RT PolarFire Engineering Silicon (ES) FPGAs
July 5, 2022

To facilitate design evaluation activities of the new RT PolarFire FPGA family, Microchip offers RT PolarFire ES devices. These devices use the first RT PolarFire silicon. Note that some flight-model tests are not performed on the RT PolarFire ES devices:

1. RT PolarFire ES devices are intended for hardware functional verification only at room temperature. They should not be used for space flight applications. They should also not be used for applications or activities which require the quality of space flight parts, such as qualification of space flight hardware.
2. RT PolarFire ES devices are only tested at room temperature.
3. The following features on RT PolarFire ES devices have received testing at room temperature:
    - FPGA Fabric
    - GPIO, HSIO and DDR interfaces
    - CCC/PLL, LSRAM, uSRAM and DSP Mathblocks
    - SERDES for native SERDES (ePCS) and PCIe interfaces
    - Program/Erase through JTAG interface

    No other features have been tested on RT PolarFire ES devices. Note that System Controller Suspend Mode has not yet been validated for ES FPGAs.
4. No MIL-STD-883 Class B testing is performed. RT PolarFire ES devices are not subjected to temperature cycling, fine and gross leak testing, X-ray inspection, PIND testing, assembly lot Group B testing, or burn-in.
5. Customers are recommended to operate RT PolarFire ES devices within the datasheet recommended operating conditions.
6. Microchip does not guarantee life time or reliability of RT PolarFire ES devices.
7. RT PolarFire ES devices are offered in Ceramic Column Grid Array (CCGA, CG1509), Ceramic Ball Grid Array (CBGA, CB1509) or Ceramic Land Grid Array (CLGA, LG1509) packages. The hermeticity of the lid seal is not tested and is not guaranteed. The seal integrity should be sufficient to protect the FPGA during normal PCB manufacturing and cleaning processes. However, since hermeticity is not guaranteed, the RT PolarFire ES devices should not be subjected to thermal vacuum tests. System level flight-model qualification should be performed with flight-qualified FPGAs, meaning FPGAs screened to at least MIL-STD-883 Class B.
8. The lids of RT PolarFire ES devices have a shallow dimple drilled through the top plating layers but not penetrating the thickness of the lid. The purpose of this dimple is to deter counterfeiting. The drilling operation does not cause operating characteristics of the device to deteriorate.
9. RT PolarFire ES units may be assembled using an assembly process that is not qualified for space flight.

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10. RT PolarFire ES units will be marked as “ES”.
    RT PolarFire ES units may have cosmetic visual imperfections.
11. RT PolarFire ES units are not DLA or QML certified.
12. RT PolarFire ES units are not tested for radiation performance.
13. A system-generated Certificate of Conformance will be shipped with the RT PolarFire ES units. No other data will be shipped or available to ship with the RT PolarFire ES units.
14. Microchip provides general technical support for RT PolarFire ES through the local Field Application Engineers and through the general Technical Support channels, but will not provide failure analysis support for RT PolarFire ES devices.
    Technical support is available through the website at: www.microchip.com/support
15. If programming at the Microchip factory is required, the programming files must be supplied at the time of order placement; Microchip cannot reserve inventory or units from lots in process pending receipt of customer programming files.
16. No special or customer specific testing will be available for RT PolarFire ES units. Requests for Single Lot Date Code, specific date codes, Single Wafer Lot, date code restrictions, or specific wafer lots will not be accepted.
17. Microchip cannot guarantee availability of flight units from the same wafer lot or date code as the RT PolarFire ES units.
18. No customer QA and/or P.O. clauses will be reviewed or accepted on RT PolarFire ES orders. There will be no review of customer Terms and Conditions on RT PolarFire ES orders. Orders will be accepted to Microchip standard Terms and Conditions only, https://www.microchip.com/en-us/about/legal-information/microchip-terms-and-conditions-of-sale
19. RT PolarFire ES units are subject to the same export controls as standard RT FPGA units.

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