

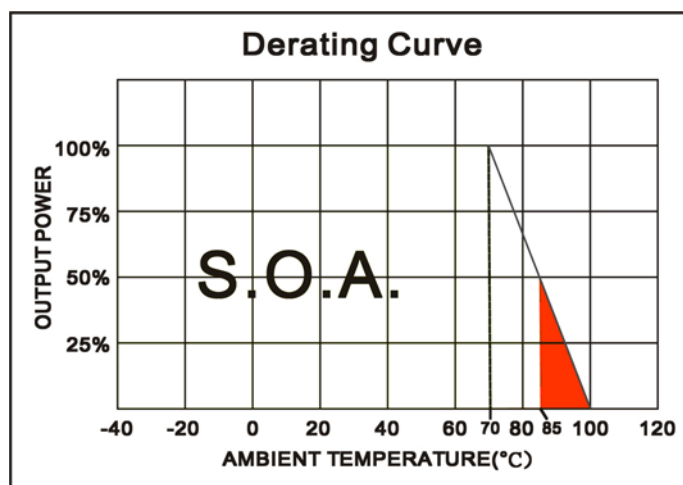
20W DC-DC Converter P20D-Series

- High efficiency up to 93%
- 2:1 wide input voltage range
- Over current protection
- Over voltage protection
- Continuous short circuit protection
- Adjustable output voltage
- On/Off - remote control input
- Soft start
- Standard 2" x 1" x 0.4" package



Model selection guide

Typ	Input voltage range [V _{DC}]	Input current		Output voltage [V _{DC}]	Output current range [mA]	Efficiency typ. [%]	Capacitor load max. (3) [μF]
		no-load [mA]	full-load [mA]				
Single output							
P20D123R3S	9...18	60	1740	3.3	0...5500	90	10000
P20D1205S	9...18	60	1870	5	0...4000	92	6800
P20D1212S	9...18	30	1920	12	0...1670	90	1000
P20D1215S	9...18	30	1920	15	0...1330	90	680
P20D243R3S	18...36	35	860	3.3	0...5500	91	10000
P20D2405S	18...36	35	925	5	0...4000	93	6800
P20D2412S	18...36	25	945	12	0...1670	91	1000
P20D2415S	18...36	25	947	15	0...1330	91	680
P20D483R3S	36...75	25	425	3.3	0...5500	91	10000
P20D4805S	36...75	25	465	5	0...4000	93	6800
P20D4812S	36...75	15	475	12	0...1670	91	1000
P20D4815S	36...75	15	475	15	0...1330	91	680
Dual output							
P20D1212D	9...18	30	1940	±12	0...±835	89	2 x 470
P20D1215D	9...18	30	1940	±15	0...±665	89	2 x 330
P20D2412D	18...36	30	960	±12	0...±835	90	2 x 470
P20D2415D	18...36	30	960	±15	0...±665	90	2 x 330
P20D4812D	36...75	20	480	±12	0...±835	90	2 x 470
P20D4815D	36...75	20	485	±15	0...±665	89	2 x 330



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Specifications

Input	
Input Filter:	Pi- type
Under voltage lockout	12V type: on @ 8.6V, off @ 7.9V 24V type: on @ 17.8V, off @ 16V 48V type: on @ 33.5V, off @ 30.5V
Input surge voltage 100 ms max.	24 V input : -0.7...50 V _{DC} 48 V input : -0.7...100 V _{DC}
Start up time	20ms typ.
Remote "off" input current	5mA @ nominal Vin
Reflected ripple Input current	20mA _{p-p} , typ (5)
Isolation	
Isolation voltage	Input to output 1600 V _{DC} , 3sec.
Resistance	10 ⁹ Ω, min
Capacitance	1200 pF, max
Output	
over voltage protection with Z-diode clamp	3.3V-output-type 3.9V 5V-output-type 6.2V (± 6.2V) (±)12V-output-type 15V (±15V) (±)15V-output-type 18V (±18V)
Voltage accuracy	±1%
Voltage adjustability	±10% (only for single output)
Cross regulation @ dual output	±5% (1)
Ripple and noise (at 20 MHz BW)	75mV _{p-p} (2)
Short circuit protection	Hiccup, automatics recovery
Over load protection	140% typ. of full load
Line regulation	± 0.5%
Load regulation	single: ±0.5% @ 0...100% load dual: ±1%, max. @ blanced load
Temperature coefficient	± 0.02% / °C
Transient recovery time	250μs (4)
Transient response deviation	±3%...(4)

General	
Switching frequency	330 kHz, typ.
Standard in accordance with	IEC 60950-1 EN60950-1
Conducted and radiated emissions	EN55022 level A (7)
ESD	EN61000-4-2 pref. Criteria B
Radiated immunity	EN61000-4-3 pref. criteria A
Fast transient	EN61000-4-4 pref. criteria B
Surge	EN61000-4-5 pref. criteria B (8)
Conducted immunity	EN61000-4-6 pref. criteria A
PFMF	EN61000-4-8 pref. criteria A
MTBF	>680khrs
Environmental	
Operating temperature	-40°C to +85°C (with derating)
Cooling	Free-air convection
Storage temperature	-40°C to +125°C
Maximum case temp.	+100°C
Humidity	95% rel. Humidity
Physical	
Dimensions	50.8 x 25.4 x 10.2 mm
Weight	30 g
Case material	Nickel-coated copper
Potting material	Epoxy (UL94-V0)
Remote control input (6)	
Remote control on	Open input or 3.0V...12V
Remote control off	Short to "-Vin" or 0V...1.2V
Absolute specifications (9)	
Soldering temperature	260°C, 10s, 1.5mm from case
Input voltage max. for 100ms	12 Vin types: 0.7...36Vdc 24 Vin types: 0.7...50Vdc 48 Vin types: 0.7...100Vdc

Efficiency vs output current

