



DC-DC Converter

98DW20-R3 SERIES

20Watt 3KV Isolated

4 : 1 Input Voltage Range

Single & Dual Output

2" x 1"



FEATURES :

- 20 Watt Package
- 4:1 Wide Input Voltage
- 100% Burned In
- High Efficiency to 89%
- Customized Solutions Available
- Remote Control: On/Off
- UL94V-0 Package Material
- Operating Temperature:-40°C to +87°C
- 3 Years Warranty
- Regulated Output Types
- EN 50155 Approval for Railway Applications

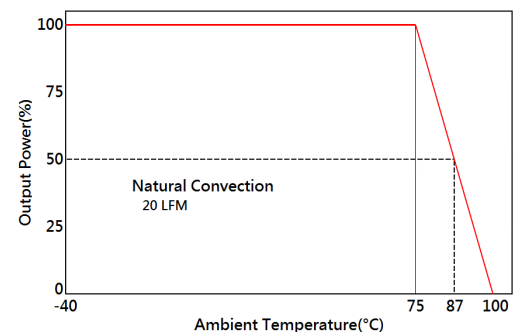
Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

Part Number	Input Voltage Range	Nominal Input Voltage (mA TYP)		Output Voltage Range	Output Current	Efficiency
	Vdc	No-Load	Full Load	Vdc	mA	%TYP
98DW20-24S03R3NL	9-36	7	736	3.3	4500	84
98DW20-24S05R3NL	9-36	7	968	5	4000	86
98DW20-24S12R3NL	9-36	7	946	12	1670	88
98DW20-24S15R3NL	9-36	7	946	15	1330	88
98DW20-48S03R3NL	18-75	6	368	3.3	4500	84
98DW20-48S05R3NL	18-75	6	484	5	4000	86
98DW20-48S12R3NL	18-75	6	473	12	1670	88
98DW20-48S15R3NL	18-75	6	473	15	1330	88
98DW20-110S03R3NL	40-160	5	165	3.3	4500	82
98DW20-110S05R3NL	40-160	5	214	5	4000	85
98DW20-110S12R3NL	40-160	5	211	12	1670	86
98DW20-110S15R3NL	40-160	5	211	15	1330	86
98DW20-24D12R3NL	9-36	7	946	±12	±833	88
98DW20-24D15R3NL	9-36	7	958	±15	±667	87
98DW20-48D12R3NL	18-75	6	473	±12	±833	88
98DW20-48D15R3NL	18-75	6	479	±15	±667	87
98DW20-110D12R3NL	40-160	5	211	±12	±833	86
98DW20-110D15R3NL	40-160	5	214	±15	±667	85

Input Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Types				4:1	
Surge Voltage (1 sec. max.)	24V models			50	Vdc
	48V models			100	Vdc
	110V models			170	Vdc
Input Filter	PI Type				
Reflected ripple current			30		mAp-p
Remote ON/OFF (Refer to -Vin PIN)	Positive Logic				
	ON: Open	3		12	Vdc
	OFF: Short	0		1.2	Vdc
	Input current of Ctrl PIN	0.5		0.5	mA
Remote off input current		3			mA

Temperature Derating Graph



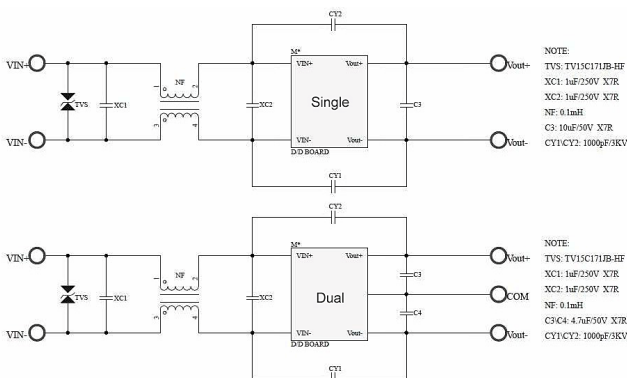
Output Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% full load			±2	%
Short Circuit Protection	Continuous, Auto-Recovery				
Output Power Protection	Continuous, Auto-Recovery	120		170	%
Over Voltage Protection	3.3Vdc	3.7		5.4	Vdc
	5Vdc	5.6		7.0	Vdc
	12Vdc	13.5		19.6	Vdc
	15Vdc	16.8		20.5	Vdc
Line Regulation	Nominal Input Voltage			±0.5	%
Load Regulation	Single output models			±0.5	%
	Dual output models			±5	%
Ripple & Noise (BW=DC To 20MHz Measured with a 10uF MLCC.)	3.3V&5.0V models			75	mVp-p
	Other models			100	mVp-p
Start up time	Nominal Input Voltage			30	ms
Transient response setting time	25% load step change		350		us

General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Isolation Voltage	Input To Output	3000			Vdc
	Input(Output) To Case	1600			Vdc
Isolation Resistance	500Vdc	1000			MΩ
Switching Frequency	Full load, nominal input		330		KHz
Operating Temperature		-40		87	°C
Storage Temperature		-55		125	°C
Case Temperature				105	°C
Humidity	Non Condensing	5		95	%
Cooling	Natural Convection (20LFM)				
Case material	Six-side shield case				
MTBF	MIL-HDBK-217F@25°C	150000			Hours
Weight			30		g
Dimensions			50.8x25.4x10.6		mm

Recommended Test Circuit

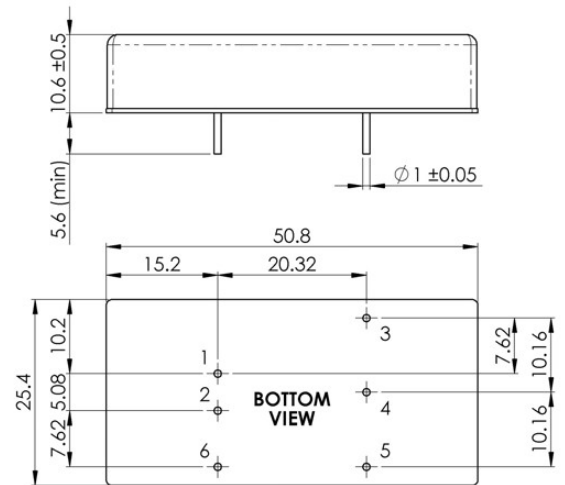


Part Number

98DW20 - $\frac{24}{B}$ $\frac{S}{C}$ $\frac{05}{D}$ $\frac{R}{E}$ $\frac{3}{F}$ $\frac{NL}{G}$

- A : Series
- B : Input Voltage
- C : Single(S), Dual(D) Output
- D : Output Voltage
- E : Regulated (R)
- F : Package
- G : RoHS Version

Dimensions



Unit : mm
Tolerance : XX.X ± 0.5 , XX.XX ± 0.25

PIN Assignment

Pin	1	2	3	4	5	6
Single	+Vin	-Vin	+Vout	Trim	-Vout	Remote ON/OFF
Dual	+Vin	-Vin	+Vout	COM	-Vout	Remote ON/OFF