| Reverse Stand-Off Voltage | V_{RWM} | | | | 24 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T=1mA$ | 26.7 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM}=24V, T=25^\circ C$ | | | 500 | nA |
| Forward Voltage | V_F | $I_F=10mA$ | 0.6 | | 1 | V |
| Clamping Voltage | V_C | $I_{PP} = 9A, t_p = 8/20\mu s$ | | 52 | 56 | V |
| Dynamic Resistance ^{1,2} | R_{DYN} | TLP=0.2/100ns | | 0.4 | | Ω |
| ESD Clamping Voltage ¹ | V_C | $I_{PP} = 4A, t_p = 0.2/100ns$ (TLP) | | 33 | | V |
| ESD Clamping Voltage ¹ | V_C | $I_{PP} = 16A, t_p = 0.2/100ns$ (TLP) | | 37.7 | | V |
| Junction Capacitance | C_j | $V_R = 0V, f = 1MHz$ | | 45 | 50 | pF |

Notes : 1、TLP Setting : $t_p=100ns, t_r=0.2ns, I_{TLP}$ and V_{TLP} sample window: $t_1=70ns$ to $t_2=90ns$.

2、Dynamic resistance calculated from $I_{PP}=4A$ to $I_{PP}=16A$ using "Best Fit".

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Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

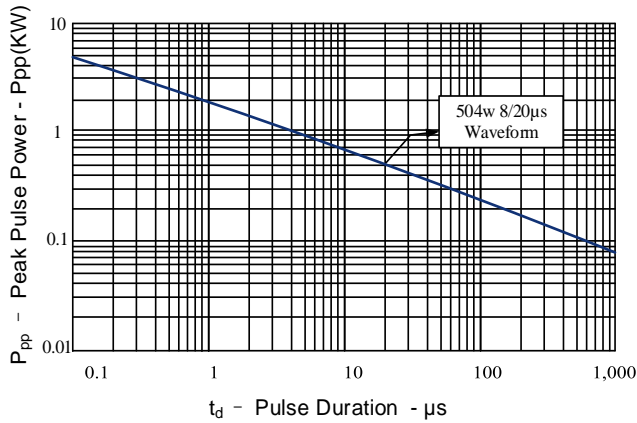


Figure 2: Power Derating Curve

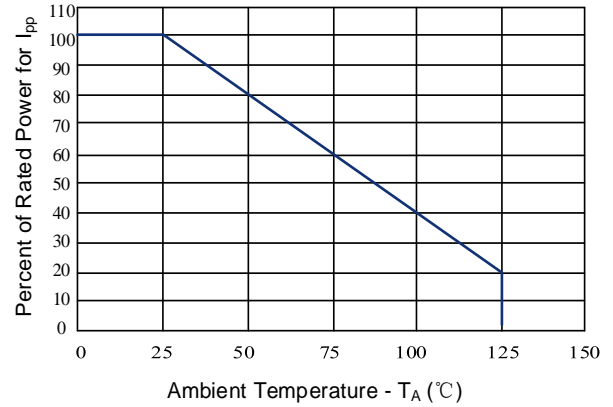


Figure 3: Clamping Voltage vs. Peak Pulse Current

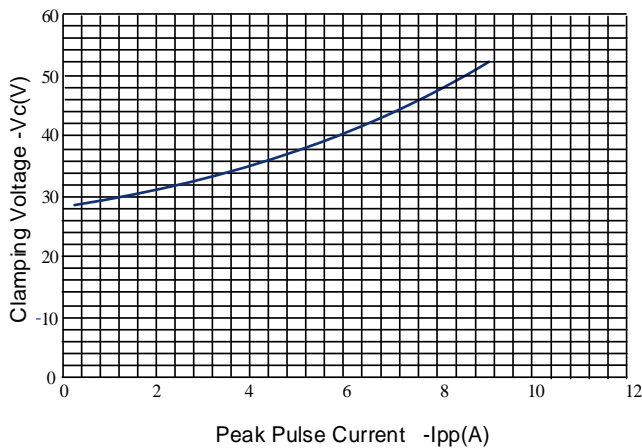


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

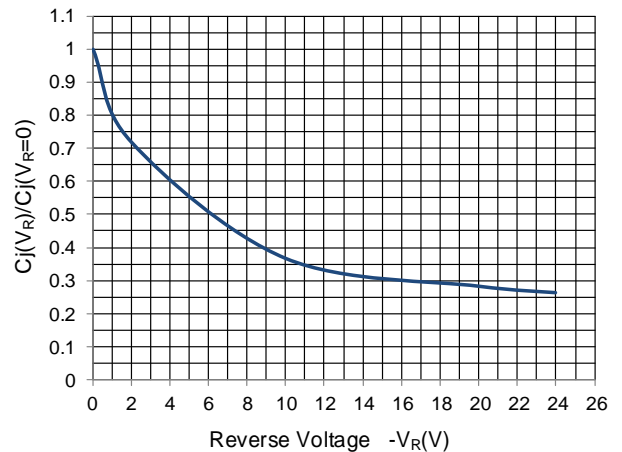


Figure 5: 8/20μs Pulse Waveform

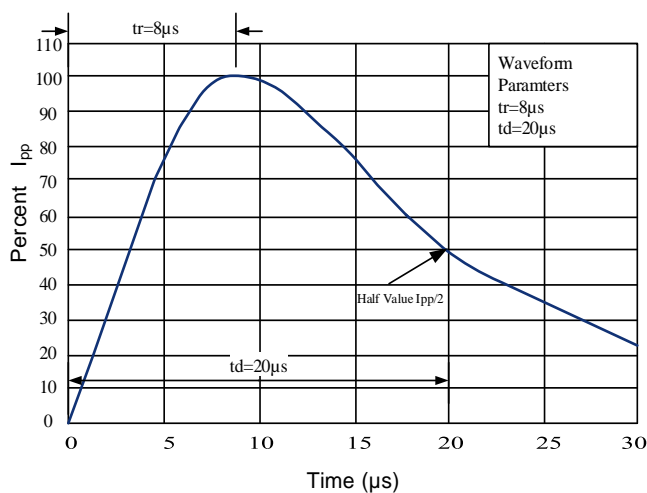
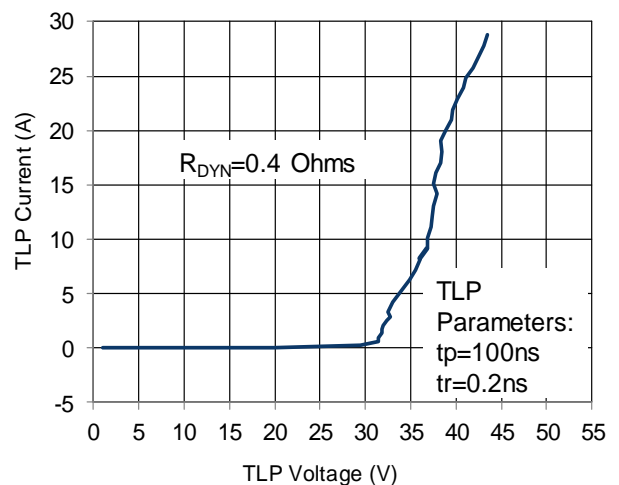
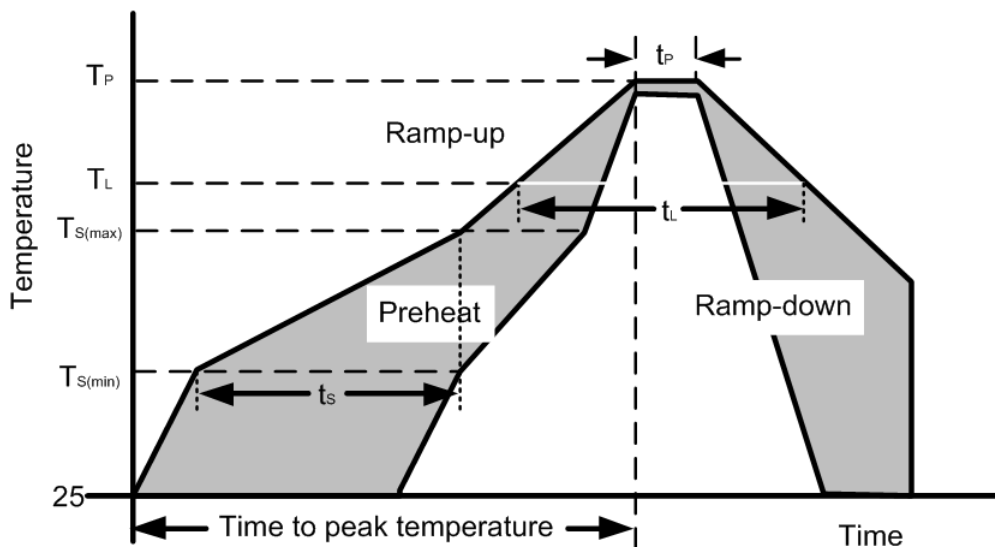


Figure 6: TLP I-V Curve

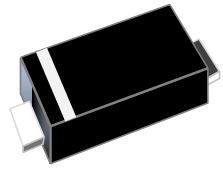
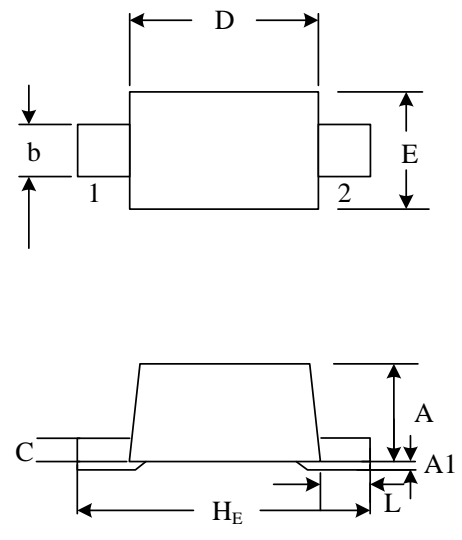
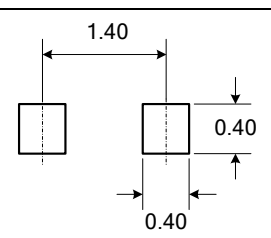


Soldering Parameters


| Reflow Condition | | Pb – Free assembly |
|--|----------------------------------|--------------------|
| Pre Heat | Temperature Min ($T_{S(min)}$) | 150°C |
| | Temperature Max ($T_{S(max)}$) | 200°C |
| | Time (min to max) (t_s) | 60 – 190 secs |
| Average ramp up rate (Liquidus Temp) (T_L) to peak | | 5°C/second max |
| $T_{S(max)}$ to T_L —Ramp-up Rate | | 5°C/second max |
| Reflow | Temperature (T_L) (Liquidus) | 217°C |
| | Temperature (t_L) | 60 – 150 seconds |
| Peak Temperature (T_P) | | 260+0/-5 °C |
| Time within actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 5°C/second max |
| Time 25°C to peak Temperature (T_P) | | 8 minutes Max. |
| Do not exceed | | 280°C |



Outline Drawing –SOD-523

| PACKAGE OUTLINE | | 
SOD-523 | | | |
|--|-------------|--|--------|-------|--|
|  | | DIMENSIONS | | | |
| SYMBOL | MILLIMETERS | | INCHES | | |
| | MIN | MAX | MIN | MAX | |
| A | 0.50 | 0.70 | 0.020 | 0.028 | |
| A1 | 0.00 | 0.07 | 0.000 | 0.003 | |
| b | 0.25 | 0.35 | 0.010 | 0.014 | |
| C | 0.07 | 0.20 | 0.003 | 0.008 | |
| D | 1.10 | 1.30 | 0.043 | 0.051 | |
| E | 0.70 | 0.90 | 0.028 | 0.035 | |
| H _E | 1.50 | 1.70 | 0.059 | 0.067 | |
| L | 0.15 | 0.25 | 0.006 | 0.010 | |
|  <p style="text-align: center;">DIMENSIONS: MILLIMETERS</p> | | Notes:
Controlling Dimension: Millimeter. | | | |

Marking Codes

| Part Number | Marking Code |
|-------------|---|
| DW24D5-AT-E |  |

Package Information

Qty: 5k/Reel