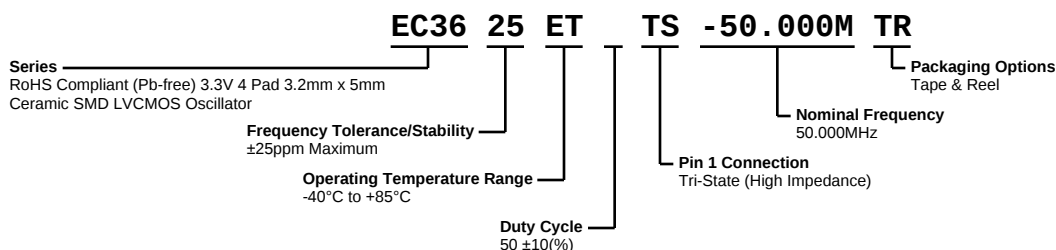


# EC3625ETTS-50.000M TR



## ELECTRICAL SPECIFICATIONS

|                                       |                                                                                                                                                                                                                                                                          |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal Frequency                     | 50.000MHz                                                                                                                                                                                                                                                                |
| Frequency Tolerance/Stability         | $\pm 25$ ppm Maximum (Inclusive of all conditions: Calibration Tolerance at $25^{\circ}\text{C}$ , Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year Aging at $25^{\circ}\text{C}$ , Shock, and Vibration) |
| Operating Temperature Range           | $-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$                                                                                                                                                                                                                           |
| Supply Voltage                        | 3.3Vdc $\pm 10\%$                                                                                                                                                                                                                                                        |
| Input Current                         | 35mA Maximum                                                                                                                                                                                                                                                             |
| Output Voltage Logic High (Voh)       | 90% of Vdd Minimum ((IOH = -4mA))                                                                                                                                                                                                                                        |
| Output Voltage Logic Low (Vol)        | 10% of Vdd Maximum ((IOL = +4mA))                                                                                                                                                                                                                                        |
| Rise/Fall Time                        | 4nSec Maximum (Measured at 20% to 80% of waveform)                                                                                                                                                                                                                       |
| Duty Cycle                            | $50 \pm 10(\%)$ (Measured at 50% of waveform)                                                                                                                                                                                                                            |
| Load Drive Capability                 | 15pF Maximum                                                                                                                                                                                                                                                             |
| Output Logic Type                     | CMOS                                                                                                                                                                                                                                                                     |
| Pin 1 Connection                      | Tri-State (High Impedance)                                                                                                                                                                                                                                               |
| Tri-State Input Voltage (Vih and Vil) | 90% of Vdd Minimum or No Connect to Enable Output, 10% of Vdd Maximum to Disable Output (High Impedance)                                                                                                                                                                 |
| Standby Current                       | 10 $\mu\text{A}$ Maximum (Disabled Output: High Impedance)                                                                                                                                                                                                               |
| RMS Phase Jitter                      | 1pSec Maximum (12kHz to 20MHz offset frequency)                                                                                                                                                                                                                          |
| Start Up Time                         | 10mSec Maximum                                                                                                                                                                                                                                                           |
| Storage Temperature Range             | $-55^{\circ}\text{C}$ to $+125^{\circ}\text{C}$                                                                                                                                                                                                                          |

## ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

|                              |                                               |
|------------------------------|-----------------------------------------------|
| ESD Susceptibility           | MIL-STD-883, Method 3015, Class 1, HBM: 1500V |
| Fine Leak Test               | MIL-STD-883, Method 1014, Condition A         |
| Flammability                 | UL94-V0                                       |
| Gross Leak Test              | MIL-STD-883, Method 1014, Condition C         |
| Mechanical Shock             | MIL-STD-883, Method 2002, Condition B         |
| Moisture Resistance          | MIL-STD-883, Method 1004                      |
| Moisture Sensitivity         | J-STD-020, MSL 1                              |
| Resistance to Soldering Heat | MIL-STD-202, Method 210, Condition K          |
| Resistance to Solvents       | MIL-STD-202, Method 215                       |
| Solderability                | MIL-STD-883, Method 2003                      |
| Temperature Cycling          | MIL-STD-883, Method 1010, Condition B         |
| Vibration                    | MIL-STD-883, Method 2007, Condition A         |



| PIN | CONNECTION     |
|-----|----------------|
| 1   | Tri-State      |
| 2   | Ground         |
| 3   | Output         |
| 4   | Supply Voltage |

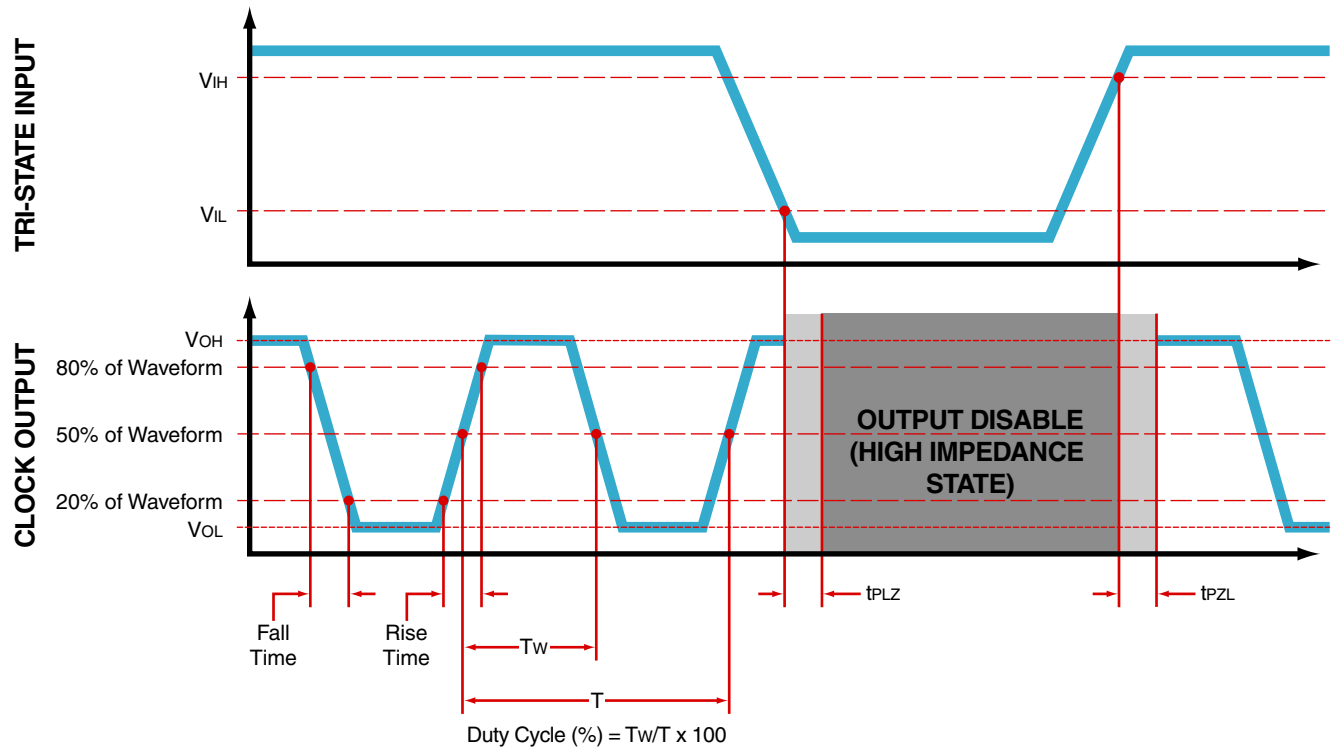
  

| LINE | MARKING                                                                                                                 |
|------|-------------------------------------------------------------------------------------------------------------------------|
| 1    | <b>E50.000</b><br><i>E=Ecliptek Designator</i>                                                                          |
| 2    | <b>XXYYZZ</b><br><i>XX=Ecliptek Manufacturing Code</i><br><i>Y=Last Digit of the Year</i><br><i>ZZ=Week of the Year</i> |

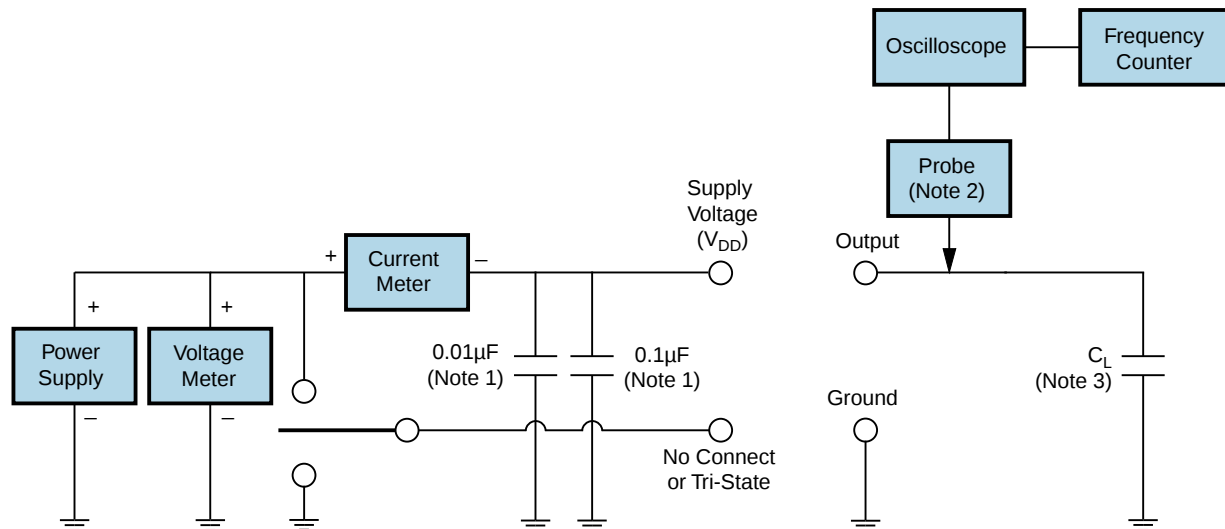
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# EC3625ETTS-50.000M TR

## OUTPUT WAVEFORM & TIMING DIAGRAM



## Test Circuit for CMOS Output



Note 1: An external  $0.1\mu F$  low frequency tantalum bypass capacitor in parallel with a  $0.01\mu F$  high frequency ceramic bypass capacitor close to the package ground and  $V_{DD}$  pin is required.

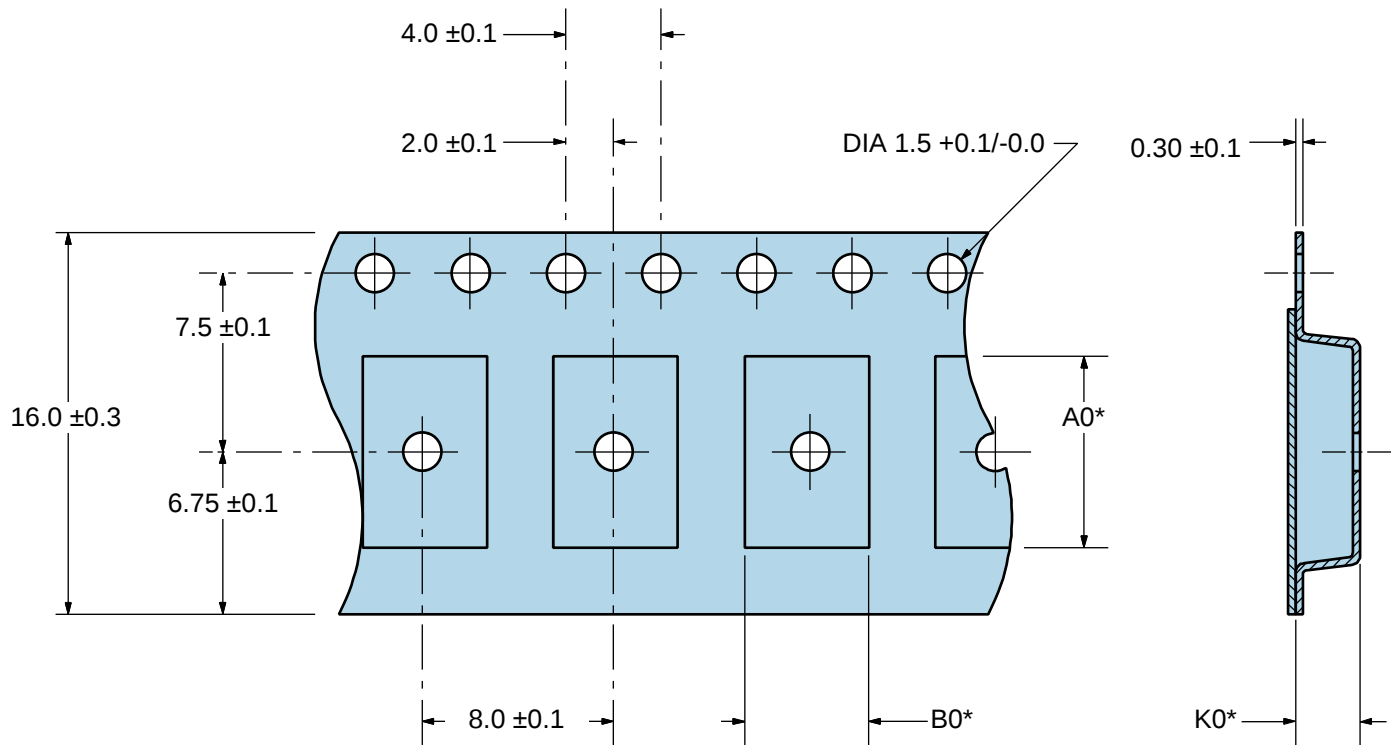
Note 2: A low capacitance ( $<12pF$ ), 10X attenuation factor, high impedance ( $>10M\Omega$ ), and high bandwidth ( $>300MHz$ ) passive probe is recommended.

Note 3: Capacitance value  $C_L$  includes sum of all probe and fixture capacitance.

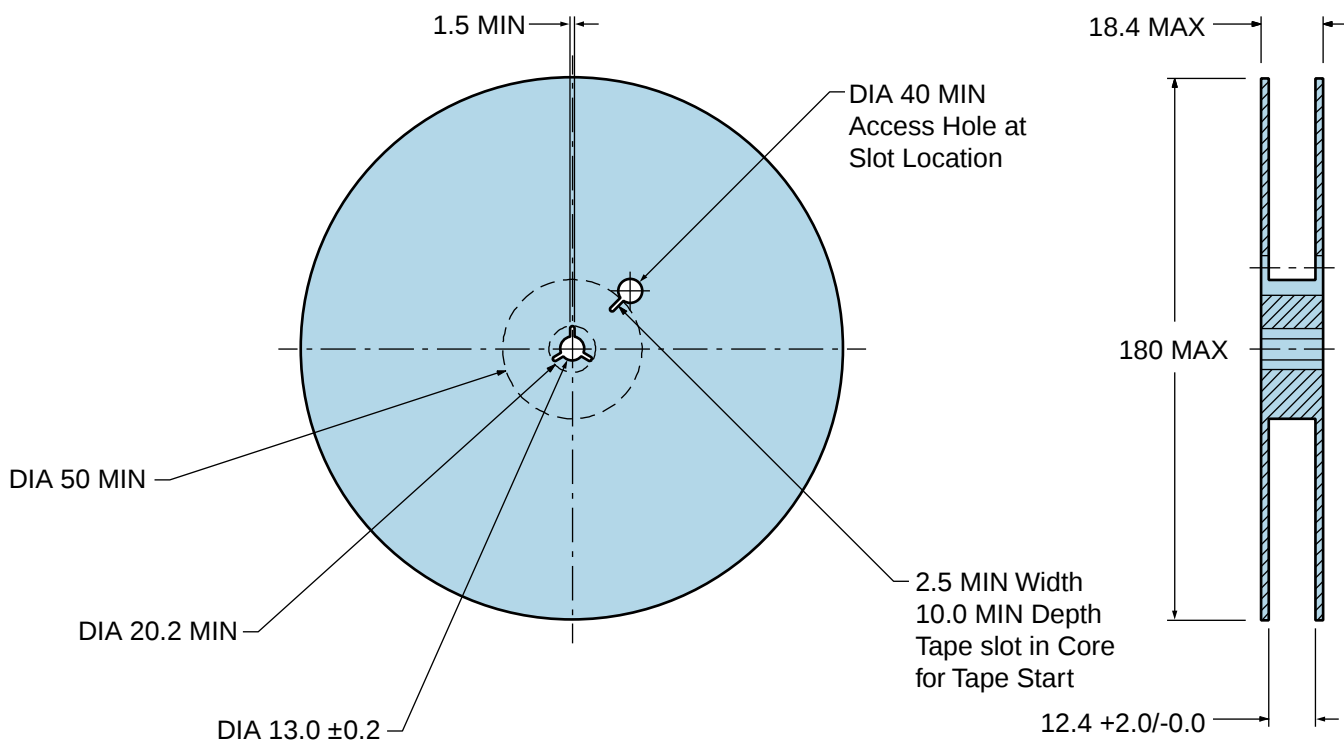
# EC3625ETTS-50.000M TR

## Tape & Reel Dimensions

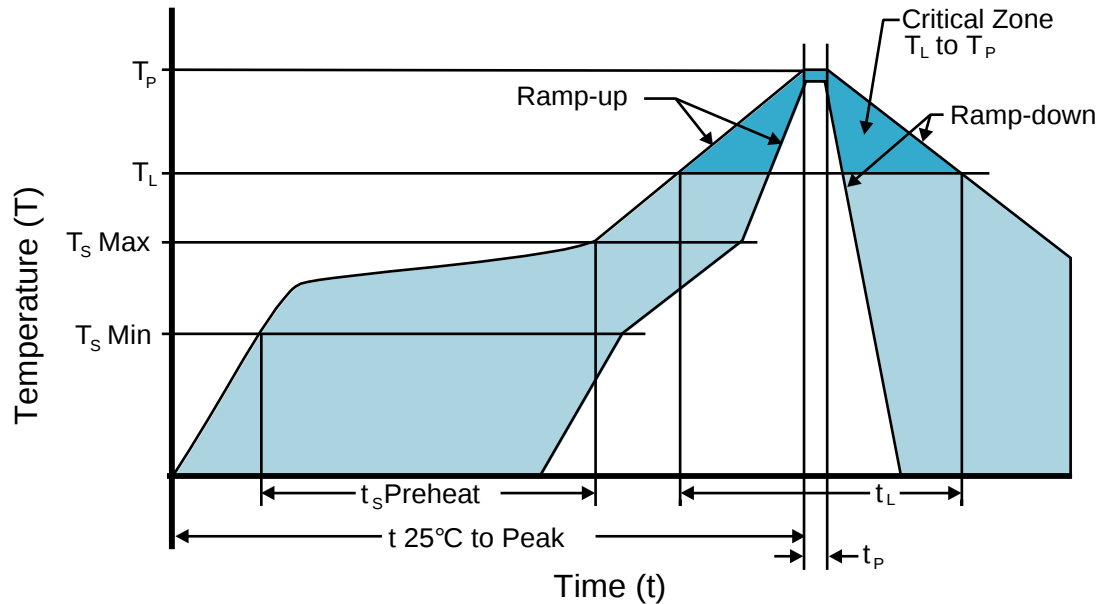
Quantity Per Reel: 1,000 units



\*Compliant to EIA 481A



## Recommended Solder Reflow Methods



### High Temperature Infrared/Convection

|                                   |                    |
|-----------------------------------|--------------------|
| $T_s$ MAX to $T_L$ (Ramp-up Rate) | 3°C/second Maximum |
|-----------------------------------|--------------------|

#### Preheat

|                                    |                  |
|------------------------------------|------------------|
| - Temperature Minimum ( $T_s$ MIN) | 150°C            |
| - Temperature Typical ( $T_s$ TYP) | 175°C            |
| - Temperature Maximum ( $T_s$ MAX) | 200°C            |
| - Time ( $t_s$ MIN)                | 60 - 180 Seconds |

|                                 |                    |
|---------------------------------|--------------------|
| Ramp-up Rate ( $T_L$ to $T_p$ ) | 3°C/second Maximum |
|---------------------------------|--------------------|

#### Time Maintained Above:

|                         |                  |
|-------------------------|------------------|
| - Temperature ( $T_L$ ) | 217°C            |
| - Time ( $t_L$ )        | 60 - 150 Seconds |

|                            |                                      |
|----------------------------|--------------------------------------|
| Peak Temperature ( $T_p$ ) | 260°C Maximum for 10 Seconds Maximum |
|----------------------------|--------------------------------------|

|                                         |               |
|-----------------------------------------|---------------|
| Target Peak Temperature ( $T_p$ Target) | 250°C +0/-5°C |
|-----------------------------------------|---------------|

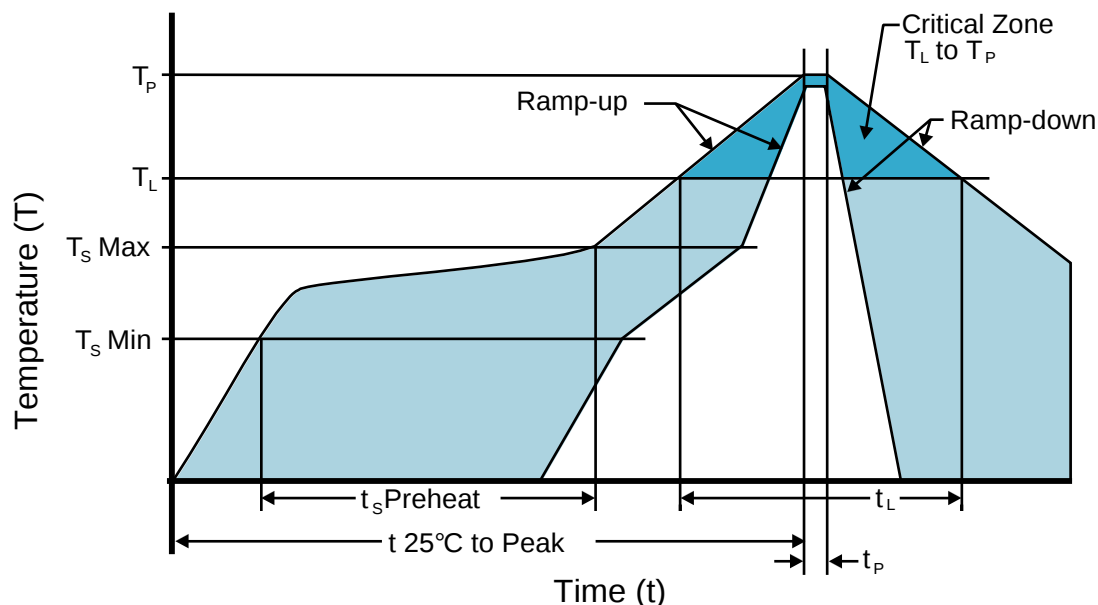
|                                          |                 |
|------------------------------------------|-----------------|
| Time within 5°C of actual peak ( $t_p$ ) | 20 - 40 seconds |
|------------------------------------------|-----------------|

|                |                    |
|----------------|--------------------|
| Ramp-down Rate | 6°C/second Maximum |
|----------------|--------------------|

|                                   |                   |
|-----------------------------------|-------------------|
| Time 25°C to Peak Temperature (t) | 8 minutes Maximum |
|-----------------------------------|-------------------|

|                            |         |
|----------------------------|---------|
| Moisture Sensitivity Level | Level 1 |
|----------------------------|---------|

## Recommended Solder Reflow Methods



### Low Temperature Infrared/Convection 240°C

$T_s$  MAX to  $T_L$  (Ramp-up Rate) 5°C/second Maximum

#### Preheat

- Temperature Minimum ( $T_s$  MIN) N/A
- Temperature Typical ( $T_s$  TYP) 150°C
- Temperature Maximum ( $T_s$  MAX) N/A
- Time ( $t_s$  MIN) 60 - 120 Seconds

Ramp-up Rate ( $T_L$  to  $T_p$ ) 5°C/second Maximum

#### Time Maintained Above:

- Temperature ( $T_L$ ) 150°C
- Time ( $t_L$ ) 200 Seconds Maximum

Peak Temperature ( $T_p$ ) 240°C Maximum

Target Peak Temperature ( $T_p$  Target) 240°C Maximum 1 Time / 230°C Maximum 2 Times

Time within 5°C of actual peak ( $t_p$ ) 10 seconds Maximum 2 Times / 80 seconds Maximum 1 Time

Ramp-down Rate 5°C/second Maximum

Time 25°C to Peak Temperature (t) N/A

Moisture Sensitivity Level Level 1

### Low Temperature Manual Soldering

185°C Maximum for 10 seconds Maximum, 2 times Maximum.

### High Temperature Manual Soldering

260°C Maximum for 5 seconds Maximum, 2 times Maximum.