



P-DUKE
POWER

URCD10U Series
Chassis-Mount DC-DC Converter
Up to 10 Watts

3
YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT



Railway



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



Medical



PV



3000
VDC
Isolation
Voltage

12:1
Ultra-Wide
Input
Range

FUSE
Installed

HOLD
UP

INRUSH
CURRENT
LIMIT

Internal
EN55032
Class **B**
Filter

LOW
Standby
Power

NO
Min. Load
Required

Operating
Altitude
5000
meter

REMOTE
ON
OFF

REVERSE
POLARITY
PROTECTION

OCP

OVP

SCP

UVP

OTP

PART NUMBER STRUCTURE

URCD10 -	72	S	05	U	-	H	DR
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Hold-up grade Options	Assembly Options	
	72: 14~160	S: Single	3P3: 3.3 05: 5 12: 12 15: 15 24: 24	12:1	☐ : S2 H: S3	☐ : None DR: Din Rail Mounting Type	
		D: Dual	05: ± 5 12: ± 12 15: ± 15				

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25°C unless otherwise noted

Model Number	Input Range	Output Voltage	Output Current @Full Load	Input Current @No Load	Efficiency	Maximum Capacitor Load
	VDC	VDC	mA	mA	%	μF
URCD10-72S3P3U	14 ~ 160	3.3	3000	12	82	3500
URCD10-72S05U	14 ~ 160	5	2000	12	86	2500
URCD10-72S12U	14 ~ 160	12	830	12	86	430
URCD10-72S15U	14 ~ 160	15	670	12	87	350
URCD10-72S24U	14 ~ 160	24	420	12	85	125
URCD10-72D05U	14 ~ 160	±5	±1000	12	82	±1440
URCD10-72D12U	14 ~ 160	±12	±416	12	85	±250
URCD10-72D15U	14 ~ 160	±15	±333	12	86	±180

INPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range			14	72	160	VDC
Input fuse	Slow Blow			1.6		A
In-rush current				15		A
Start up voltage					14	VDC
Shutdown voltage			10	11.5	13	VDC
Start up time	Constant resistive load	Power up		50		ms
Input surge voltage	1 second, max.				200	VDC
Interruption of power supply		EN50155 Class S2	10			ms
		EN50155 Class S3 (Options)	20			ms
Remote ON/OFF	Referred to -Vin pin	Positive logic			Open or 3 ~ 12VDC	
		DC-DC ON			Short or 0 ~ 1.2VDC	
		DC-DC OFF				
		Input current of Ctrl pin	-0.5		+0.5	mA
		Remote off input current		2.5		mA

OUTPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Voltage accuracy		-1.0		+1.0	%
Line regulation	Low Line to High Line at Full Load	-1.0		+1.0	%
Load regulation	No Load to Full Load	Single 3.3Vout, 5Vout 12Vout, 15Vout, 24Vout Dual 5Vout, 12Vout, 15Vout		+1.5 +1.0	%
Cross regulation	Asymmetrical load 25%/100% FL	-5.0		+5.0	%
Voltage adjustability	Single output	3.3Vout, 12Vout Others		+10 +20	%
Ripple and noise	Measured by 20MHz bandwidth	Single 3.3Vout, 5Vout 12Vout, 15Vout 24Vout Dual 5Vout, 12Vout, 15Vout		75 100 125 75 100	mVp-p
Temperature coefficient		-0.02		+0.02	%/°C
Transient response recovery time	25% load step change		250		µs
Over voltage protection		3.3Vout 5Vout 12Vout 15Vout 24Vout		5.4 7.4 19.6 22.0 32.5	VDC
Output indicator				Green LED	
Over load protection	% of Iout rated; Hiccup mode		160		%
Short circuit protection				Continuous, automatic recovery	

GENERAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	3000 2250			VDC
Isolation resistance	500VDC	1			GΩ
Isolation capacitance			6000		pF
Switching frequency	3.3Vout, 5Vout Others	220 200	250 230	280 260	KHz
Safety meets				IEC/ EN/ UL62368-1	
Standard approvals				EN50155 EN45545-2	
Chassis material				Aluminum	
Weight				85g (3.00oz)	
MTBF	MIL-HDBK-217F, Full load			1.343 x 10 ⁶ hrs	

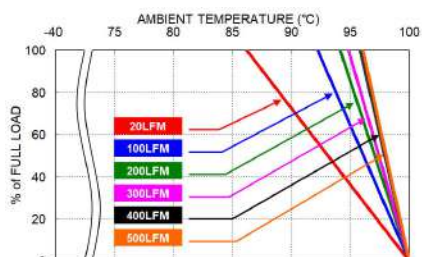
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating case temperature		-40		+100	°C
Maximum case temperature				100	°C
Over temperature protection			113		°C
Storage temperature range		-40		+105	°C
Operating altitude				5000	m
Thermal shock				MIL-STD-810F	
Shock	□□□□□U □□□□□U - DR			EN61373, MIL-STD-810F EN61373, IEC60068-2-27	
Vibration	□□□□□U □□□□□U - DR			EN61373, MIL-STD-810F EN61373, IEC60068-2-6	
Relative humidity				5% to 95% RH	

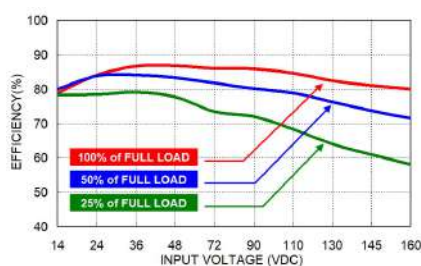
EMC SPECIFICATIONS

Parameter	Conditions	Level
EMI	EN55032, EN50121-3-2	Class B
EMS	EN55035, EN50121-3-2	
ESD	EN61000-4-2 Air $\pm 8\text{kV}$ and Contact $\pm 6\text{kV}$	Perf. Criteria A
Radiated immunity	EN61000-4-3 20 V/m	Perf. Criteria A
Fast transient	EN61000-4-4 $\pm 2\text{kV}$	Perf. Criteria A
Surge	EN61000-4-5 EN55035: $\pm 1\text{kV}$ and EN50121-3-2: $\pm 2\text{kV}$	Perf. Criteria A
Conducted immunity	EN61000-4-6 10 Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8 100A/m continuous; 1000A/m 1 second	Perf. Criteria A

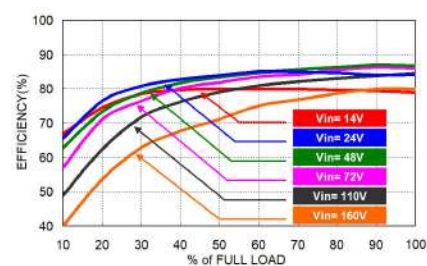
CHARACTERISTIC CURVE



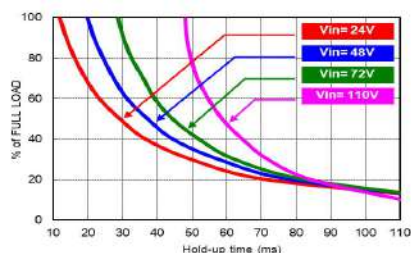
URCD10-72S05U Derating Curve



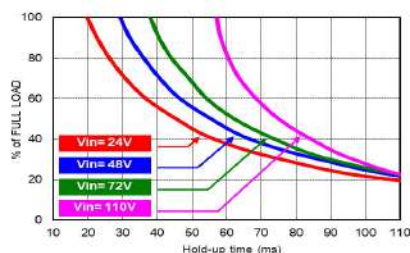
URCD10-72S05U Efficiency vs. Input Voltage



URCD10-72S05U Efficiency vs. Output Load



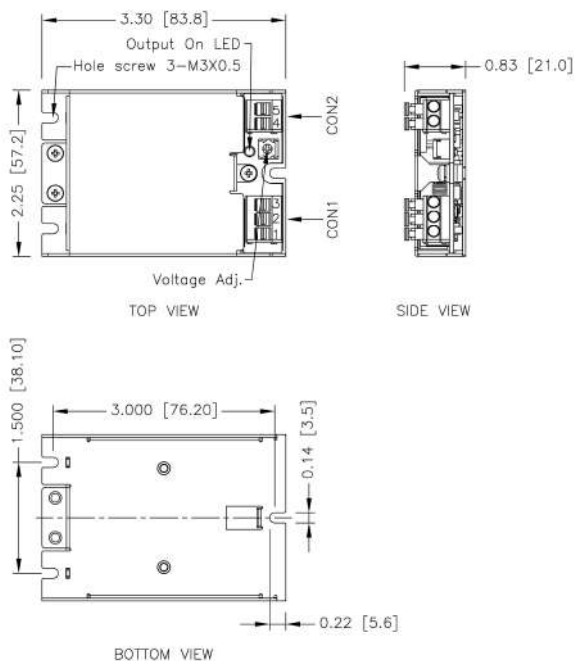
URCD10-72S05U Hold-up Time Curve



URCD10-72S05U-H Hold-up Time Curve (Options)

MECHANICAL DRAWING

CHASSIS MOUNTING TYPE



TERMINAL CONNECTION

NO.	SINGLE
1	+Vin
2	-Vin
3	Ctrl
4	-Vout
5	+Vout

※ Terminals – wire range from 14 to 20 AWG

- All dimensions in Inch [mm]
Tolerance : X.XX±0.02 [X.X±0.5]
X.XXX±0.01 [X.XX±0.25]
- M3x0.5 screw locked torque MAX 3.4kgf-cm/0.33N-m

TERMINAL CONNECTION

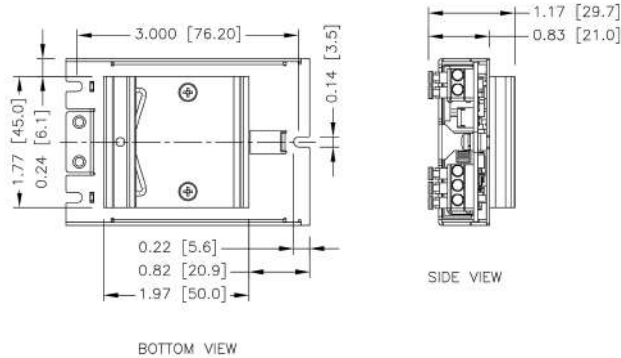
NO.	DUAL
1	+Vin
2	-Vin
3	Ctrl
4	-Vout
5	Common
6	+Vout

※ Terminals – wire range from 14 to 20 AWG

- All dimensions in Inch [mm]
Tolerance : X.XX±0.02 [X.X±0.5]
X.XXX±0.01 [X.XX±0.25]
- M3x0.5 screw locked torque MAX 3.4kgf-cm/0.33N-m

MECHANICAL DRAWING (CONTINUED)

DIN RAIL MOUNTING TYPE (OPTIONS)



1. All dimensions in Inch [mm]
Tolerance : X.XX±0.02 [X.X±0.5]
X.XXX±0.01 [X.XX±0.25]
2. M3x0.5 screw locked torque MAX 3.4kgf-cm/0.33N-m

THERMAL CONSIDERATIONS

The power module operates in a variety of thermal environments. However, sufficient cooling should be provided to help ensure reliable operation of the unit. Heat is removed by conduction, convection, and radiation to the surrounding environment. Proper cooling can be verified by measuring the point as the figure below. The temperature at this location should not exceed "Maximum case temperature". When operating, adequate cooling must be provided to maintain the test point temperature at or below "Maximum case temperature". You can limit this temperature to a lower value for extremely high reliability.

- Thermal test condition with vertical direction by natural convection (20LFM).

