|  |  |
| --- | --- |
| **PWR\_BOOST\_5P0** | **VCC\_MPU alone** |
| **Power Test Report** | **Measurement Report** |

`

|  |  |
| --- | --- |
| **System Configurations:** | |
| **Model Name** | Jaws |
| **Stage** | EV1B |
| **PCB Version** | 21H002-SD |

|  |  |  |  |
| --- | --- | --- | --- |
| **Contents:** | | | |
|  | [**1. Testing Configurations**](#Configuration) | **Page** | **1** |
|  | [**2. Measurement Results**](#Results)  [**2.1 Regulation at normal temperature**](#A21)  [**2.2 Output Voltage Ripple/Noise**](#_Hlk67307814)  [**2.3 Output Load Transient**](#_Hlk162321883)  [**2.4 Efficiency**](#_Hlk162321883)  [**2.5 Output Voltage Rising Time**](#_Hlk162321883)  [**2.6 Inrush Current**](#_Hlk162321883) | **Page** | **2~3** |
| **Appendix:** | | | |
|  | **Waveform Charts** | **Page** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Comments:** | **PASS** | | |
|  |  | | |
| **Prepared by:** | **{{CL\_B5}}** | **Date:** | **{{CL\_B6}}** |
| **Approved by:** |  | **Date:** |  |

|  |
| --- |
| **1. Testing Configurations** |

|  |  |
| --- | --- |
| **1.1 Testing Date:** | {{CL\_B7}} |

|  |  |
| --- | --- |
| **1.2 Testing Place:** | {{CL\_B8}} |

|  |  |
| --- | --- |
| **1.3 Testing Environment:** | **{{CL\_B9}}** |

|  |  |  |
| --- | --- | --- |
| **1.4 Testing Equipments** | | |
|  | ***Scope:*** | ***{{CL\_C1}}*** |
|  | ***Probe:*** | ***Signal Integrity Analysis:***  ***Agilent 10073D <15pF 1MΩ 100MHz 10X (Passive Probe)***  ***Tektronix P5050 <11.1pF 10MΩ 100MHz 10X (Passive Probe)***  ***Current Measurement:***  ***Tektronix TCP0030A ~120MHz, 30A Max DC(Current Probe)***  ***Tektronix A6302, AM503, TM502A ~50MHz, 20A Max DC, 50A peak pulse (Current Probe)***  ***Tektronix A6303, ~15MHz, 100A Max DC, 100A peak pulse (High Current Probe)*** |
|  | ***Power Supply*** | ***{{CL\_C2}}*** |
|  | ***Electronic Load*** | ***{{CL\_C3}}*** |

|  |  |
| --- | --- |
| **1.5 Testing Methodology/Procedure** | |
| **1.Output voltage regulation at normal temperature (static line, load regulation)** | **Measure the output voltages for any combinations of input voltages and load currents.** |
| **2.Output voltage ripple/noise** | **Measure output voltage ripple /noise for any**  **combinations of input voltages and load currents.** |
| **3.Load Transient** | **Measure the output voltages and currents at 0.1Imax~Imax 1KHz dynamic, duty = 1/2, skew rate=1.27A/us.** |
| **4.Output Voltage Rising Time** | **1. Input power at VIN ready.**  **2. Enable the power converter.**  **3. Measure signals input, enable and output by scope.** |
| **5.Efficiency** | **Measure the input voltage, input current and output voltage, output load to calculate power efficiency.** |

|  |
| --- |
| * 2. Measurement Results |

* **Vin = 3.6V~4.4V, Imin = 100 mA, Imax = 1500mA**

[**2.1 Regulation at normal temperature**](#A21)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Spec.(V)** | **Vrms[V]** | **Vmin[V]** | **Vmax[V]** | | **Comment** |
| **{{CL\_F4}}** | **{{CL\_G4}}** | **{{CL\_K4}}~{{CL\_H4}}** | **{{CL\_T4}}** | **{{CL\_S4}}** | **{{CL\_R4}}** | | {{CL\_V4}} |
| **{{CL\_F5}}** | **{{CL\_G5}}** | **{{CL\_K5}}~{{CL\_H5}}** | **{{CL\_T5}}** | **{{CL\_S5}}** | **{{CL\_R5}}** | | {{CL\_V5}} |
| **{{CL\_F6}}** | **{{CL\_G6}}** | **{{CL\_K6}}~{{CL\_H6}}** | **{{CL\_T6}}** | **{{CL\_S6}}** | **{{CL\_R6}}** | | {{CL\_V6}} |
| **{{CL\_F7}}** | **{{CL\_G7}}** | **{{CL\_K7}}~{{CL\_H7}}** | **{{CL\_T7}}** | **{{CL\_S7}}** | **{{CL\_R7}}** | | {{CL\_V7}} |
| **{{CL\_F8}}** | **{{CL\_G8}}** | **{{CL\_K8}}~{{CL\_H8}}** | **{{CL\_T8}}** | **{{CL\_S8}}** | | **{{CL\_R8}}** | {{CL\_V8}} |
| **{{CL\_F9}}** | **{{CL\_G9}}** | **{{CL\_K9}}~{{CL\_H9}}** | **{{CL\_T9}}** | **{{CL\_S9}}** | | **{{CL\_R9}}** | {{CL\_V9}} |
| **{{CL\_F10}}** | **{{CL\_G10}}** | **{{CL\_K10}}~{{CL\_H10}}** | **{{CL\_T10}}** | **{{CL\_S10}}** | | **{{CL\_R10}}** | {{CL\_V10}} |
| **{{CL\_F11}}** | **{{CL\_G11}}** | **{{CL\_K11}}~{{CL\_H11}}** | **{{CL\_T11}}** | **{{CL\_S11}}** | | **{{CL\_R11}}** | {{CL\_V11}} |
| **{{CL\_F12}}** | **{{CL\_G12}}** | **{{CL\_K12}}~{{CL\_H12}}** | **{{CL\_T12}}** | **{{CL\_S12}}** | | **{{CL\_R12}}** | {{CL\_V12}} |
| **{{CL\_F13}}** | **{{CL\_G13}}** | **{{CL\_K13}}~{{CL\_H13}}** | **{{CL\_T13}}** | **{{CL\_S13}}** | | **{{CL\_R13}}** | {{CL\_V13}} |
| **{{CL\_F14}}** | **{{CL\_G14}}** | **{{CL\_K14}}~{{CL\_H14}}** | **{{CL\_T14}}** | **{{CL\_S14}}** | | **{{CL\_R14}}** | {{CL\_V14}} |
| **{CL\_F15}}** | **{{CL\_G15}}** | **{{CL\_K15}}~{{CL\_H15}}** | **{{CL\_T15}}** | **{{CL\_S15}}** | | **{{CL\_R15}}** | {{CL\_V15}} |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2.2 Output Voltage Ripple/Noise** | | | | | | |
| Description | | **Spec. (mV)** | | **Measured(mV)** | | **Comment** | |
| **Ripple** | **R+N** | **Ripple** | **R+N** |
|  | | | | | | | |
| {{CL\_D4}} | Vin {{CL\_F4}}Vload current = Imax {{CL\_G4}}@-20℃ | **{{CL\_N4}}** |  | **{{CL\_U4}}** |  |  | |
| {{CL\_D5}} | Vin {{CL\_F5}}Vload current = Imax{{CL\_G5}} @-20℃ | **{{CL\_N5}}** |  | **{{CL\_U5}}** |  |  | |
| {{CL\_D6}} | Vin {{CL\_F6}}Vload current = Imax {{CL\_G6}} @-20℃ | **{{CL\_N6}}** |  | **{{CL\_U6}}** |  |  | |
| {{CL\_D7}} | Vin {{CL\_F7}}Vload current = Imax{{CL\_G7}} @-20℃ | **{{CL\_N7}}** |  | **{{CL\_U7}}** |  |  | |
| {{CL\_D8}} | Vin {{CL\_F8}}Vload current = Imax{{CL\_G8}} @25℃ | **{{CL\_N8}}** |  | **{{CL\_U8}}** |  |  | |
| {{CL\_D9}} | Vin {{CL\_F9}}Vload current = Imax{{CL\_G9}} @25℃ | **{{CL\_N9}}** |  | **{{CL\_U9}}** |  |  | |
| {{CL\_D10}} | Vin {{CL\_F10}}Vload current = Imax{{CL\_G10}} @25℃ | **{{CL\_N10}}** |  | **{{CL\_U10}}** |  |  | |
| {{CL\_D11}} | Vin {{CL\_F11}}Vload current = Imax{{CL\_G11}} @25℃ | **{{CL\_N11}}** |  | **{{CL\_U11}}** |  |  | |
| {{CL\_D12}} | Vin {{CL\_F12}}Vload current = Imax{{CL\_G12}} @50℃ | **{{CL\_N12}}** |  | **{{CL\_U12}}** |  |  | |
| {{CL\_D13}} | Vin {{CL\_F13}}Vload current = Imax{{CL\_G13}} @50℃ | **{{CL\_N13}}** |  | **{{CL\_U13}}** |  |  | |
| {{CL\_D14}} | Vin {{CL\_F14}}Vload current = Imax{{CL\_G14}} @50℃ | **{{CL\_N14}}** |  | **{{CL\_U14}}** |  |  | |
| {{CL\_D15}} | Vin {{CL\_F15}}Vload current = Imax{{CL\_G15}} @50℃ | **{{CL\_N15}}** |  | **{{CL\_U15}}** |  |  | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2.3 Load Transient**  **Imin = 100 mA, Imax = 1500mA, 1KHz dynamic, duty = 1/2, skew rate=0.25A/us** | | | | | | |
| Description | | **Spec. (V)** | | **Measured(V)** | **Comment** | **Imax** | |
| **Min.** | **Max.** |
| **-20℃** | | | | | | | |
| **{{CL\_X4}}** | Vin = {{CL\_Z4}} | **{{CL\_AE4}}** | **{{CL\_AB4}}** | **{{CL\_AH4}}~{{CL\_AI4}}** | {{CL\_AL4}} | **{{CL\_AA4}}** | |
| **{{CL\_X5}}** | Vin = {{CL\_Z5}} | **{{CL\_AE5}}** | **{{CL\_AB5}}** | **{{CL\_AH5}}~{{CL\_AI5}}** | {{CL\_AL5}} | **{{CL\_AA5}}** | |
| **25℃** | | | | | | | |
| **{{CL\_X6}}** | Vin = {{CL\_Z6}} | **{{CL\_AE6}}** | **{{CL\_AB6}}** | **{{CL\_AH6}}~{{CL\_AI6}}** | {{CL\_AL6}} | **{{CL\_AA6}}** | |
| **{{CL\_X7}}** | Vin = {{CL\_Z7}} | **{{CL\_AE7}}** | **{{CL\_AB7}}** | **{{CL\_AH7}}~{{CL\_AI7}}** | {{CL\_AL7}} | **{{CL\_AA7}}** | |
| **50℃** | | | | | | | |
| **{{CL\_X8}}** | Vin = {{CL\_Z8}} | **{{CL\_AE8}}** | **{{CL\_AB8}}** | **{{CL\_AH8}}~{{CL\_AI8}}** | {{CL\_AL8}} | **{{CL\_AA8}}** | |
| **{{CL\_X9}}** | Vin = {{CL\_Z9}} | **{{CL\_AE9}}** | **{{CL\_AB9}}** | **{{CL\_AH9}}~{{CL\_AI9}}** | {{CL\_AL9}} | **{{CL\_AA9}}** | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2.4 Line Transient** | | | | | | |
| Description | | **Spec. (V)** | | **Measured(V)** | **Comment** | **Remark** | |
| **Min.** | **Max.** |
| **-20℃** | | | | | | | |
| [**{{CL\_AN4}}**](#B41) | **Vin {{CL\_AP4}}V~{{CL\_AQ4}}V**  **Imax {{CL\_AR4}}**  **Rise Edge** | **{{CL\_AV4}}** | **{{CL\_AS4}}** | **{{CL\_AY4}}~{{CL\_AZ4}}** | {{CL\_BC4}} |  | |
| [**{{CL\_AN5}}**](#B41) | **Vin {{CL\_AP5}}V~{{CL\_AQ5}}V**  **Imax {{CL\_AR5}}**  **Rise Edge** | **{{CL\_AV5}}** | **{{CL\_AS5}}** | **{{CL\_AY5}}~{{CL\_AZ5}}** | {{CL\_BC5}} |  | |
| [**{{CL\_AN6}}**](#B41) | **Vin {{CL\_AP6}}V~{{CL\_AQ6}}V**  **Imax {{CL\_AR6}}**  **Fall Edge** | **{{CL\_AV6}}** | **{{CL\_AS6}}** | **{{CL\_AY6}}~{{CL\_AZ6}}** | {{CL\_BC6}} |  | |
| [**{{CL\_AN7}}**](#B41) | **Vin {{CL\_AP7}}V~{{CL\_AQ7}}V**  **Imax {{CL\_AR7}}**  **Fall Edge** | **{{CL\_AV7}}** | **{{CL\_AS7}}** | **{{CL\_AY7}}~{{CL\_AZ7}}** | {{CL\_BC7}} |  | |
| **25℃** | | | | | | | |
| [**{{CL\_AN8}}**](#B41) | **Vin {{CL\_AP8}}V~{{CL\_AQ8}}V**  **Imax {{CL\_AR8}}**  **Rise Edge** | **{{CL\_AV8}}** | **{{CL\_AS8}}** | **{{CL\_AY8}}~{{CL\_AZ8}}** | {{CL\_BC8}} |  | |
| [**{{CL\_AN9}}**](#B41) | **Vin {{CL\_AP9}}V~{{CL\_AQ9}}V**  **Imax {{CL\_AR9}}**  **Rise Edge** | **{{CL\_AV9}}** | **{{CL\_AS9}}** | **{{CL\_AY9}}~{{CL\_AZ9}}** | {{CL\_BC9}} |  | |
| [**{{CL\_AN10}}**](#B41) | **Vin {{CL\_AP10}}V~{{CL\_AQ10}}V**  **Imax {{CL\_AR10}}**  **Fall Edge** | **{{CL\_AV10}}** | **{{CL\_AS10}}** | **{{CL\_AY10}}~{{CL\_AZ10}}** | {{CL\_BC10}} |  | |
| [**{{CL\_AN11}}**](#B41) | **Vin {{CL\_AP11}}V~{{CL\_AQ11}}V**  **Imax {{CL\_AR11}}**  **Fall Edge** | **{{CL\_AV11}}** | **{{CL\_AS11}}** | **{{CL\_AY11}}~{{CL\_AZ11}}** | {{CL\_BC11}} |  | |
| **50℃** | | | | | | | |
| [**{{CL\_AN12}}**](#B41) | **Vin {{CL\_AP12}}V~{{CL\_AQ12}}V**  **Imax {{CL\_AR12}}**  **Rise Edge** | **{{CL\_AV12}}** | **{{CL\_AS12}}** | **{{CL\_AY12}}~{{CL\_AZ12}}** | {{CL\_BC12}} |  | |
| [**{{CL\_AN13}}**](#B41) | **Vin {{CL\_AP13}}V~{{CL\_AQ13}}V**  **Imax {{CL\_AR13}}**  **Rise Edge** | **{{CL\_AV13}}** | **{{CL\_AS13}}** | **{{CL\_AY13}}~{{CL\_AZ13}}** | {{CL\_BC13}} |  | |
| [**{{CL\_AN14}}**](#B41) | **Vin {{CL\_AP14}}V~{{CL\_AQ14}}V**  **Imax {{CL\_AR14}}**  **Fall Edge** | **{{CL\_AV14}}** | **{{CL\_AS14}}** | **{{CL\_AY14}}~{{CL\_AZ14}}** | {{CL\_BC14}} |  | |
| [**{{CL\_AN15}}**](#B41) | **Vin {{CL\_AP15}}V~{{CL\_AQ15}}V**  **Imax {{CL\_AR15}}**  **Fall Edge** | **{{CL\_AV15}}** | **{{CL\_AS15}}** | **{{CL\_AY15}}~{{CL\_AZ15}}** | {{CL\_BC15}} |  | |

**2.5 Efficiency**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Description | **Input** | | **Output** | | **Power Efficiency** |
| **Voltage(V)** | **Current(A)** | **Voltage(V)** | **Current(A)** |
| **-20℃** | | | | | |
| Vin {{CL\_BG4}}V **load current = Imax {{CL\_BH4}}** | **{{CL\_BK4}}** | **{{CL\_BL4}}** | **{{CL\_BM4}}** | **{{CL\_BN4}}** | **{{CL\_BO4}}** |
| Vin {{CL\_BG5}}V **load current=Imin {{CL\_BH5}}** | **{{CL\_BK5}}** | **{{CL\_BL5}}** | **{{CL\_BM5}}** | **{{CL\_BN5}}** | **{{CL\_BO5}}** |
| Vin {{CL\_BG6}}V **load current = Imax {{CL\_BH6}}** | **{{CL\_BK6}}** | **{{CL\_BL6}}** | **{{CL\_BM6}}** | **{{CL\_BN6}}** | **{{CL\_BO6}}** |
| Vin {{CL\_BG7}}V **load current=Imin {{CL\_BH7}}** | **{{CL\_BK7}}** | **{{CL\_BL7}}** | **{{CL\_BM7}}** | **{{CL\_BN7}}** | **{{CL\_BO7}}** |
| **25℃** | | | | | |
| Vin {{CL\_BG8}}V **load current = Imax {{CL\_BH8}}** | **{{CL\_BK8}}** | **{{CL\_BL8}}** | **{{CL\_BM8}}** | **{{CL\_BN8}}** | **{{CL\_BO8}}** |
| Vin {{CL\_BG9}}V **load current=Imin {{CL\_BH9}}** | **{{CL\_BK9}}** | **{{CL\_BL9}}** | **{{CL\_BM9}}** | **{{CL\_BN9}}** | **{{CL\_BO9}}** |
| Vin {{CL\_BG10}}V **load current = Imax {{CL\_BH10}}** | **{{CL\_BK10}}** | **{{CL\_BL10}}** | **{{CL\_BM10}}** | **{{CL\_BN10}}** | **{{CL\_BO10}}** |
| Vin {{CL\_BG11}}V **load current=Imin {{CL\_BH11}}** | **{{CL\_BK11}}** | **{{CL\_BL11}}** | **{{CL\_BM11}}** | **{{CL\_BN11}}** | **{{CL\_BO11}}** |
| **50℃** | | | | | |
| Vin {{CL\_BG12}}V **load current = Imax {{CL\_BH12}}** | **{{CL\_BK12}}** | **{{CL\_BL12}}** | **{{CL\_BM12}}** | **{{CL\_BN12}}** | **{{CL\_BO12}}** |
| Vin {{CL\_BG13}}V **load current=Imin {{CL\_BH13}}** | **{{CL\_BK13}}** | **{{CL\_BL13}}** | **{{CL\_BM13}}** | **{{CL\_BN13}}** | **{{CL\_BO13}}** |
| Vin {{CL\_BG14}}V **load current = Imax {{CL\_BH14}}** | **{{CL\_BK14}}** | **{{CL\_BL14}}** | **{{CL\_BM14}}** | **{{CL\_BN14}}** | **{{CL\_BO14}}** |
| Vin {{CL\_BG15}}V **load current=Imin {{CL\_BH15}}** | **{{CL\_BK15}}** | **{{CL\_BL15}}** | **{{CL\_BM15}}** | **{{CL\_BN15}}** | **{{CL\_BO15}}** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_1}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_2}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_3}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_4}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_5}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_6}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_7}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_8}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_9}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_10}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_11}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Output Voltage Ripple**  **{{image\_12}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Load Transient**  **{{image\_13}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Load Transient**  **{{image\_14}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Load Transient**  **{{image\_15}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Load Transient**  **{{image\_16}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Load Transient**  **{{image\_17}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Load Transient**  **{{image\_18}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_19}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_20}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_21}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_22}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_23}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_24}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_25}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_26}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_27}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_28}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_29}}** | **Measurement:** |

|  |  |  |
| --- | --- | --- |
| **Waveform#** | **Line Transient**  **{{image\_30}}** | **Measurement:** |