

ISO 24065:2023-10 (E)

Aerospace - High-power solid-state power controller - General performance requirements

| Contents | | Page |
|---------------------|---|-------------|
| Foreword | | v |
| Introduction | | vi |
| 1 | Scope | 1 |
| 2 | Normative references | 1 |
| 3 | Terms and definitions | 1 |
| 4 | Requirements | 6 |
| 4.1 | Detail requirements | 6 |
| 4.2 | Electrical characteristics | 6 |
| 4.3 | Performance | 6 |
| 4.3.1 | Control signals | 6 |
| 4.3.2 | Turn-on and turn-off time | 6 |
| 4.3.3 | Load voltage rise and fall time (soft on/off function) | 6 |
| 4.3.4 | Isolation | 6 |
| 4.3.5 | Control signal levels | 6 |
| 4.3.6 | Voltage drop | 7 |
| 4.3.7 | Off state leakage current | 7 |
| 4.3.8 | Off state output voltage | 7 |
| 4.3.9 | Power dissipation | 7 |
| 4.3.10 | Overload characteristics | 7 |
| 4.3.11 | State indication | 7 |
| 4.3.12 | HPSSPC trip-free characteristics | 7 |
| 4.3.13 | Zero voltage turn-on and zero current turn-off (AC HPSSPC) | 8 |
| 4.3.14 | Reverse current | 8 |
| 4.3.15 | Exponential rate of voltage rise | 8 |
| 4.3.16 | Arc fault characteristics | 8 |
| 4.3.17 | Built-in test | 8 |
| 4.3.18 | Setting change for the rated current | 9 |
| 5 | Quality assurance provisions on electrical characteristics | 9 |
| 5.1 | General | 9 |
| 5.2 | Control signals | 9 |
| 5.2.1 | General | 9 |
| 5.2.2 | Turn-on signal | 9 |
| 5.2.3 | Turn-off signal | 10 |
| 5.3 | Turn-on and turn-off time | 10 |
| 5.4 | Load voltage rise and fall time | 10 |
| 5.5 | Isolation | 10 |
| 5.6 | Control signal levels | 11 |
| 5.7 | Voltage drop | 11 |
| 5.8 | Off state leakage current | 11 |
| 5.9 | Off state output voltage | 11 |
| 5.10 | Power dissipation | 11 |
| 5.11 | Overload characteristic tests | 11 |
| 5.11.1 | Current limiting | 11 |
| 5.11.2 | HPSSPC trip characteristics | 12 |
| 5.12 | State indication signal(s) | 12 |
| 5.13 | HPSSPC trip-free characteristics | 12 |

| | | |
|--------------------------|---|-----------|
| 5.14 | Zero voltage turn-on (ZVTO) and zero current turn-off (ZCTO)..... | 12 |
| 5.15 | Reverse current | 12 |
| 5.16 | Exponential rate of voltage rise | 13 |
| 5.17 | Arc fault characteristics..... | 14 |
| | 5.17.1 Guillotine test..... | 14 |
| | 5.17.2 Wet arc fault test..... | 16 |
| | 5.17.3 Intermittent connection test..... | 17 |
| | 5.17.4 Compatibility with normal load..... | 20 |
| | 5.17.5 Compatibility with arc fault of another line..... | 20 |
| 5.18 | Built-in test..... | 21 |
| 5.19 | Setting change for the rated current | 21 |
| Bibliography..... | | 23 |