

3. OUTPUT SPECIFICATIONS

General Condition: $T_A = 0 \dots 45^\circ\text{C}$ unless otherwise specified.

PARAMETER	CONDITIONS / DESCRIPTION	MIN	NOM	MAX	UNIT
Main Output V_1					
$V_{1\text{ nom}}$	Nominal Output Voltage		12		VDC
$V_{1\text{ set}}$	Output Setpoint Accuracy	$0.5 \cdot I_{1\text{ nom}}$, $T_{\text{amb}} = 25^\circ\text{C}$		+0.5	% $V_{1\text{ nom}}$
$dV_{1\text{ tot}}$	Total Regulation	$V_{1\text{ min}}$ to $V_{1\text{ max}}$, 0 to 100% $I_{1\text{ nom}}$, $T_{\text{a min}}$ to $T_{\text{a max}}$		+1	% $V_{1\text{ nom}}$
$P_{1\text{ nom}}$	Nominal Output Power	$V_1 = 12\text{ VDC}$	1080		W
$I_{1\text{ nom}}$	Nominal Output Current	$V_1 = 12\text{ VDC}$	90		ADC
$V_{1\text{ pp}}$	Output Ripple Voltage	$V_{1\text{ nom}}$, $I_{1\text{ nom}}$, 20 MHz BW, 10nF/16V/X7R/1210 + 10uF/16V at V_1		150	mVpp
$dV_{1\text{ Load}}$	Load Regulation	$V_1 = V_{1\text{ nom}}$, 0 - 100 % $I_{1\text{ nom}}$	80		mV
$dV_{1\text{ Line}}$	Line Regulation	$V_1 = V_{1\text{ min}} \dots V_{1\text{ max}}$	10		mV
$I_{1\text{ max}}$	Current Limitation		95	105	ADC
dI_{share}	Current Sharing	Deviation from $I_{1\text{ tot}} / N$, $I_1 > 10\%$	-3	+3	A
$dV_{1\text{ dyn}}$	Dynamic Load Regulation	$\Delta I_1 = 50\% I_{1\text{ nom}}$, $I_1 = 5 \dots 100\% I_{1\text{ nom}}$, $dI_1/dt = 1\text{ A}/\mu\text{s}$, recovery within 1% of $V_{1\text{ nom}}$	-0.6	0.6	V
T_{rec}	Recovery Time			1	ms
$t_{\text{AC } V_1}$	Start-Up Time From DC	$V_1 = 10.8\text{ VDC}$		2	sec
$t_{V_1\text{ rise}}$	Rise Time	$V_1 = 10 \dots 90\% V_{1\text{ nom}}$	1	10	ms
C_{Load}	Capacitive Loading	$T_a = 25^\circ\text{C}$		10 000	μF
Standby Output V_{SB}					
$V_{\text{SB nom}}$	Nominal Output Voltage	$V_{\text{SB SEL}} = 1$	3.3		VDC
		$V_{\text{SB SEL}} = 0$	5		VDC
$V_{\text{SB set}}$	Output Setpoint Accuracy	$V_{\text{SB SEL}} = 0 / 1$	-0.5	+0.5	% $V_{1\text{ nom}}$
$dV_{\text{SB tot}}$	Total Regulation	$V_{1\text{ min}}$ to $V_{1\text{ max}}$, 0 to 100% $I_{\text{SB nom}}$, $T_{\text{a min}}$ to $T_{\text{a max}}$	-2	+2	% $V_{\text{SB nom}}$
$P_{\text{SB nom}}$	Nominal Output Power	$V_{\text{SB SEL}} = 0 / 1$	16.5		W
$I_{\text{SB nom}}$	Nominal Output Current	$V_{\text{SB}} = 3.3\text{ VDC}$	5		ADC
		$V_{\text{SB}} = 5.0\text{ VDC}$	3.3		ADC
$V_{\text{SB pp}}$	Output Ripple Voltage	$V_{\text{SB nom}}$, $I_{\text{SB nom}}$, 20 MHz BW, 10nF/16V/X7R/1210 + 10uF/16V at V_{SB}		100	mVpp
dV_{SB}	Droop	0 - 100 % $I_{\text{SB nom}}$	$V_{\text{SB SEL}} = 1$	67	mV
			$V_{\text{SB SEL}} = 0$	44	mV
$I_{\text{SB max}}$	Current Limitation	$V_{\text{SB SEL}} = 1$	5.25	6	ADC
		$V_{\text{SB SEL}} = 0$	3.45	4.3	ADC
$dV_{\text{SB dyn}}$	Dynamic Load Regulation	$\Delta I_{\text{SB}} = 50\% I_{\text{SB nom}}$, $I_{\text{SB}} = 5 \dots 100\% I_{\text{SB nom}}$, $dI_{\text{SB}}/dt = 0.5\text{ A}/\mu\text{s}$, recovery within 1% of $V_{1\text{ nom}}$	-3	3	% $V_{\text{SB nom}}$
T_{rec}	Recovery Time			250	μs
$t_{\text{AC } V_{\text{SB}}}$	Start-Up Time From DC Input	$V_{\text{SB}} = 90\% V_{\text{SB nom}}$		2	sec
$t_{V_{\text{SB}}\text{ rise}}$	Rise Time	$V_{\text{SB}} = 10 \dots 90\% V_{\text{SB nom}}$	4	10	ms
C_{Load}	Capacitive Loading	$T_{\text{amb}} = 25^\circ\text{C}$		10000	μF

4. SIGNAL & CONTROL SPECIFICATIONS

4.1 FRONT LEDES

OPERATING CONDITION	LED SIGNALING
IN LED (INPUT OK)	
DC Line within range	Solid Green
DC Line UV condition	Off
Redundant Operation - PSU1 operating and PSU2 has input power removed	Solid Yellow (PSU2) ¹
OUT LED² (OUTPUT OK)	
PSON High	Blinking Yellow (1:1)
Hot-Standby Mode	Blinking Yellow/Green (1:2)
V_I or V_{SB} out of regulation	
Over temperature shutdown	
Output over voltage shutdown (V_I or V_{SB})	Solid Yellow
Output over current shutdown (V_I or V_{SB})	
Fan error (>15%)	
Over temperature warning	Blinking Yellow/Green (2:1)
Minor fan regulation error (>5%, <15%)	Blinking Yellow/Green (1:1)
Redundant Operation - PSU1 operating and PSU2 has input power removed	Off (PSU2)

¹ The LEDs will be ON till input power from PSU1 is removed.

² The order of the criteria in the table corresponds to the testing precedence in the controller.

Table 1. LED Status

The front-end has 2 front LEDs showing the status of the supply. LED number one is green and indicates DC power is on or off, while LED number two is bi-colored: green and yellow, and indicates DC power presence or fault situations. For the position of the LEDs see Figure 5.