**PRODUCT OVERVIEW**

The MYSGK02506BRSR is miniature Solid Block type non-isolated DC-DC power converter for embedded applications. The tiny form factor measures only 14.7 x 16.3 x 7.5 mm. The converter have input voltage ranges of 13.5 to 42Vdc and a maximum output current of 6A. Based on a fixed frequency synchronous buck converter switching topology, this high power conversion efficient module features settable output voltage 5 to 25Vdc and On/Off control. This converter also include under voltage lock out (UVLO) and output short circuit protection.

**FEATURES**

- Input Voltage range 13.5 to 42Vdc  
  (Absolute maximum input voltage:50Vdc)
- Settable output voltage range 5 to 25Vdc
- Up to 6A of output current
- Ultra small surface mount package  
  14.7 x 16.3 x 7.5mm
- High efficiency : 98% (at Vo=24Vdc)
- Outstanding thermal derating performance
- Short Circuit Protection
- Programmable UVLO
- On/Off control (Positive logic)
- Operating Temperature range -40 to +85 degC

**TYPICAL APPLICATION**

![Typical unit](image)

Vin | C1 | C2 | C3 | C4 | RUVLO1 | C11 | C12 | Vo
---|----|----|----|----|--------|-----|-----|---
|    |    |    |    |    |        |     |     |   

C1-4,C11 : Ceramic capacitor 4.7μF/50V (GRM31CR71H475KA12L: MURATA)
C12 : Conductive Polymer Hybrid Aluminum Electrolytic Capacitor 68μF/35V  
  (HHXB350ARA680MF80G φ6.3 × L7.7 : NIPPON CHEMI-CON)

http://www.murata.com/products/power

Export Control Code : X0863

MYSGK02506BRSR A05 Page 1 of 18
**PERFORMANCE SPECIFICATIONS SUMMARY AND ORDERING GUIDE**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output</th>
<th>Input</th>
<th>Efficiency (%)</th>
<th>Package (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MYSGK02506BRSR</td>
<td>Vo (Vdc)</td>
<td>Io (A, Max.)</td>
<td>Power (W)</td>
<td>RIN Max. (mV p-p)</td>
</tr>
<tr>
<td>5-25 (typ.: 24V)</td>
<td>6</td>
<td>150</td>
<td>50</td>
<td>±2.0</td>
</tr>
<tr>
<td>MYSGK02506BRSRD</td>
<td>5-25 (typ.: 24V)</td>
<td>6</td>
<td>150</td>
<td>50</td>
</tr>
</tbody>
</table>

1. All specifications are at typical line voltage, Vo = typ. and full load, +25degC unless otherwise noted. Output capacitors are 4.7uF ceramic and 68uF conductive polymer hybrid aluminum electrolytic capacitor. Input capacitors is 4.7uFx4 ceramic and plenty electrolytic capacitors. See detailed specifications. Input and output capacitors are necessary for our test equipment.

2. Use adequate ground plane and copper thickness adjacent to the converter.

**PART NUMBER STRUCTURE**

```
MY  SGK  025  06  BRSR  D
```

- **MY**: Murata products
- **SGK**: Series Name
- **025**: Maximum Output Voltage (025: 25V)
- **06**: Maximum Output Current (06: 6A)
- **BRSR**: Packaging Code
  - Blank: Standard Quantity
  - D: Small Quantity
- **D**: Internal Code

**PRODUCT MARKING**

```
EB  ###
```

```
<table>
<thead>
<tr>
<th>Item</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot No.</td>
<td>(8-digit alphanumeric)</td>
</tr>
<tr>
<td>Product Code</td>
<td>EB</td>
</tr>
<tr>
<td>Internal code</td>
<td>###</td>
</tr>
</tbody>
</table>
```

**http://www.murata.com/products/power**

MYSGK02506BRSR A05 Page 2 of 18
### FUNCTIONAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>ABSOLUTE MAXIMUM RATINGS</th>
<th>Conditions</th>
<th>Minimum</th>
<th>Typical / Nominal</th>
<th>Maximum</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage, Continuous</td>
<td>-0.3</td>
<td></td>
<td>50</td>
<td>Vdc</td>
<td></td>
</tr>
<tr>
<td>EN/UVLO</td>
<td>-0.3</td>
<td></td>
<td>8.8</td>
<td>Vdc</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>Vin = Zero (no power)</td>
<td>-40</td>
<td></td>
<td>-125</td>
<td>degC</td>
</tr>
</tbody>
</table>

Absolute maximums are stress ratings. Exposure of devices to greater than any of these conditions may adversely affect long-term reliability. Proper operation under conditions other than those listed in the Performance/Functional Specifications Table is not implied or recommended.

### INPUT

<table>
<thead>
<tr>
<th>Operating Voltage Range (Vin)</th>
<th>Conditions</th>
<th>Minimum</th>
<th>Typical / Nominal</th>
<th>Maximum</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Startup threshold</td>
<td>Rising input voltage</td>
<td>13.5</td>
<td>36</td>
<td>42</td>
<td>Vdc</td>
</tr>
<tr>
<td>Shutdown threshold</td>
<td>Shutdown input voltage</td>
<td>4.42</td>
<td></td>
<td></td>
<td>Vdc</td>
</tr>
</tbody>
</table>

### FULL LOAD CONDITIONS

| Vin = 36V, Vo = 24V, Io = 6A | 4.06 | A |

### NO LOAD CURRENT

| Vin = 36V, Vo = 24V, Io = 0A | 22 | mA |

### EN/UVLO pin Voltage

| Power ON | 1 | Vdc |
| Power OFF | -0.3 | 0.1 | Vdc |

### GENERAL

| Efficiency | Vin = 36V, Vo = 24V, Io = 6A | 96 | % |

### DYNAMIC CHARACTERISTICS

| Fixed Switching Frequency | 390 | kHz |

### OUTPUT

<table>
<thead>
<tr>
<th>Voltage</th>
<th>RVER = 0Ω</th>
<th>24.12</th>
<th>25</th>
<th>25.88</th>
<th>Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RVER = 86,7Ω</td>
<td>23.16</td>
<td>24</td>
<td>24.84</td>
<td>Vdc</td>
</tr>
<tr>
<td></td>
<td>RVER = 88Ω</td>
<td>17.37</td>
<td>18</td>
<td>18.63</td>
<td>Vdc</td>
</tr>
<tr>
<td></td>
<td>RVER = 1.65kΩ</td>
<td>14.47</td>
<td>15</td>
<td>15.53</td>
<td>Vdc</td>
</tr>
<tr>
<td></td>
<td>RVER = 3.06kΩ</td>
<td>11.58</td>
<td>12</td>
<td>12.42</td>
<td>Vdc</td>
</tr>
<tr>
<td></td>
<td>RVER = OPEN</td>
<td>4.82</td>
<td>5</td>
<td>5.18</td>
<td>Vdc</td>
</tr>
</tbody>
</table>

### Current

| Output Current Range (Io) | Vin > 36V and Vo > 15.53V | 0 | 5 | A |
|                          | Vin=36V or Vo ≤15.53V | 0 | 6 | A |

### Short circuit protection method

| Hiccup current limiting | Non-latching |

### Ripple Voltage

| Vin = 36V, Vo = 24V, Io = 6A | 20 MHz BW | 50 | mV p-p |

### External Output Capacitive

| 60 | 150 | µF |

### MECHANICAL

| Outline Dimensions | 14.7(typ.) x 16.3(typ.) x 7.5(max.) | mm |
| Weight | 3.7 | grams |

### ENVIRONMENTAL

| Operating Ambient Temperature Range | -40 | 50 | degC |

(1)All models are tested and specified with external 4.7µF ceramic and Conductive Polymer Hybrid Aluminum Electrolytic Capacitor 68µF output capacitors and 4.7µFµ4 ceramic and plenty electrolytic external input capacitors. All capacitors are low ESR types. These capacitors are necessary to accommodate our test equipment and may not be required to achieve specified performance in your applications. However, Murata recommends installation of these capacitors. (2)Note that Maximum Power Derating curves indicate an average current at typical input voltage. At higher temperatures and/or no airflow, the converter will tolerate brief full current outputs if the total RMS current over time does not exceed the Derating curve. (3)The On/Off Control Input should use either a switch or an open collector/open drain transistor referenced to GND. A logic gate may also be used by applying appropriate external voltages which do not exceed ±8V. (4)“Hiccup” operation repeatedly attempts to restart the converter with a brief, full-current output. If the short circuit condition still exists, the restart current will be removed and then tried again. This short current pulse prevents overheating and damaging the converter. Once the fault is removed, the converter immediately recovers normal operation. (5)Do not exceed maximum power specifications when adjusting the output trim. (6)The maximum output capacitive loads depend on the Equivalent Series Resistance (ESR) of the external output capacitor and, to a lesser extent, the distance and series impedance to the load. Larger capacitors will reduce output noise but may change the transient response. Newer ceramic capacitors with very low ESR may require lower capacitor values to avoid instability. Thoroughly test your capacitors in the application. Please refer to the Output Capacitive Load Application Note. (7)Do not allow the input voltage to degrade lower than the input under voltage shutdown voltage at all times. Otherwise, you risk having the converter turn off. The under voltage shutdown is not latching and will attempt to recover when the input is brought back into normal operating range.

http://www.murata.com/products/power
PERFORMANCE DATA AND OSCILLOGRAMS OF MYSGK02506BRSR

Efficiency vs. Line Voltage and Load Current @ +25degC. (Vo = 25V)

Vo vs. Line Voltage and Load Current @ +25degC. (Vo = 25V)

On/Off Enable Delay (Vin=36V, Vo=25V, Io=6A) Trace1=Enable, Trace2=Vo, 10ms/div

Output Ripple and Noise (Vin=36V, Vo=25V, Io=6A, Scope BW=20MHz)

Step Load Transient Response (Vin=36V, Vo=25V, Io=3A to 6A, 2.5A/us) Trace 3=Vo, 200mV/div, Trace 4=Io, 5A/div.

Step Load Transient Response (Vin=36V, Vo=25V, Io=3A to 6A, 2.5A/us) Trace 3=Vo, 200mV/div, Trace 4=Io, 5A/div.

http://www.murata.com/products/power
PERFORMANCE DATA AND OSCILLOGRAMS OF MYSGK02506BRSR

Efficiency vs. Line Voltage and Load Current at +25°C. (Vo = 24V)

Vo vs. Line Voltage and Load Current at +25°C. (Vo = 24V)

On/Off Enable Delay (Vin=36V, Vo=24V, Io=6A) Trace1=Enable, Trace2=Vo, 10ms/div

Output Ripple and Noise (Vin=36V, Vo=24V, Io=6A, Scope BW=20MHz)

Step Load Transient Response (Vin=36V, Vo=24V, Io=3A to 6A, 2.5A/us)
Trace 3=Vo, 200mV/div, Trace 4=Io, 5A/div.

Step Load Transient Response (Vin=36V, Vo=24V, Io=3A to 6A, 2.5A/us)
Trace 3=Vo, 200mV/div, Trace 4=Io, 5A/div.
PERFORMANCE DATA AND OSCILLOGRAMS OF MYSGK02506BRSR

Efficiency vs. Line Voltage and Load Current @ +25degC. (Vo = 18V)

Vo vs. Line Voltage and Load Current @ +25degC. (Vo = 18V)

On/Off Enable Delay (Vin=36V, Vo=18V, Io=6A) Trace1=Enable, Trace2=Vo, 10ms/div

Output Ripple and Noise (Vin=36V, Vo=18V, Io=6A, Scope BW=20MHz)

Step Load Transient Response (Vin=36V, Vo=18V, Io=3A to 6A, 2.5A/us)
Trace 3=Vo, 200mV/div, Trace 4=Io, 5A/div.

Step Load Transient Response (Vin=36V, Vo=18V, Io=3A to 6A, 2.5A/us)
Trace 3=Vo, 200mV/div, Trace 4=Io, 5A/div.

http://www.murata.com/products/power
PERFORMANCE DATA AND OSCILLOGRAMS OF MYSGK02506BRSR

Efficiency vs. Line Voltage and Load Current @ +25degC. (Vo = 15V)

Output Ripple and Noise (Vin=36V, Vo=15V, Io=6A, Scope BW=20MHz)

Step Load Transient Response (Vin=36V, Vo=15V, Io=3A to 6A, 2.5A/us) Trace 3=Vo, 200mV/div, Trace 4=Io, 5A/div.

Step Load Transient Response (Vin=36V, Vo=15V, Io=3A to 6A, 2.5A/us) Trace 3=Vo, 200mV/div, Trace 4=Io, 5A/div.

http://www.murata.com/products/power
Performance Data and Oscillograms of MYSGK02506BRSR

- Efficiency vs. Line Voltage and Load Current @ +25degC. \( (V_o = 12V) \)
- Vo vs. Line Voltage and Load Current @ +25degC. \( (V_o = 12V) \)
- On/Off Enable Delay \( (V_{in}=36V, V_o=12V, I_o=6A) \) Trace 1 = Enable, Trace 2 = Vo, 10ms/div
- Output Ripple and Noise \( (V_{in}=36V, V_o=12V, I_o=6A, \text{Scope BW}=20MHz) \)
- Step Load Transient Response \( (V_{in}=36V, V_o=12V, I_o=3A \text{ to } 6A, 2.5A/us) \) Trace 3 = Vo, 200mV/div, Trace 4 = Io, 5A/div.

http://www.murata.com/products/power
PERFORMANCE DATA AND OSCILLOGRAMS OF MYSGK02506BRSR

Efficiency vs. Line Voltage and Load Current @ +25degC. (Vo = 5V)

Vo vs. Line Voltage and Load Current @ +25degC. (Vo = 5V)

On/Off Enable Delay (Vin=36V, Vo=5V, Io=6A) Trace 1=Enable, Trace 2=Vo, 10ms/div

Output Ripple and Noise (Vin=36V, Vo=5V, Io=6A, Scope BW=20MHz)

Step Load Transient Response (Vin=36V, Vo=5V, Io=3A to 6A, 2.5A/us)
Trace 3=Vo, 200mV/div, Trace 4=Io, 5A/div.
Temperature of product top surface should be 110 degC or less.

http://www.murata.com/products/power
**DIMENSIONS**

### <Top View>

- **Vin**: Input Voltage
- **Vo**: Output Voltage
- **VAR**: Output Voltage Adjustment
- **EN/UVLO**: Enable and UVLO

### <Bottom View>

- **Pin No.**: 1-3, 4-9, 10-12, 13, 14, 15, 16, 17, 18-20
- **Name**: Vin, GND, GND, GND, VAR, GND, GND, GND, GND
- **Function**: Input Voltage, GND, GND, Output Voltage, GND, Output Voltage Adjustment, GND, Enable and UVLO, GND

**Unit [mm]**

- 1pin
- 7.5Max.
- 14.7
- 1920
- 1615
- 2.4
- 2.1
- 0.55

**http://www.murata.com/products/power**
PRODUCT BACKSIDE PATTERN (BOTTOM VIEW)

RECOMMENDED BOARD LAND PATTERN (TOP VIEW)

http://www.murata.com/products/power
EXAMPLE OF PATTEAN LAYOUT (TOP VIEW)

If there is a long inductive cable length between the input power source and converter, then some additional bulk decoupling capacitance (e.g. up to 1000uF) may be necessary to ensure a low AC impedance power source. This would typically be aluminum electrolytic type and does not need to be close to the input terminals of converter.

http://www.murata.com/products/power
RECOMMENDED CONSTANT

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>0</td>
<td>330k</td>
<td>7.5k</td>
<td>31.9</td>
<td>30.7</td>
</tr>
<tr>
<td>24</td>
<td>86.7 (82+4.7)</td>
<td>330k</td>
<td>8.2k</td>
<td>29.4</td>
<td>28.2</td>
</tr>
<tr>
<td>18</td>
<td>888 (820+68)</td>
<td>330k</td>
<td>11k</td>
<td>22.7</td>
<td>21.5</td>
</tr>
<tr>
<td>15</td>
<td>1.65k (1.5k+150)</td>
<td>330k</td>
<td>13k</td>
<td>19.7</td>
<td>18.5</td>
</tr>
<tr>
<td>12</td>
<td>3.068k (3.0k+68)</td>
<td>330k</td>
<td>18k</td>
<td>15.1</td>
<td>13.9</td>
</tr>
<tr>
<td>5</td>
<td>OPEN</td>
<td>330k</td>
<td>22k</td>
<td>12.9</td>
<td>11.7</td>
</tr>
</tbody>
</table>

RESISTOR EQUATION

RVAR [kohm] = \frac{33}{(V_o - 5)} – 1.65

RUVLO1 [kohm] = \frac{\text{Startup threshold} - \text{Shutdown threshold}}{0.005 – \frac{(\text{Startup threshold} - \text{Shutdown threshold})}{880}}

RUVLO2 [kohm] = \frac{0.9}{\frac{(\text{Startup threshold} - 0.9)}{\frac{1}{\frac{1}{\text{RUVLO1}} + \frac{1}{880}}} - 0.009}

BLOCK DIAGRAM

![Block Diagram](image)
PACKAGING INFORMATION

TAPE DIMENSION

Unit: mm

REEL DIMENSION

http://www.murata.com/products/power
Notes

1. The adhesive strength of the protective tape must be within 0.1-1.3N.
2. Each reel contains the quantities such as the table below.
3. Each reel set in moisture-proof packaging because of MSL 3.
4. No vacant pocket in “Module on tape” section.
5. The reel is labeled with Murata part number and quantity.
6. The color of reel is not specified.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>MYSGK02506BRSR</td>
<td>150 pcs.</td>
</tr>
<tr>
<td>MYSGK02506BRSRD</td>
<td>50 pcs.</td>
</tr>
</tbody>
</table>

http://www.murata.com/products/power
Input Fusing
Certain applications and/or safety agencies may require fuses at the inputs of power conversion components.
Fuses should also be used when there is the possibility of sustained input voltage reversal which is not current limited.
For greatest safety, we recommend a fast blow fuse installed in the ungrounded input supply line. The installer must observe all relevant safety standards and regulations. For safety agency approvals, install the converter in compliance with the end-user safety standard.

Input Under-Voltage Shutdown and Startup Threshold
RUVLO1 and RUVLO2 can be used to set the Shutdown and Startup standards and regulations. For safety agency approvals, install the converter ungrounded input supply line. The installer must observe all relevant safety standards and regulations. For safety agency approvals, install the converter in compliance with the end-user safety standard.

Start-Up Time
Assuming that the output current is set at the rated maximum, the Vin to Vo Startup Time (see Specifications) is the time interval between the point when the ramping input voltage crosses the Startup Threshold and the fully loaded regulated output voltage enters and remains within its specified accuracy band. Actual measured times will vary with input source impedance, external input capacitance, input voltage slew rate and final value of the input voltage as it appears at the converter.

The user must assure that the input source has low AC impedance to provide dynamic stability and that the input supply has little or no inductive content, including long distributed wiring to a remote power supply. The converter will operate with no additional external capacitance if these conditions are met. For best performance, we recommend installing a low-ESR capacitor immediately adjacent to the converter’s input terminals. The capacitor should be a ceramic type such as the Murata GRM32 series or GRM31 series and a electrolytic type such as Panasonic OS-CON series. Initial suggested capacitor values are 4.7uF 4 ceramic type and 1000uF 1 electrolytic type, rated at twice the expected maximum input voltage. Make sure that the input terminals do not go below the undervoltage shutdown voltage at all times. More input bulk capacitance may be added in parallel (either electrolytic or tantalum) if needed.

Recommended Output Filtering
The converter will achieve its rated output ripple and noise with additional external capacitor. The user may install more external output capacitance reduce the ripple even further for or for improved dynamic response. Initial suggested capacitor values are 4.7uF 4 ceramic type and 68uF Conductive Polymer Hybrid Aluminum Electrolytic Capacitor.

Output Noise
All models in this converter series are tested and specified for output noise using designated external input/output components, circuits and layout as shown in the figures below. In the figure below, the two copper strips simulate real-world printed circuit impedances between the power supply and its load. In order to minimize circuit errors and standardize tests between units, scope measurements should be made using BNC connectors or the probe ground should not exceed one half inch and soldered directly to the test circuit.

Temperature Derating Curves
The graphs in this data sheet illustrate typical operation under a variety of conditions. The derating curves show the maximum continuous ambient air temperature. Note that these are AVERAGE measurements. Note that the temperatures are of the ambient airflow, not the converter itself which is obviously running at higher temperature than the outside air. Also note that very low flow rates (below about 25 LFM) are similar to "natural convection," that is, not using fan-forced airflow. Murata makes Characterization measurements in a closed cycle wind tunnel with calibrated airflow. We use both thermocouples and an infrared camera system to observe thermal performance.

Output Short Circuit Protection
In the case of a heavy overload setting such as a short circuit, the converter temporarily stop output. Following a time-out period, the converter will restart, causing the output voltage to begin ramping up to its appropriate value. If the short-circuit condition persists, another shutdown cycle will initiate. This rapid on/off cycling is called “hiccup mode.” The hiccup cycling reduces the average output current, thereby preventing excessive internal temperatures and/or component damage. A short circuit can be tolerated indefinitely. The “hiccup” system differs from older latching short circuit systems because you do not have to power down the converter to make it restart. The system will automatically restore operation as soon as the short circuit condition is removed.
Remote On/Off Control
the converter are enabled when the EN/UVLO pin is left open.
An internal bias current causes the open pin to rise of voltage. the converter
are disabled when the On/Off is grounded or brought to within a low voltage
(see Specifications) with respect to GND.
Dynamic control of the On/Off function should be able to sink appropriate
signal current when brought low and withstand appropriate voltage when
brought high.
Be aware too that there is a finite time in milliseconds (see Specifications)
between the time of On/Off Control activation and stable, regulated output.
This time will vary slightly with output load type and current and input
conditions instability.

Output Capacitive Load
The converter do not require external capacitance added to achieve rated
specifications. Users should only consider adding capacitance to reduce
switching noise and/or to handle spike current load steps.
Install only enough capacitance to achieve noise objectives.
Excess external capacitance may cause regulation problems, degraded
transient response and possible oscillation or instability.

Output Voltage Adjustment
The output voltage may be adjusted over a limited range by connecting an
external VAR resistor (RVAR) between the VAR pin and GND pin.
The RVAR resistor must be a 1/10W precision metal film type, ±1%
accuracy or better with low temperature coefficient, ±100 ppm/degC or
better.
Mount the resistor close to the converter with very short leads or use a
surface mount trim resistor.
Do not exceed the specified limits of the output voltage or the converter’s
maximum power rating when applying these resistors.
Also, avoid high noise at the VAR input. However, to prevent instability, you
should never connect any capacitors between VAR pin and GND pin.
CAUTION: Do not change the RVAR while the converter is operating.

Soldering Guidelines
Murata recommends the specifications below when installing this converter.
These specifications vary depending on the solder type.
Exceeding these specifications may cause damage to the product. Your
production environment may differ therefore please thoroughly review these
guidelines with your process engineers.

<table>
<thead>
<tr>
<th>Reflow solder operations for surface-mount products</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Sn/Ag/Cu based solders:</td>
</tr>
<tr>
<td>Preheat Temperature</td>
</tr>
<tr>
<td>Time Over Liquidus</td>
</tr>
<tr>
<td>Maximum Peak Temperature</td>
</tr>
<tr>
<td>Cooling Rate</td>
</tr>
<tr>
<td>For Sn/Pd based solders:</td>
</tr>
<tr>
<td>Preheat Temperature</td>
</tr>
<tr>
<td>Time Over Liquidus</td>
</tr>
<tr>
<td>Maximum Peak Temperature</td>
</tr>
<tr>
<td>Cooling Rate</td>
</tr>
</tbody>
</table>

CAUTION: Do not reflow the converter as follows.

Pb-free solder processes
For Pb-free solder processes, the product is qualified for MSL 3 according to
IPC/JEDEC standard J-STD-020C.
During reflow PRODUCT must not exceed 250degC at any time.

Dry Pack Information
Products intended for Pb-free reflow soldering processes are delivered in
standard moisture barrier bags according to IPC/JEDEC standard J-STD-033.
(Handling, packing, shipping and use of moisture/reflow sensitivity surface
mount devices.)
Using products in high temperature Pb-free soldering processes requires dry
pack storage and handling. In case the products have been stored in an
uncontrolled environment and no longer can be considered dry, the modules
must be baked according to J-STD-033.

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