



3
YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



Medical



PV



Railway

CB CE UK
CA

1600
VDC
Isolation
Voltage

2 : 1
Input
Range

FUSE
Installed

INRUSH
CURRENT
LIMIT

Internal
EN55032
Class
Filter **B**

NO
Min. Load
Required

REMOTE
ON
OFF

REVERSE
POLARITY
PROTECTION

OCP

OVP

SCP

PART NUMBER STRUCTURE

UFED20 -	48	S	05	-	N	R	EC
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)		Remote Control Options	Conformal Coating Options	Assembly Options
	12:9.5~18 24:18~36 48:36~75	S:Single	3P3:3.3 05:5 12:12 15:15		☐ :Positive logic N:Negative logic	☐ : None R: Conformal Coating	☐ : None EC: Enclosed Mounting Type DR: Din Rail Mounting Type ED: Enclosed & Din Rail Mounting Type
		D: Dual	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
UFED20-12S3P3	9.5 ~ 18	3.3	5000	117	84	13000
UFED20-12S05	9.5 ~ 18	5	4000	78	86	6800
UFED20-12S12	9.5 ~ 18	12	1670	96	85	2200
UFED20-12S15	9.5 ~ 18	15	1330	43	85	755
UFED20-12D12	9.5 ~ 18	±12	±833	51	85	±680
UFED20-12D15	9.5 ~ 18	±15	±667	58	85	±450
UFED20-24S3P3	18 ~ 36	3.3	5000	31	85	13000
UFED20-24S05	18 ~ 36	5	4000	36	88	6800
UFED20-24S12	18 ~ 36	12	1670	58	86	2200
UFED20-24S15	18 ~ 36	15	1330	44	86	755
UFED20-24D12	18 ~ 36	±12	±833	33	86	±680
UFED20-24D15	18 ~ 36	±15	±667	34	87	±450
UFED20-48S3P3	36 ~ 75	3.3	5000	16	86	13000
UFED20-48S05	36 ~ 75	5	4000	21	88	6800
UFED20-48S12	36 ~ 75	12	1670	37	87	2200
UFED20-48S15	36 ~ 75	15	1330	52	86	755
UFED20-48D12	36 ~ 75	±12	±833	22	87	±680
UFED20-48D15	36 ~ 75	±15	±667	22	87	±450

INPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range	12Vin(nom) 24Vin(nom) 48Vin(nom)		9.5 18 36	12 24 48	18 36 75	VDC
Input fuse	slow blow	12Vin(nom) 24Vin(nom) 48Vin(nom)		6 6 4		A
In-rush current				15		A
Start up time	Constant resistive load	Power up Remote ON/OFF		100 10		ms
Input surge voltage	100ms, max.	12Vin(nom) 24Vin(nom) 48Vin(nom)			36 50 100	VDC
Remote ON/OFF	Referred to –Vin pin	Positive logic DC-DC ON (Standard) DC-DC OFF Negative logic DC-DC ON (Option) DC-DC OFF Input current of Ctrl pin Remote off input current		Open or 3 ~ 12VDC Short or 0 ~ 1.2VDC Short or 0 ~ 1.2VDC Open or 3 ~ 12VDC -0.5 2.5	0.5	mA mA

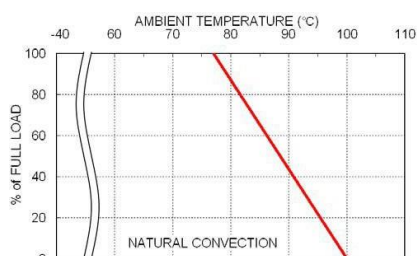
OUTPUT SPECIFICATIONS						
Parameter	Conditions			Min.	Typ.	Max. Unit
Voltage accuracy		3.3Vout Others		-1.5 -1.0		+1.5 +1.0 %
Line regulation	Low Line to High Line at Full Load	Single Dual		-0.2 -0.5		+0.2 +0.5 %
Load regulation	No Load to Full Load	3.3Vout Others		-1.5 -1.0		+1.5 +1.0 %
Cross regulation	Asymmetrical load 25%/100% FL	Dual		-5.0		+5.0 %
Voltage adjustability	Single output			-10		+10 %
Ripple and noise	Measured by 20MHz bandwidth	Single Dual	3.3Vout 5Vout, 12Vout, 15Vout All		60 75 100	mVp-p
Temperature coefficient				-0.02		+0.02 %/°C
Transient response recovery time	25% load step change				250	µs
Over voltage protection	Zener diode clamp	3.3Vout 5Vout 12Vout 15Vout			3.9 6.2 15 18	VDC
Output indicator					Green LED	
Over load protection	% of Iout rated				150	%
Short circuit protection					Continuous, automatic recovery	

GENERAL SPECIFICATIONS						
Parameter	Conditions			Min.	Typ.	Max. Unit
Isolation voltage	1 minute	Input to Output Input (Output) to Chassis		1600 1600		VDC
Isolation resistance	500VDC			1		GΩ
Isolation capacitance						4000 pF
Switching frequency				450	500	550 kHz
Safety approvals	IEC/ EN/ UL62368-1					UL:E193009 CB:UL(Demko)
Chassis material						Aluminum
Conformal coating						Impregnating varnish
Weight						89g (3.13oz)
MTBF	MIL-HDBK-217F, Full load					2.073 x 10 ⁶ hrs

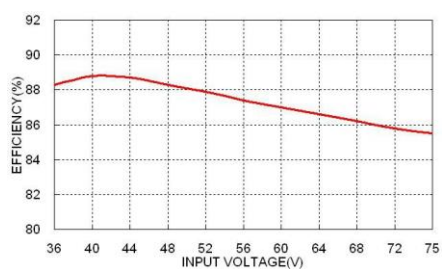
ENVIRONMENTAL SPECIFICATIONS						
Parameter	Conditions			Min.	Typ.	Max. Unit
Operating ambient temperature		With derating		-40		+100 °C
Storage temperature range				-40		+105 °C
Thermal shock						MIL-STD-810F
Vibration		□□S□□ -□□ □□S□□ -□□EC □□S□□ -□□DR □□S□□ -□□ED				MIL-STD-810F MIL-STD-810F IEC60068-2-6 IEC60068-2-6
Relative humidity						5% to 95% RH

EMC SPECIFICATIONS		
Parameter	Conditions	Level
EMI	EN55032	Class B
EMS	EN55024	
ESD	EN61000-4-2 Air $\pm 8\text{kV}$ and Contact $\pm 6\text{kV}$	Perf. Criteria A
Radiated immunity	EN61000-4-3 10V/m	Perf. Criteria A
Fast transient	EN61000-4-4 $\pm 2\text{kV}$	Perf. Criteria A
Surge	EN61000-4-5 $\pm 0.5\text{kV}$	Perf. Criteria A
Conducted immunity	EN61000-4-6 10Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8 100A/m continuous; 1000A/m 1 second	Perf. Criteria A

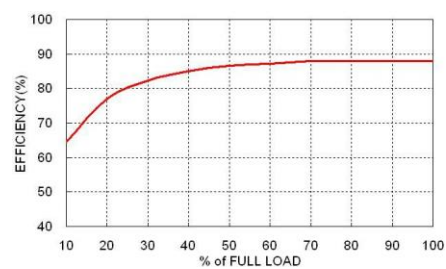
CHARACTERISTIC CURVE



UFED20-48S05 Derating Curve



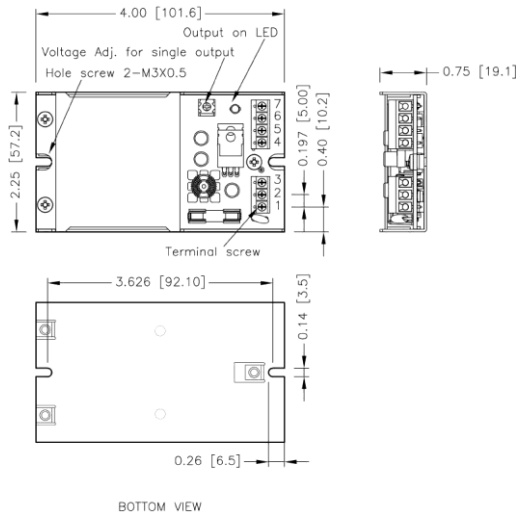
UFED20-48S05 Efficiency vs. Input Voltage



UFED20-48S05 Efficiency vs. Output Load

MECHANICAL DRAWING

CHASSIS MOUNTING TYPE



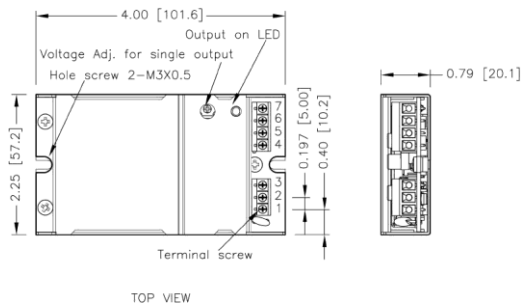
TERMINAL CONNECTION

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

- ※ NC : No Connection
- ※ Screw terminals – wire range from 14 to 18 AWG

1. All dimensions in Inch [mm]
2. Tolerance : $X.XX \pm 0.02$ [$X.X \pm 0.5$]
 $X.XXX \pm 0.01$ [$X.XX \pm 0.25$]
3. Hole screw locked torque :
MAX 5.0kgf - cm/0.49N - m
4. Terminal screw locked torque :
MAX 2.5kgf - cm/0.25N - m

ENCLOSED MOUNTING TYPE



DIN RAIL MOUNTING TYPE

