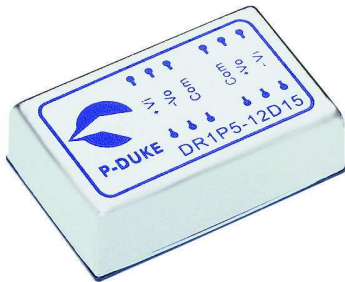


# POWER MATE TECHNOLOGY

# DR1P5-SERIES



## FEATURES

- 1.5 WATTS REGULATED OUTPUT POWER
- OUTPUT CURRENT UP TO 300mA
- STANDARD 1.25 X 0.80 X 0.40 INCH
- HIGH EFFICIENCY UP TO 55%
- INPUT RANGE FROM 4.5VDC TO 5.5VDC, 10.8VDC TO 13.2VDC, AND 21.6VDC TO 26.4VDC
- FIVE-SIDED EMI SHIELD
- LOW OUTPUT RIPPLE & NOISE
- PI TYPE INPUT FILTER
- 500VDC ISOLATION VOLTAGE
- STANDARD 24 PIN DIP PACKAGE & SMD TYPE PACKAGE
- CE MARK MEETS 2006/95/EC, 93/68/EEC AND 2004/108/EC
- DESIGN MEETS UL60950-1, EN60950-1 AND IEC60950-1
- ISO9001 CERTIFIED MANUFACTURING FACILITIES
- COMPLIANT TO RoHS EU DIRECTIVE 2002/95/EC

## APPLICATIONS

Wireless Network  
Telecom/Datacom  
Industry Control System  
Measurement Equipment  
Semiconductor Equipment

## OPTIONS

SMD TYPE

## DESCRIPTION

The DR1P5 series offer 1.5 watts of output power from a package in an IC compatible 24 pin DIP configuration without derating to 71°C ambient temperature and pin to pin compatible to MKC03 series. DR1P5 series have input voltage of 4.5-5.5, 10.8-13.2 and 21.6-26.4VDC.

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

OUTPUT SPECIFICATIONS	
Output power	1.5 Watts, max.
Voltage accuracy	Full load and nominal Vin ± 4%
Minimum load	0%
Line regulation	LL to HL at Full Load ± 0.3%
Load regulation	25% to 100% FL D05 output others ± 1.5% ± 0.5%
Cross regulation	Asymmetrical load 25% / 100% FL ± 5%
Ripple and noise	20MHz bandwidth See table
Temperature coefficient	±0.02% / °C, max.
Short circuit protection	Short term
GENERAL SPECIFICATIONS	
Efficiency	See table
Isolation voltage	500VDC, min.
Isolation resistance	10 <sup>9</sup> ohms, min.
Isolation capacitance	30pF, max.
Switching frequency	20KHz, min.
Design meet safety standard	IEC60950-1, UL60950-1, EN60950-1
Case material	Nickel-coated copper
Base material	Non-conductive black plastic
Potting material	Epoxy (UL94-V0)
Dimensions	1.25 X 0.80 X 0.40 Inch (31.8 X 20.3 X 10.2 mm)
Weight	DIP 16g (0.55oz) SMD 18g (0.62oz)
MTBF (Note 1)	BELLCORE TR-NWT-000332 5.531 x 10 <sup>6</sup> hrs MIL-HDBK-217F 3.827 x 10 <sup>6</sup> hrs

INPUT SPECIFICATIONS	
Input voltage range	5V nominal input 4.5 – 5.5VDC 12V nominal input 10.8 – 13.2VDC 24V nominal input 21.6 – 26.4VDC
Input filter	Pi type
ENVIRONMENTAL SPECIFICATIONS	
Operating ambient temperature	-30°C ~ +71°C
Maximum case temperature	+100°C
Storage temperature range	-55°C ~ +105°C
Thermal impedance	Nature convection 20°C/watt
Thermal shock	MIL-STD-810F
Vibration	MIL-STD-810F
Relative humidity	5% to 95% RH
EMC CHARACTERISTICS	
EMI	EN55022 Class A

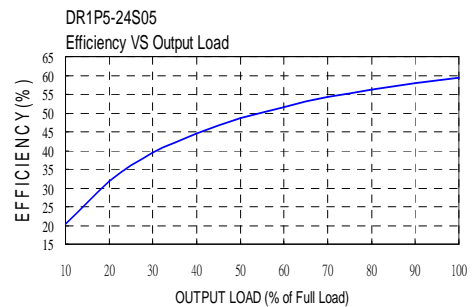
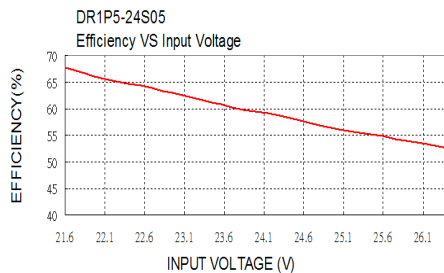
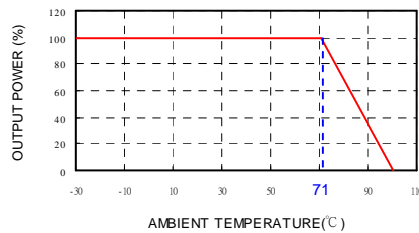


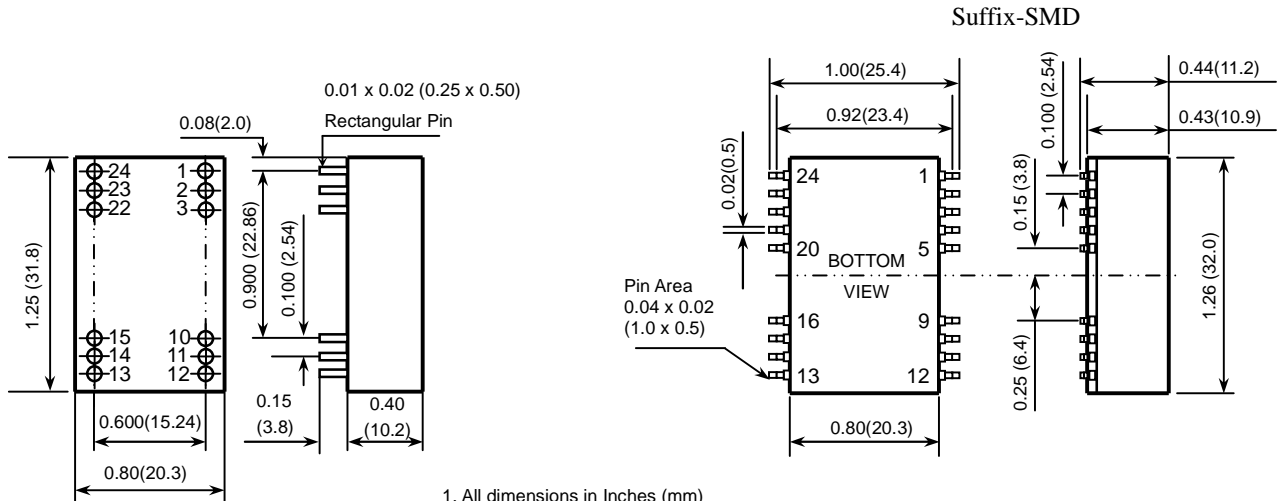
Model Number	Input Range	Output Voltage	Output Current		Output (4) Ripple & Noise	Input Current		Eff (4) (%)	Capacitor Load max <sup>(5)</sup>
			Min. load	Full load		No load (3)	Full load (2)		
DR1P5-05S05	4.5 – 5.5 VDC	5 VDC	0mA	300mA	50mVp-p	65mA	600mA	54	470µF
DR1P5-05S12	4.5 – 5.5 VDC	12 VDC	0mA	125mA	50mVp-p	80mA	625mA	52	330µF
DR1P5-05S15	4.5 – 5.5 VDC	15 VDC	0mA	100mA	50mVp-p	95mA	588mA	55	330µF
DR1P5-05D05	4.5 – 5.5 VDC	± 5 VDC	0mA	200mA/-100mA	50mVp-p	50mA	682mA	48	330µF
DR1P5-05D12	4.5 – 5.5 VDC	± 12 VDC	0mA	± 60mA	50mVp-p	90mA	613mA	51	110µF
DR1P5-05D15	4.5 – 5.5 VDC	± 15 VDC	0mA	± 50mA	50mVp-p	100mA	600mA	54	110µF
DR1P5-12S05	10.8 – 13.2 VDC	5 VDC	0mA	300mA	50mVp-p	30mA	245mA	55	470µF
DR1P5-12S12	10.8 – 13.2 VDC	12 VDC	0mA	125mA	50mVp-p	30mA	260mA	52	330µF
DR1P5-12S15	10.8 – 13.2 VDC	15 VDC	0mA	100mA	50mVp-p	40mA	245mA	55	330µF
DR1P5-12D05	10.8 – 13.2 VDC	± 5 VDC	0mA	200mA/-100mA	50mVp-p	30mA	278mA	49	330µF
DR1P5-12D12	10.8 – 13.2 VDC	± 12 VDC	0mA	± 60mA	50mVp-p	45mA	255mA	51	110µF
DR1P5-12D15	10.8 – 13.2 VDC	± 15 VDC	0mA	± 50mA	50mVp-p	40mA	250mA	54	110µF
DR1P5-24S05	21.6 – 26.4 VDC	5 VDC	0mA	300mA	50mVp-p	20mA	125mA	54	470µF
DR1P5-24S12	21.6 – 26.4 VDC	12 VDC	0mA	125mA	50mVp-p	20mA	130mA	52	330µF
DR1P5-24S15	21.6 – 26.4 VDC	15 VDC	0mA	100mA	50mVp-p	20mA	123mA	55	330µF
DR1P5-24D05	21.6 – 26.4 VDC	± 5 VDC	0mA	200mA/-100mA	50mVp-p	15mA	142mA	48	330µF
DR1P5-24D12	21.6 – 26.4 VDC	± 12 VDC	0mA	± 60mA	50mVp-p	20mA	128mA	51	110µF
DR1P5-24D15	21.6 – 26.4 VDC	± 15 VDC	0mA	± 50mA	50mVp-p	20mA	125mA	54	110µF

### Note

1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C. MIL-HDBK-217F Notice2 @Ta=25 °C, Full load(Ground, Benign, controlled environment).
2. Maximum value at nominal input voltage and full load of standard type.
3. Typical value at nominal input voltage and no load.
4. Typical value at nominal input voltage and full load.
5. Test by minimum Vin and constant resistive load.

DR1P5-24S05 Derating Curve





- All dimensions in Inches (mm)  
Tolerance: X.XX±0.02 (X.X±0.5)  
X.XXX±0.01 (X.XX±0.25)
- Pin pitch tolerance ±0.01(0.25)
- Pin dimension tolerance ±0.004 (0.1)

DIP PIN CONNECTION					
PIN	SINGLE	DUAL	PIN	SINGLE	DUAL
1	+ INPUT	+ INPUT	24	+ INPUT	+ INPUT
2	NC	- OUTPUT	23	NC	- OUTPUT
3	NC	COMMON	22	NC	COMMON
10	-OUTPUT	COMMON	15	- OUTPUT	COMMON
11	+OUTPUT	+OUTPUT	14	+OUTPUT	+OUTPUT
12	- INPUT	- INPUT	13	- INPUT	- INPUT

SMD PIN CONNECTION					
PIN	SINGLE	DUAL	PIN	SINGLE	DUAL
1	+ INPUT	+ INPUT	24	+ INPUT	+ INPUT
2	NC	- OUTPUT	23	NC	- OUTPUT
3	NC	COMMON	22	NC	COMMON
10	-OUTPUT	COMMON	15	-OUTPUT	COMMON
11	+OUTPUT	+OUTPUT	14	+OUTPUT	+OUTPUT
12	- INPUT	- INPUT	13	- INPUT	- INPUT
Others	NC	NC	Others	NC	NC