FEATURES

- 1,200W continuous main output power
- 12V main output and 12Vsb output or pin selectable 3.3/5V standby output
- Dinkle DT-7C-B14W-02 Input Terminal Block
- Low-profile package
- 54.5mm x 228.6mm x 40mm
- >39W/in^3 density
- N+1 redundant, hot-swap ready
- Rapid ON Cold Redundant capability
- Active (digital) current sharing on 12V main output; Integral ORing /isolation provided for both outputs
- Internal variable speed cooling fan
- Output voltage, current, and temperature protected
- PMBus™ 1.2 with LED status indicators
- RoHS compliant
- Two-year warranty

For full details go to www.murata-ps.com/rohs

Certificate and Test Report

PRODUCT OVERVIEW

D1U54S-D-1200-12-HxxC series of 1200W highly efficient, DC-DC front-end power supply converters provide a 12Vdc main output. These power modules adopt an active current-sharing feature for parallel or redundant operation and are fully protected from over-voltage, over-current, and over-temperature faults, and also includes a standby output.

LED status indicators and corresponding hardware logic signals are provided in addition to a comprehensive PMBus™1.2 compliant digital communication bus. These features provide status monitoring, configuration, and control capability.

The slim, compact 1U package achieves >39W/in^3 and is ideal for delivering robust power to servers, workstations, storage, network systems, or other applications requiring 12V distributed power architecture.

ORDERING GUIDE[1]

Part Number	Output Power[2]	Main Output	Standby Output	Airflow Direction	MPS Model
D1U54S-D-1200-12-HB3C	1200W	12Vdc	12Vdc	F→B	M2105
D1U54S-D-1200-12-HB4C				B→F	M2106
D1U54S-D-1200-12-HU3C			3.3/5Vdc[3]	F→B	M2107
D1U54S-D-1200-12-HU4C				B→F	M2108

[1] Unless otherwise noted, performance based on +25ºC ambient, nominal Vin, full-rated load, in a free-flowing air environment

[2] 5VSB models, total Pmax.: 1215W; 3.3VSB models, total Pmax.:1210W

[3] User selectable

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Nom.	Max.	Units
DC Input Voltage operating range		-44	-48 - -60	-72	Vdc
Maximum current	-48 - -60Vdc Vin nominal			30	Adc
Inrush Current (see Figure 13)	Cold start, 0-200msec from application of DC input			100	Apk
Reverse Polarity Protection	Reversed input cables; no internal/external fuse failure	+40		+72	Vdc
Efficiency, Vin=54Vdc (see Figure 12)	20% Load	92			%
	50% Load	94			
	100% Load	91			

OUTPUT CHARACTERISTICS

Voltage	Parameter	Conditions	Min.	Nom.	Max.	Units
12V Main	Output Set Point	50% load; Tamb =25°C		12.00		Vdc
	Output Set Point Accuracy		-0.5		+.5	%
	Line and Load Regulation	Setpoint, temperature, line and load	-2		+2	%
	Ripple Voltage & Noise[4]	20MHz bBandwidth			120	mV p-p
	Output Current Range	50°C max.	0		100	A
	Load Capacitance		500		30,000	µF
12VSB	Output Set Point	50% load; Tamb = 25°C		12.00		Vdc
	Line and Load Regulation	Setpoint; temperature; line and load	-5%		+5%	Vdc
	Ripple Voltage & Noise[4]	20MHz Bandwidth			120	mV p-p
	Output Current		0		2	A
	Load Capacitance				1,000	µF
3.3VSB	Output Set Point	50% load; Tamb = 25°C		3.3		Vdc
	Line and Load Regulation	Setpoint; temperature; line and load	-5%		+5%	Vdc
	Ripple Voltage & Noise[4]	20MHz Bandwidth			120	mV p-p
	Output Current		0		3	A
	Load Capacitance				3,000	µF
5.0VSB	Output Set Point	50% load; Tamb = 25°C		5.0		Vdc
	Line and Load Regulation	Setpoint; temperature; line and load	-5%		+5%	Vdc
	Ripple Voltage & Noise[4]	20MHz Bandwidth			120	mV p-p
	Output Current		0		3	A
	Load Capacitance				3,000	µF

[4] Ripple and noise are measured with 0.1µF of ceramic capacitance and 10 µF of tantalum capacitance on each of the power supply outputs. A short coaxial cable to the measurement 'scope input is used.

OUTPUT CHARACTERISTICS CONTINUED

Parameter	Conditions	Min.	Typ.	Max.	Units
Start-up time	DC ramp up			3	s
Transient response, all outputs	50% load step, 1A/µs di/dt from, >10% maximum load			±5 500	% µs
Current sharing accuracy (Main 12V output only)	>10% load; (* percentage of full load)			±5*	%
Hot Swap transients				±5	%
Holdup time	Full input source range; ≤80% max. load	0.9			ms

ENVIRONMENTAL CHARACTERISTICS

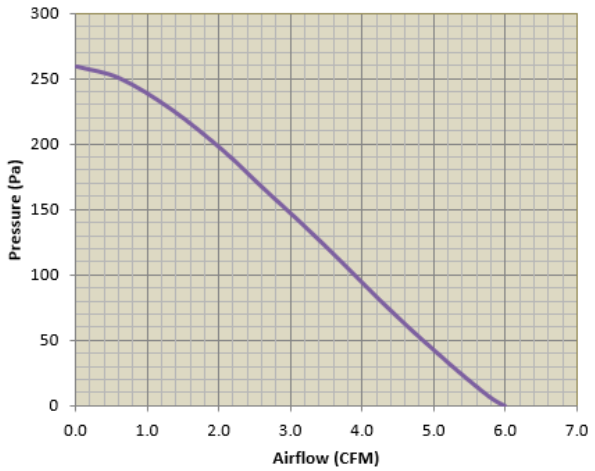
Parameter	Conditions	Min.	Typ.	Max.	Units
Storage Temperature Range		-40		70	°C
Operating Temperature Range	Unobstructed airflow. See the airflow performance curves below for additional conditions.	-5		55	°C
Operating Humidity	Noncondensing	5		92	%
Storage Humidity		5		95	
Altitude (without derating at 40°C)				3000	m
Shock	30G non-operating				
Operational Vibration	Sine sweep; 5-200Hz, 2G; random vibration, 5-500Hz, 1.11G				
MTBF(Target)	Per Telcordia SR-332 M1C1 @40°C		400K		hrs
Safety Certification Standards	IEC 62368-1:2018 EN 62368-1:2020+A11:2020 CSA C22.2 No. 62368-1:19, UL 62368-1, 3rd Edition GB17625.1-2022(Class A), GB4943.1-2022, GB/T9254.1-2021(Class A) TUV SUD: EN IEC 62638-1:2020/A11:2020				
Input Fuse	Power Supply has an internal non-resettable fast blow fuse.				
Weight	Approximately 0.843 KG				

ISOLATION CHARACTERISTICS

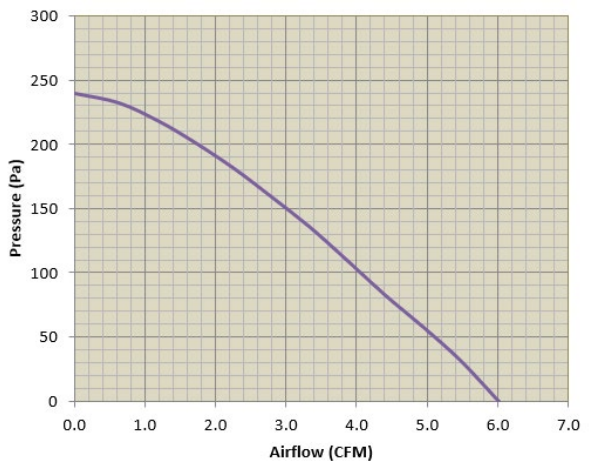
Parameter	Conditions	Min.	Typ.	Max.	Units
Insulation Safety Rating/Test Voltage	Input to Output - Reinforced	1000			Vdc
Functional Isolation (not factory tested)	Output to Chassis	100			Vdc

AIRFLOW CHARACTERISTICS: P-Q CURVES

Front to Back Models



Back to Front Models



PROTECTION CHARACTERISTICS

Output	Parameter	Conditions	Min.	Max.	Units
	Overtemperature (intake)	Auto restart with 4°C hysteresis for recovery (warning issued at 70°C)	70	80	°C
12V	Overvoltage	Latching	13.0	14.5	V
	Overcurrent	The output latches off after 5 automatic retries (1Sec interval between retries). The latch is cleared by toggling PS_ON_L signal (B4) or by recycling the incoming voltage.	105	130	A
12 VSB	Overvoltage	Latching	13.0	14.5	V
	Overcurrent	Hiccup - two seconds between retries while fault condition persists.	2.1	2.8	A
3.3 VSB	Overvoltage	Latching	3.6	4.0	V
	Overcurrent	Hiccup	3.5	4.5	A
5.0 VSB	Overvoltage	Latching	5.4	6.0	V
	Overcurrent	Hiccup	3.5	4.5	A

EMISSIONS AND IMMUNITY

Characteristic	Standard	Compliance
Input Current Harmonics	IEC/EN 61000-3-2	Complies
Voltage Fluctuation and Flicker	IEC/EN 61000-3-3	Complies
Conducted Emissions	FCC 47 CFR Part 15 CISPR 22/EN55022	Class A with 6dB margin
ESD Immunity	IEC/EN 61000-4-2	Level 4 criteria A
Radiated Field Immunity	IEC/EN 61000-4-3	Level 3 criteria A[5]
Electrical Fast Transients/Burst Immunity	IEC/EN 61000-4-4	Level 3 criteria A
Surge Immunity	IEC/EN 61000-4-5	1) EN61000-4-5, Lev. 3 (Com. Mode: 2kV, 12Ω, Diff. Mode: 1kV, 2Ω), criteria A 2) GR-1089-CORE (NEBS) Level 1 Table 4-30 (Com/Diff. Mode: 2kV, 2Ω)
RF Conducted Immunity	IEC/EN 61000-4-6	Level 3 criteria A

[5] Contingent upon final system design.

STATUS LED INDICATORS

LED Name	LED Mode	LED State/Operation	Description
Input LED	OK	Solid Green	Input voltage operating within normal specified range
Input LED	OV/UV WARNING	Blinking Green	Input voltage operating in: 1) overvoltage warning, or 2) undervoltage warning range
Input LED	OFF OR FAULT	Off	Input voltage operating: 1) above over-voltage range, or 2) below under-voltage range, or 3) not present
Output LED	POWER GOOD	Solid Green	Main output and standby output enabled with no power supply warning or fault detected
Output LED	STANDBY	Blinking Green	Standby output enabled with no power supply warning or fault detected
Output LED	WARNING	Blinking Amber	Power supply warning detected as per PMBus™ STATUS_X reporting bytes
Output LED	FAULT	Solid Amber	Power supply fault detected as per PMBus™ STATUS_X reporting bytes

LED status reflects the PMBus status bit flags however while the bit flags are “sticky”, requiring “Clear_Faults” command to be written via PMBus, or recycle of input power. LED state is “real-time” and reflects current conditions, returns to normal as soon as fault or warning condition is removed.

ADDRESS SELECTION TABLE PMBus SLAVE DEVICES

ADDR pin (A3) resistor to GND (K-ohm, 1%)	Power Supply Main Controller (Serial Communications Slave Address)	Power Supply External EEPROM (Serial Communications Slave Address)
0.82	0xB0	0xA0
2.7	0xB2	0xA2
5.6	0xB4	0xA4
8.2	0xB6	0xA6
15	0xB8	0xA8
27	0xBA	0xAA
56	0xBC	0xAC
180	0xBE	0xAE

STATUS AND CONTROL SIGNALS

Signal	I/O	Description	Interface details
INPUT_OK	In	The signal output is driven high when input source is available and within acceptable limits. The output is driven low to indicate loss of input power.	Pulled up internally via 10K to 3.3Vdc. A logic high >2.0Vdc A logic low <0.8Vdc Driven low by internal CMOS buffer (open drain output).
SB_SELECT	In	Selects the standby voltage for the HUxxAC models as follows: • Left Open (no pull down)= 3.3Vdc is selected • Pulled down to VSB Return = 5.0Vdc Once set and PSU operating, changing the setting requires recycling of the input voltage to be activated.	Pulled up internally via 10K to VCC
PW_OK	Out	Asserted (or driven high), by the power supply to indicate that both the main and standby outputs are valid. If any of the outputs fail then this output will be hi-Z or driven low. The output is driven low to indicate that an output is outside of lower limit of regulation.	Pulled up internally to 10K to VDD[1] A logic high >2.0Vdc A logic low <0.8Vdc Driven low by internal CMOS buffer (open drain output).
PS_KILL	In	This signal is used during hot swap to disable the main output during hot swap extraction. The input is pulled up internally to the internal housekeeping supply (within the power supply). The signal is provided on a short (lagging pin) and should be connected to +VSB_Return.	Pulled up internally via 10K to 3.3Vdc. A logic high >2.0Vdc A logic low <0.8Vdc Input is via CMOS Schmitt trigger buffer.
SMB_ALERT	Out	This signal is intended to alert the system when driven low, that the power supply has detected a fault condition, or that a VIN warning level has been detected. Refer to the PMBus ACAN for further details including supported STATUS_XX register bit flags and masking (SMBALERT_MASK supported). The signal is "Sticky" and requires "clear_faults" command to be written via PMBus or recycle of the input power to clear, however, the LED indicator is "real-time", automatically reverts to normal indication once the fault/warn condition is removed.	Pulled up internally via 10K to VDD[1]. A logic high >2.0Vdc A logic low <0.8Vdc Driven low by internal CMOS buffer (open drain output).
PRESENT_L (Power Supply Absent)	Out	The signal is used to detect the presence (installed) of a PSU by the host system. The signal is connected to PSU logic SGND within the PSU.	Passive connection to +VSB_Return. A logic low <0.8Vdc
PS_ON (PSU main output on/off control)	In	This signal is pulled up internally to the internal housekeeping supply (within the power supply). The power supply main 12Vdc output will be enabled when this signal is pulled low to +VSB_Return. In the low state the signal input shall not source more than 1mA of current. The 12Vdc output will be disabled (<0.15 VDC) when the input is driven higher than 2.4V, or is open-circuit. Cycling this signal shall clear latched fault conditions.	Pulled up internally via 10K to VDD[1]. A logic high >2.0Vdc A logic low <0.8Vdc Input is via CMOS Schmitt trigger buffer.
ADDR (Address Select)	In	An analog input that is used to set the address of the internal slave devices (EEPROM and microprocessor) used for digital communications. Connection of a suitable resistor to +VSB_Return, in conjunction with an internal resistor divider chain, will configure the required address.	DC voltage between the limits of 0 and +VDD
SCL (Serial Clock)	Both	Serial clock line compatible with PMBus Power Systems Management Protocol Part 1 – General Requirements Rev 1.1. No additional internal capacitance is added that would affect the speed of the bus. The signal is provided with a series isolator device to disconnect the internal power supply bus in the event that the PSU is unpowered.	VIL is 0.8V maximum VOL is 0.4V maximum when sinking 3mA VIH is 2.1V minimum
SDA (Serial Data)	Both	Serial data line compatible with PMBus Power Systems Management Protocol Part 1 – General Requirements Rev 1.2. The signal is provided with a series isolator device to disconnect the internal power supply bus in the event that the PSU is unpowered.	VIL is 0.8V maximum VOL is 0.4V maximum when sinking 3mA VIH is 2.1V minimum
V1_SENSE & V1SENSE_RTN	In	Remote sense connections intended to be connected at and sense the voltage at the point of load. The voltage sense will interact with the internal module regulation loop to compensate for voltage drops due to connection resistance between the output connector and the load. If remote sense compensation is not required then the voltage can be configured for local sense by: 1. V1_SENSE directly connected to power blades 6 to 10 (inclusive) 2. V1_SENSE_RTN directly connected to power blades 1 to 5 (inclusive)	Compensation for up to 0.12Vdc total connection drop (output and return connections).
ISHARE	Both	The current sharing signal is connected between sharing units (forming an ISHARE bus). It is an input and/or an output (bi-directional analog bus) as the voltage on the line controls the current share between sharing units. A power supply will respond to a change in this voltage but a power supply can also change the voltage depending on the load drawn from it. On a single unit the voltage on the pin (and the common ISHARE bus would read 8VDC at 100% load (module capability). For two identical units sharing the same 100% load this would read 4VDC for perfect current sharing (i.e. 50% module load capability per unit).	Analogue voltage: +8V maximum; 10K to +12V_RTN

STATUS AND CONTROL SIGNALS

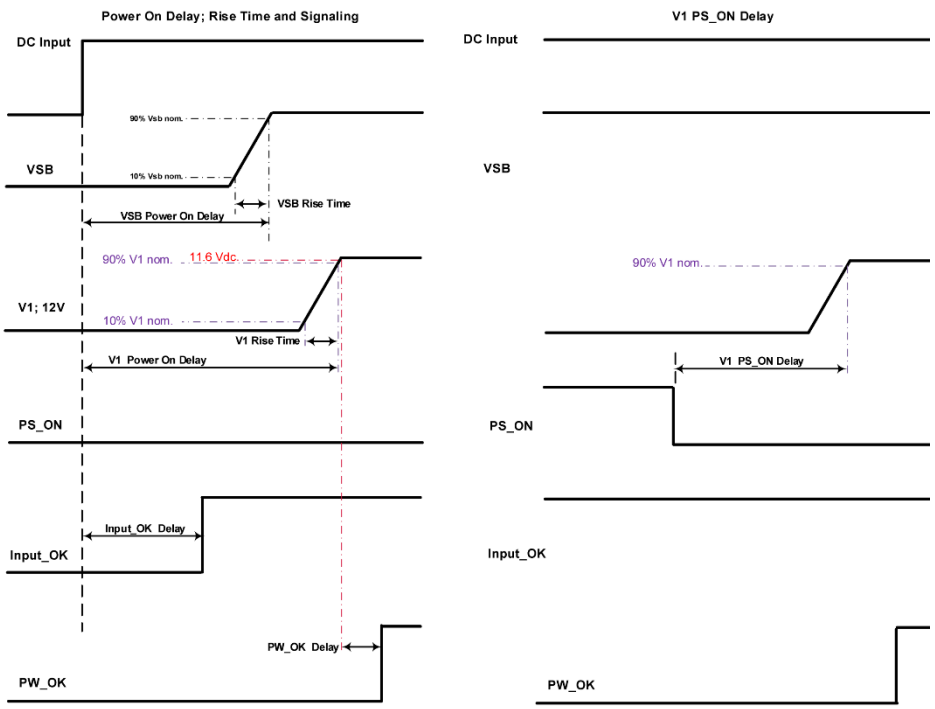
Signal	I/O	Description	Interface details
RAPID_ON Additional details:	BOTH	RAPID_ON is compliant with Intel CRPS (cold redundant feature) and is a two-state analog signal that forms the cold redundant bus. Operation of the Cold redundant feature requires the RAPID_ON signals of up to four (4) installed redundant power supply modules to be tied together within the host/system, forming a common bus; there should be no system loading or interaction with this bus. PMBus write commands are required to activate colder redundant operation. Refer to the application notes for further details. Rapid_ON functions: ■ Pull-up bus voltage: Bus pull-up is provided by the single Power Supply Module, or the first Power Supply Module assigned the roll of "ACTIVE & MASTER" aka "COLD_REDUNDANT ACTIVE". More than one Power Supply Module can be assigned as "ACTIVE" only the first Power Supply Module assigned this roll provides the pull-up path and is why this Power Supply Module is referred to as the "Master". ■ Each bus-connected Power Supply Module drives the Rapid_ON bus low when any fault is detected. ■ Each bus-connected Power Supply Module powers on its main output rapidly within 100µs after detection of LOW state.	RAPID_ON: Tri-State, driven high (3.3VDC) = Cold_Red, Open or High Z = Standard_Red Driven low = Active_Cold_Red

TIMING SPECIFICATIONS

Unless otherwise specified, the following notes apply to all timing specifications:

1. Ta= 25°C, Vin & Vin nom. = -48V
2. Resistive load, 100% full load, both outputs

Turn-On Delay & Output Rise Time:



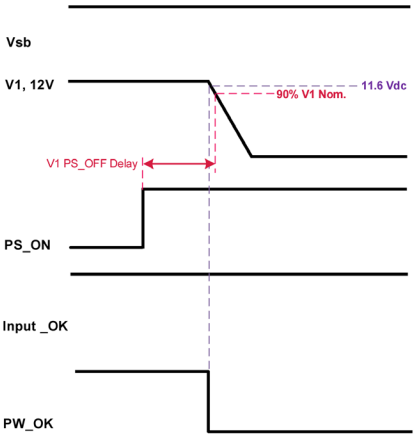
Time	Description	Min.	Max.
Vsb Rise time	Vsb rising from 10% to 90% Vsb nom. (see Figure 2)	100ms	300ms
V1 Rise time	V1 rising from 10% to 90% V1 nom. (see Figure 1)	-	100ms
Vsb Power-on-delay	From the application of Vin nom. to Vsb reaching 90% Vsb, nom. (see Figure 3)	-	3000ms
V1 Power-on-delay	From the application of Vin to V1 reaching 90% of Vout nom. (see Figure 11b)	-	3500ms
V1 PS_ON delay	From PS_ON signal edge to V1 reaching 90% of Vout nom. (see Figure 5)	-	500ms
V1 PW_OK delay	From V1 reaching 11.6V (Typ.) to asserted PW_OK signal (see Figure 6)	170ms	300ms
Input_OK delay	From the application of Vin to the assertion of Input_OK Signal edge (see Figure 7).	270ms	1000ms

TIMING SPECIFICATIONS

Unless otherwise specified, the following notes apply to all timing specifications:

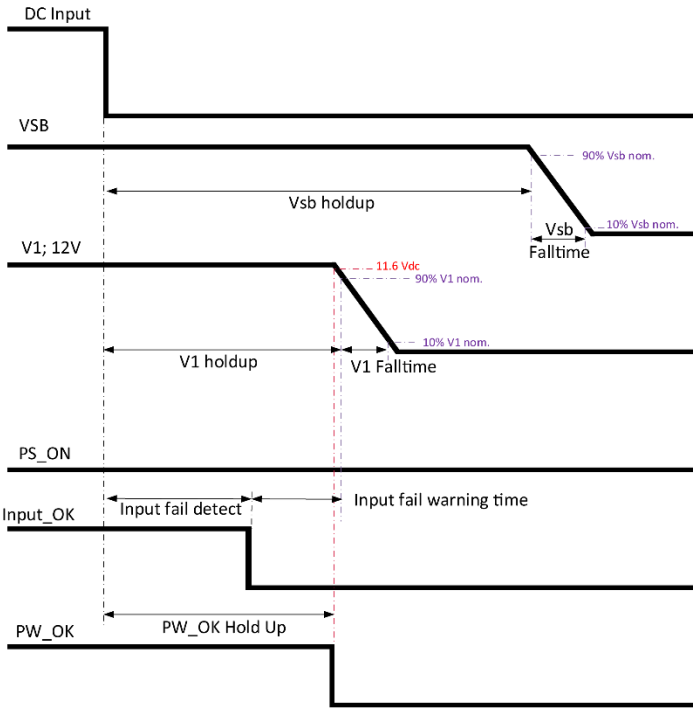
1. Ta= 25°C, Vin & Vin nom. = -48V
2. Resistive load, 100% full load, both outputs

Turn-Off (Shutdown by PS_ON)



Turn-Off Timing	Description	Min.	Typ.	Max.
V1 PS_OFF delay	From the rising edge of PS_ON signal to V1 falling below 90% V1 nom.	0ms	2.5ms	6ms

Power Removal Holdup



Power Removal Timing	Description	Min.	Max.
Vsb holdup	From loss of Vin to Vsb falling to 90%; max. load capacitance	3ms	-
V1 holdup (Total Effective)	From loss of Vin to V1 falling to 90% Vout nom.; 80% load Max output capacitance (see Figure _9)	0.9ms	-
Input fail detect	From loss of Vin to falling edge of Input_OK signal (see Figure 10)	-	1ms
Input fail warning time	From falling edge of Input_fail detect to V1 falling to 90% Vout nom.; See		-
PW_OK Hold Up	From falling edge of Input_fail detect to V1 falling to 90% Vout nom (see Figure 11)	250us	-

PERFORMANCE DATA

Timing Plots: Ta= 25°C, Vin nom. = -48V, 100% load, constant current load setting 100% full load, both outputs; typical performance

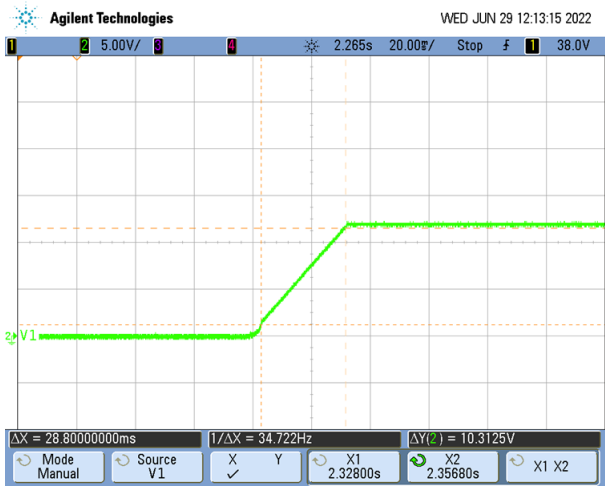


Figure 1: V1 Risetime

Figure 2: VSB Risetime, 5V 3A load, max. capacitance

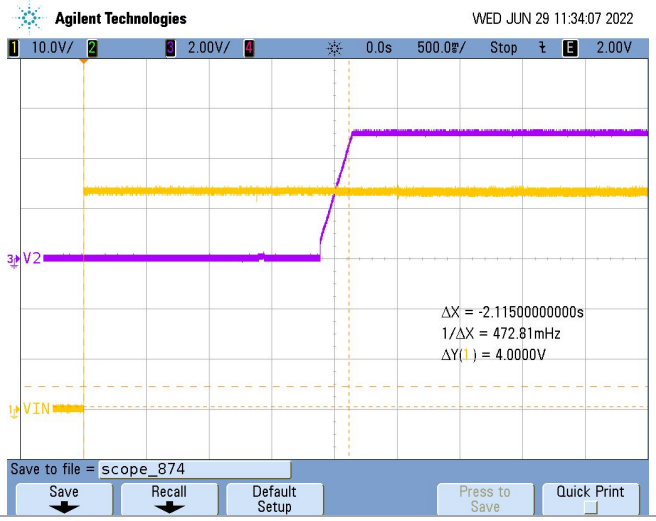


Figure 3: Vsb Power-on-Delay

Figure 4: V1 V2 Power-on-Delay

Figure 5: V1 PS_ON delay

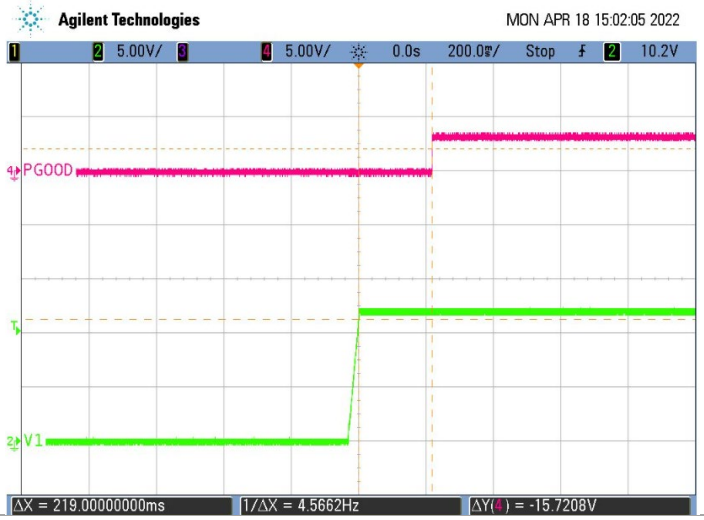


Figure 6: V1 PW_OK delay

PERFORMANCE DATA

Timing Plots: Ta= 25°C, Vin nom. = -48V, 100% load, constant current load setting 100% full load, both outputs; typical performance

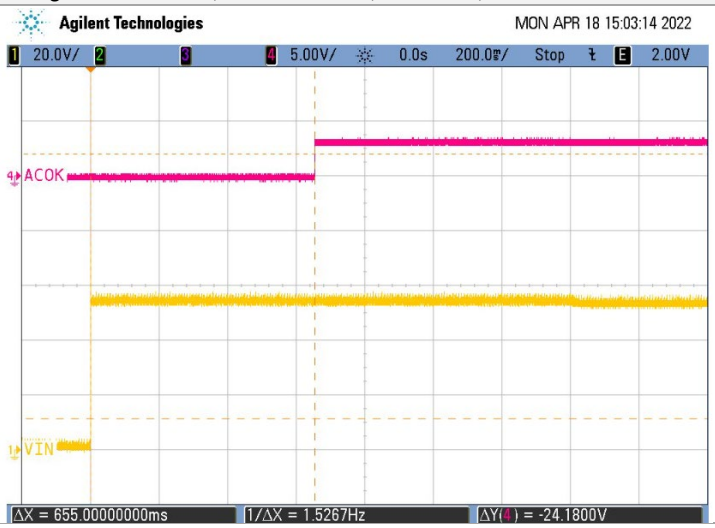


Figure 7: Input_OK delay

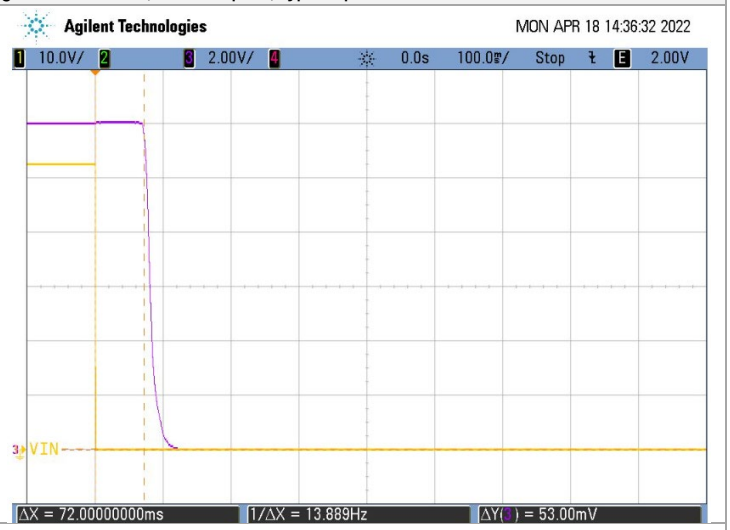


Figure 8: Vsb holdup

Figure 9: V1 holdup

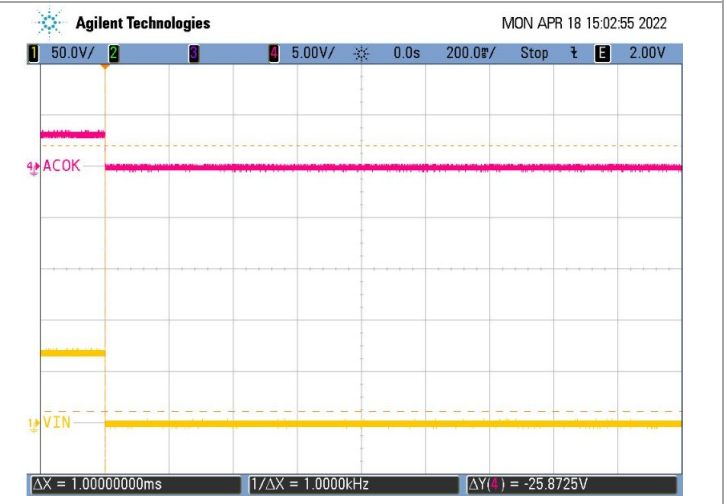


Figure 10: Input fail detect

Figure 11: Input fail warning time

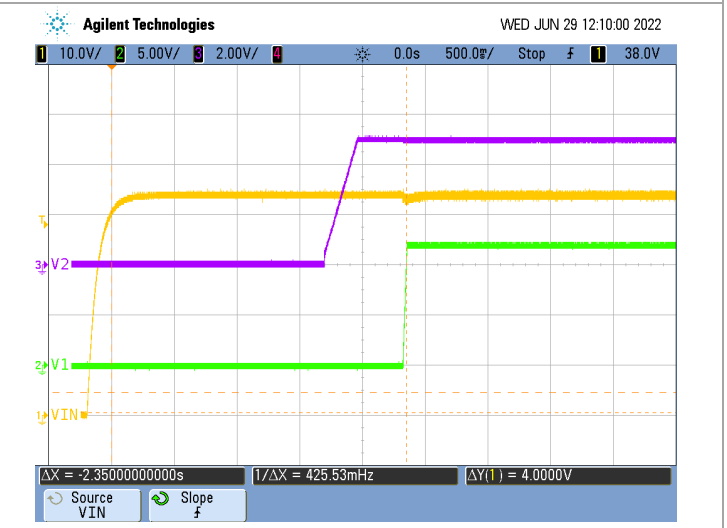


Figure 11b: Output start-up delay

PERFORMANCE DATA

Efficiency = -54Vdc input voltage, Ambient temperature 25ºC, constant current load setting; typical performance

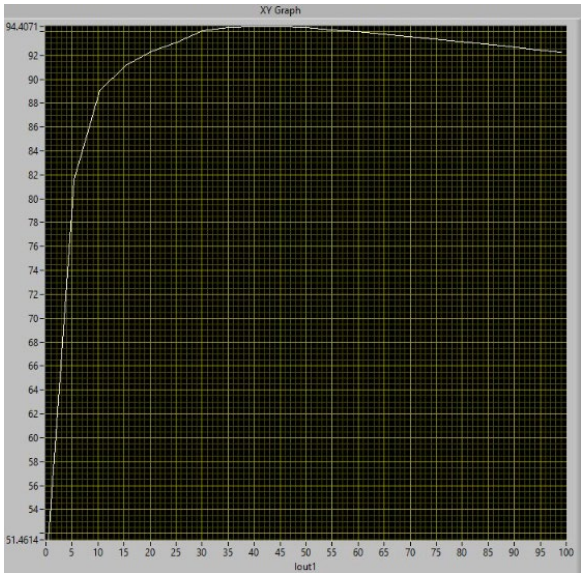


Figure 12

Inrush Current, Cold start, 50Vdc input

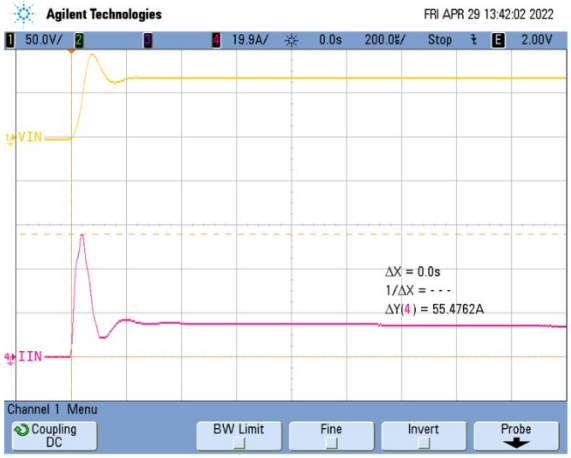
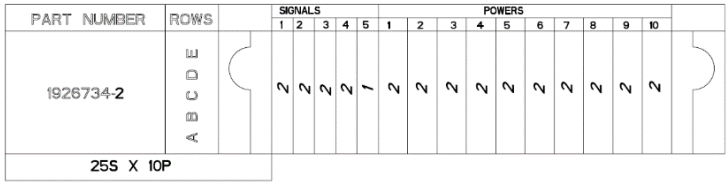
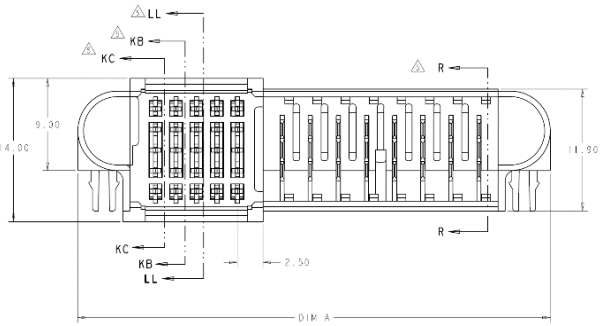


Figure 13

OUTPUT CONNECTOR SPECIFICATION

Power Converter Side: connector TE Connectivity part number 1926734-2, 25 signal / 10 power pins:





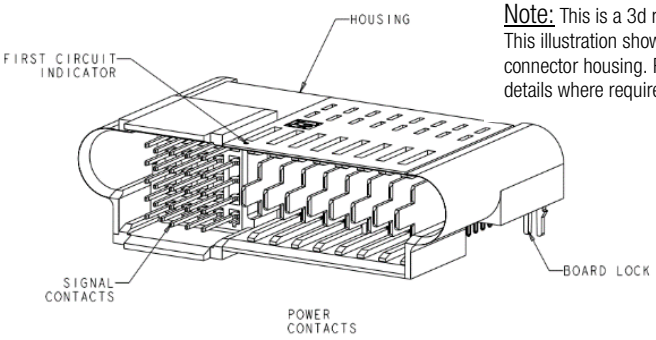


Figure 13

Note: This is a 3d rendering of the smaller variant, 1926734-1 (25 signal / 8 power pins). This illustration shows the cooling slot/holes present across the top surface of the connector housing. Refer to manufacturers 3D model and specifications for additional details where required.

Note "2" refers to the longest signal pin/power blade & "1" is the "shortest" signal pin such that the "shortest" is the "last to make, first to break" in the mating sequence.

Mating (system side) Part Number:

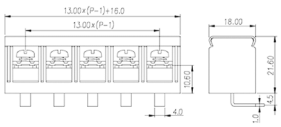
TE Connectivity part number 2-1926739-5

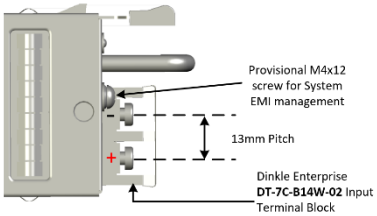
OUTPUT CONNECTOR PIN ASSIGNMENTS

Pin	Signal Name	Comments	Pin	Signal Name	Comments
6,7,8,9,10	V1 (+12VOUT)	+12V Main Output	C3	SDA	I2C Serial Data Line
1, 2, 3, 4, 5	+12V RTN/PGND	+12V Main Output Return	D3	V1_SENSE_R	-VE Remote Sense Return
A1	+VSB	Standby Output	E3	V1_SENSE	+VE Remote Sense
B1	+VSB	Standby Output	A4	SCL	I2C Serial Clock Line
C1	+VSB	Standby Output	B4	PS_ON_L	Remote On/Off (Enable/Disable)
D1	+VSB	Standby Output	C4	SMB_ALERT	Alert signal to the host system
E1	+VSB	Standby Output	D4	Unused	No End User Connection
A2	+VSB_Return	Standby Output Return	E4	INPUT_OK	AC Input Source Present & "OK"
B2	+VSB_Return	Standby Output Return	A5	PS_KILL	Power Supply "kill"; short pin
C2	Rapid_ON	No End User Connection	B5	ISHARE	Active Current Share Bus
D2	Unused	No End User Connection	C5	PW_OK	Power "OK"; short pin
E2	Unused	No End User Connection	D5	SB_SELECT	Standby voltage select pin
A3	ADDR	I2C Address Protocol Selection; (Select address by appropriate pull-down resistor See table for details)	E5	PRESENT_L	Power Module Present; short pin
B3	Unused	No End User Connection			

POWER SUPPLY INPUT TERMINAL BLOCK

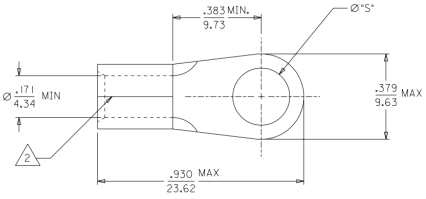
Dinkle Enterprise DT-7C-B14W-02 (2 Position)





Compatible Mating Ring Terminals[1]

Molex 0191930200



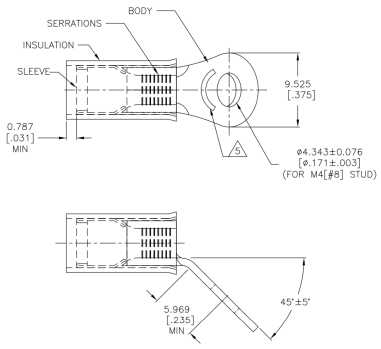
MATERIAL NUMBER	ENGINEERING NUMBER	STUD SIZE	"S" ±.003/(0.08)	PACKAGING
191930198	D-356-06	6	.146/(3.71)	LOOSE PIECE
191930200	D-356-08	8	.173/(4.39)	
191930202	D-356-10	10	.198/(5.03)	
191930204	D-356-14	14	.265/(6.73)	
191930199	D-356-06T	6	.146/(3.71)	TAPE
191930201	D-356-08T	8	.173/(4.39)	
191930203	D-356-10T	10	.198/(5.03)	
191930205	D-356-14T	14	.265/(6.73)	

HUBBELL (Burndy) YA8CLNT8$_{xx}$

XX=BEND ANGLE OPTION:
45=45° and 90=90°

Dinkle Enterprise DT-7C-B14W-02 (2 Position)

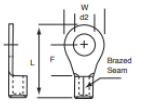
TE Connectivity 195845-1

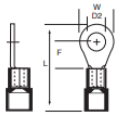


Etlin Daniels 8-NK4

8 AWG RING TERMINALS (8 mm²)

DIMENSIONS					NON-INSULATED			NYLON INSULATED		
STUD SIZE	TONGUE WIDTH (W)		STUD CLEAR (F)		BRAZED SEAM	LENGTH (L)		WITH TIN PLATED COPPER SLEEVE	LENGTH (L)	
(d2)	in	mm	in	mm	PART NUMBER	in	mm	PART NUMBER	in	mm
#8	0.35	8.6	0.22	5.4	**8-NK4**	0.65	15.9	**FN8-NK4**	1.15	28.2
#8	0.47	11.5	0.36	8.8	**8-S4**	0.93	22.8	**FN8-S4**	1.35	33.1
#10	0.35	8.6	0.22	5.4	**8-NK5**	0.65	15.9	**FN8-NK5**	1.15	28.2
#10	0.47	11.5	0.36	8.8	**8-S5**	0.93	22.8	**FN8-S5**	1.35	33.1
1/4"	0.47	11.5	0.36	8.8	**8-S6**	0.93	22.8	**FN8-S6**	1.58	38.7
5/16"	0.59	14.5	0.54	13.2	**8-8**	1.17	28.7	**FN8-8**	1.58	38.7
3/8"	0.59	14.5	0.54	13.2	**8-9**	1.17	28.7	**FN8-9**	1.58	38.7
1/2"	0.78	19.1	0.59	14.5	**8-13**	1.32	38.5	**FN8-13**	1.73	42.4

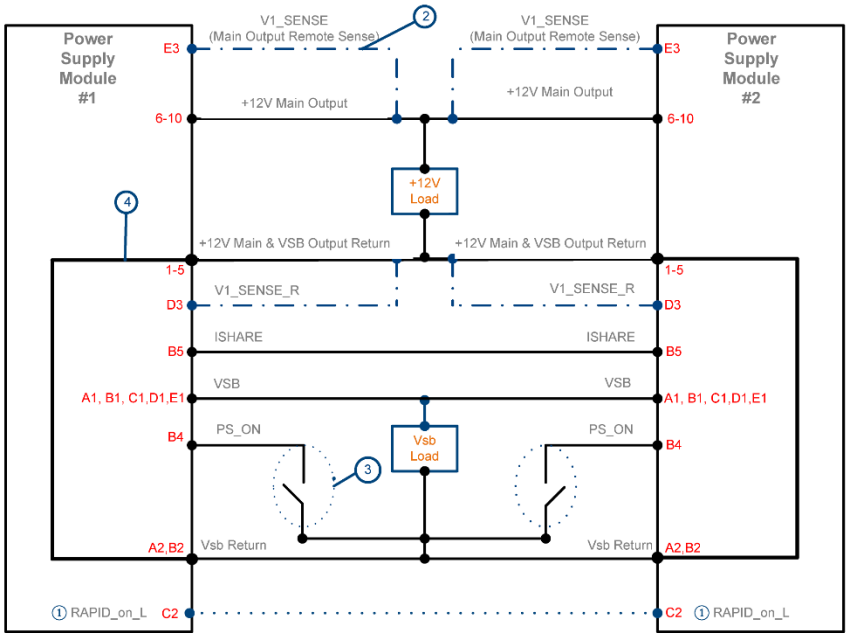




[1] Wire selection for the DC source to power converter input terminal is dependent upon several factors that may vary with each deployment location, application to application. Factors that should be considered by end user when selecting the wire include the distance from power converter module to DC source (impacts voltage drop and therefore gauge), strand count, and insulation requirements including material or type, temperature and voltage ratings, and applicable local safety standards. The ring terminal options listed above are intended to provide a helpful starting point for the end user/system designer in selecting the wire that best meets the needs of each application, and any applicable local safety requirements.

TYPICAL APPLIACTION

WIRING DIAGRAM

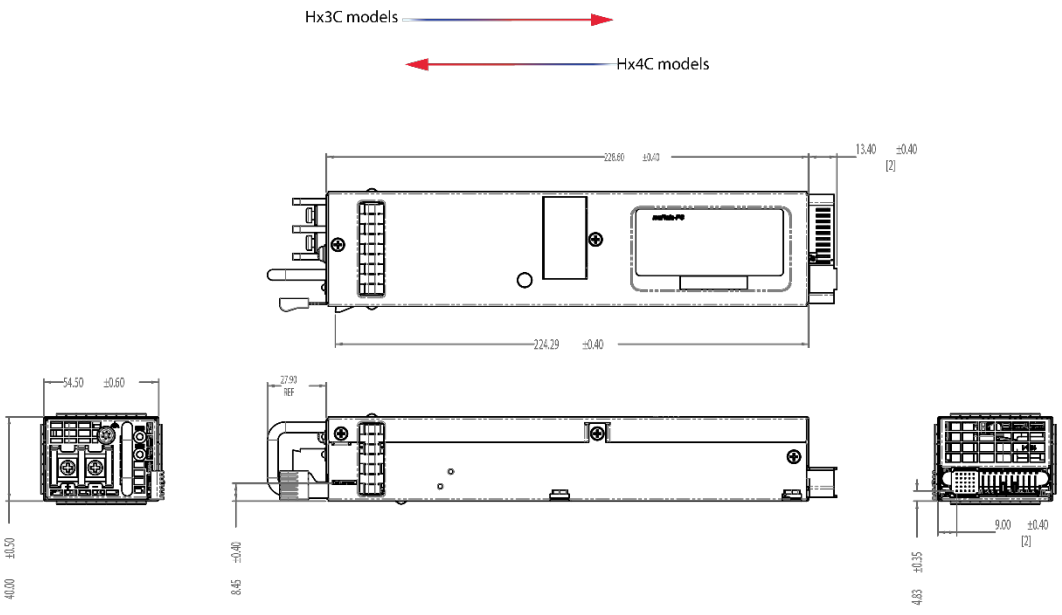


① Pin C2 shown here configured for "RAPID_On" (Cold Redundant bus). For applications requiring an INPUT_OK signal (default setting), refer to "Status and Control Signals" table for details
② Dotted lines show optional remote sense connections. Optional remote sense lines can be attached to a load that is a distance away from the power supply to improve regulation at the load.
③ FET, BJT, wire or switch (debounced) to turn on +12V Main Output
④ Vsb Return is internally connected to main 12V output return within the power supply module

CURRENT SHARING NOTES

1. Main Output current sharing is achieved using the active current share method.
2. Current sharing functions with or without connection of the remote V_SENSE to the common load.
3. +VSB Outputs can be tied together for redundancy however combined output power must not exceed the rated standby power. The +VSB output has an internal ORING MOSFET for additional redundancy/internal short protection.
4. ISHARE pin B5 is connected between sharing units (forming an ISHARE bus). It is an input and/or an output (bi-directional analog bus) as the voltage on the line controls the current share between sharing units. A power supply will respond to a change in this voltage; however, a power supply can also change the voltage depending on the load drawn from it. On a single unit the voltage on the pin (and the common ISHARE bus would read approximately 8VDC at 100% load. For two units sharing the same load this would read approximately 4VDC for perfect current sharing (for example, 50% load per unit). This bus is utilized by the PSU as method of detecting when to change redundancy status when operating in cold redundant mode.
5. The load for both the main 12V and the VSB rails at initial startup should not exceed the ratings of a single PSU. The load can be increased >3 seconds after input voltage is applied, to allow all sharing units to achieve steady state regulation.
6. The Standby output can provide a degree of "droop" current sharing however current sharing accuracy of cannot be guaranteed.

MECHANICAL OUTLINE



Notes:

1) Not all fine details of the actual product is shown and the features of the actual product can vary in appearance. This is a graphical representation intended to facilitate system design. Internal/visible part features, such as screw head patterns (Philips and TORX can be used interchangeable). Plastic part details can differ, such as logos, molding marks, and features for items that can be visible but inside the envelop such as the fan, connector, handle, and latch. For purposes of incoming QA inspection, it is recommended photos of actual sample and or a golden unit/sample be retained for inspection references.
2) Drawing NTS
3) Reference drawing: D75090021061_R1_DC

OPTIONAL ACCESSORIES

Description	Part Number
D1U54P-12-CONC Output Interface Connector Card	D1U54P-12-CONC

APPLICATION NOTES

Document Number	Description	Link
ACAN-64	D1U54P-12-CONC Output Interface Connector Card	URL Link to ACAN-64
ACAN-121	PMBus Communications Protocol	URL Link to ACAN-121
ACAN-112	Cold Redundancy Application Notes	URL Link to ACAN-112

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