

Moisture / Reflow Sensitivity Classification

Moisture/Reflow Sensitivity Classification (MSL), as defined in IPC/JEDEC Standard J-STD-020, is not offered as part of Bourns® Multifuse® Polymer PTC standard product ratings or packaging labels as the J-STD-020 standard applies to non-hermetic solid state surface mount devices and does not include passive resistive components. However, as a courtesy to address frequent customer requests, Bourns recommends that Multifuse® Polymer PTC passive components be handled according to the Floor Life and MSL Classification tables below.

Bourns has determined that if IPC/JEDEC Standard J-STD-020 were to be applied to Bourns® Multifuse® Polymer PTC products:

- The Bourns® Multifuse® model series with an MSL Classification level 1 would have a moisture sensitivity rating equivalent to IPC/JEDEC Standard J-STD-020 MSL 1, specifying an unlimited floor life under the conditions 30 °C / 85 % RH; and
- The Bourns® Multifuse® model series with an MSL Classification level 2a would have a moisture sensitivity rating equivalent to IPC/JEDEC Standard J-STD-020 MSL 2a.

An IPC/JEDEC Standard J-STD-020 MSL 2a rating means:

- These components are sensitive to moisture.
- Once these components are removed from the moisture barrier bag packaging at factory ambient temperature of ≤ 30 °C/60 % RH, they must be assembled within 4 weeks from the date the bag was opened.
- If the above conditions are exceeded, a rebake may be necessary prior to assembly to ensure component compliance with stated performance specifications. Recommended re-bake condition: 40 °C / 5 % RH for 29 days; or contact Bourns.

| Floor Life | | |
|--------------------|---------------------|------------------------|
| MSL Classification | Time | Condition |
| 1 | Unlimited | ≤ 30 °C / 85 % RH |
| 2 | 1 year | ≤ 30 °C / 60 % RH |
| 2a | 4 weeks | |
| 3 | 168 hours | |
| 4 | 72 hours | |
| 5 | 48 hours | |
| 5a | 24 hours | |
| 6 | Time on Label (TOL) | |

The Process Sensitivity Level (PSL) classification of Bourns® Multifuse® Polymer PTCs as defined in IPC/JEDEC J-STD-075 is R5G; a component that has a maximum processing temperature recommendation of 255 °C with a maximum upper variation of 5 °C.

| MSL Classification | | | | | | | | | |
|--------------------|----------------------------|---|---|----|---|---|---|----|---|
| Structure | Model Series | 1 | 2 | 2a | 3 | 4 | 5 | 5a | 6 |
| Surface Mount | MF-ASML/X | | | • | | | | | |
| | MF-FSMF | • | | | | | | | |
| | MF-FSML/X | | | • | | | | | |
| | MF-FSHT | • | | | | | | | |
| | MF-PSMF | • | | | | | | | |
| | MF-PSML | | | • | | | | | |
| | MF-PSML/X | | | • | | | | | |
| | MF-PSHT | • | | | | | | | |
| | MF-NSMF | • | | | | | | | |
| | MF-NSML | | | • | | | | | |
| | MF-NSML/X | | | • | | | | | |
| | MF-NSHT | • | | | | | | | |
| | MF-USMF | • | | | | | | | |
| | MF-USML | | | • | | | | | |
| | MF-USML/X | | | • | | | | | |
| | MF-USHT | • | | | | | | | |
| | MF-MSMF | • | | | | | | | |
| | MF-MSHT | • | | | | | | | |
| | MF-SMDF | • | | | | | | | |
| | MF-LSMF | • | | | | | | | |
| | MF-GSMF | • | | | | | | | |
| | MF-SM | • | | | | | | | |
| | MF-SMHT | • | | | | | | | |
| | MF-SM/250 | • | | | | | | | |
| | MF-SM/250V | • | | | | | | | |
| | MF-SD/250 | • | | | | | | | |

| MSL Classification | | | | | | | | | |
|----------------------------|-----------------------------------|-----------------------|---|----|---|---|---|----|---|
| Structure | Model Series | 1 | 2 | 2a | 3 | 4 | 5 | 5a | 6 |
| Radial Leaded Through-Hole | MF-R | • | | | | | | | |
| | MF-RG | • | | | | | | | |
| | MF-RHT | • | | | | | | | |
| | MF-RM | • | | | | | | | |
| | MF-RX/72 | • | | | | | | | |
| | MF-RX/250 | • | | | | | | | |
| | Battery Strap | MF-LR | • | | | | | | |
| MF-LS | | • | | | | | | | |
| MF-S | | • | | | | | | | |
| MF-SVS | | • | | | | | | | |
| MF-VS | | • | | | | | | | |
| | MF-VS Narrow Body | • | | | | | | | |



Asia-Pacific: Tel: +886-2 2562-4117 • Email: asiacus@bourns.com

EMEA: Tel: +36 88 885 877 • Email: eurocus@bourns.com

The Americas: Tel: +1-951 781-5500 • Email: americus@bourns.com

www.bourns.com