

## 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, 2011/95/EC and 2004/108/EC
- SAFETY MEETS UL60950-1, EN60950-1, IEC60950-1
- ISO9001 CERTIFIED MANUFACTURING FACILITIES
- COMPLIANT TO RoHS EU DIRECTIVE 2011/65/EU

## 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 4.5~5.5VDC, 10.8~13.2VDC 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	± 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 (Note 5)	1 Sec.		
GENERAL SPECIFICATIONS			
Efficiency	See table		
Isolation voltage	Input to Output	500VDC, min. 1minute	
	Input(Output) to Case	500VDC, min. 1minute	
Isolation resistance	500VDC	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	

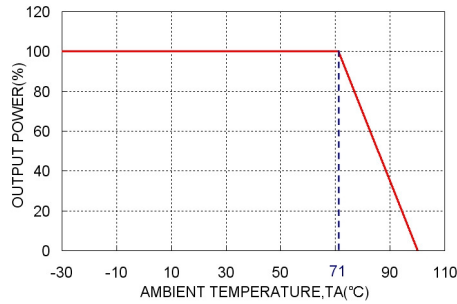
INPUT SPECIFICATIONS			
Input voltage range	5VDC nominal input	4.5 ~ 5.5VDC	
	12VDC nominal input	10.8 ~ 13.2VDC	
	24VDC nominal input	21.6 ~ 26.4VDC	
Input filter	Pi type		
ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature	-30°C ~ +71°C		
Maximum case temperature	+100°C		
Storage temperature range	-55°C ~ +125°C		
Thermal impedance	Natural 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 <sup>(3)</sup> Ripple & Noise	No load <sup>(2)</sup> Input Current	Eff <sup>(3)</sup> (%)	Capacitor Load max <sup>(4)</sup>
			Min. load	Full load				
DR1P5-05S05	4.5 ~ 5.5 VDC	5 VDC	0mA	300mA	50mVp-p	65mA	54	470μF
DR1P5-05S12	4.5 ~ 5.5 VDC	12 VDC	0mA	125mA	50mVp-p	80mA	52	330μF
DR1P5-05S15	4.5 ~ 5.5 VDC	15 VDC	0mA	100mA	50mVp-p	95mA	55	330μF
DR1P5-05D05	4.5 ~ 5.5 VDC	± 5 VDC	0mA	200mA/-100mA	50mVp-p	50mA	48	330μF
DR1P5-05D12	4.5 ~ 5.5 VDC	± 12 VDC	0mA	± 60mA	50mVp-p	90mA	51	110μF
DR1P5-05D15	4.5 ~ 5.5 VDC	± 15 VDC	0mA	± 50mA	50mVp-p	100mA	54	110μF
DR1P5-12S05	10.8 ~ 13.2 VDC	5 VDC	0mA	300mA	50mVp-p	30mA	55	470μF
DR1P5-12S12	10.8 ~ 13.2 VDC	12 VDC	0mA	125mA	50mVp-p	30mA	52	330μF
DR1P5-12S15	10.8 ~ 13.2 VDC	15 VDC	0mA	100mA	50mVp-p	40mA	55	330μF
DR1P5-12D05	10.8 ~ 13.2 VDC	± 5 VDC	0mA	200mA/-100mA	50mVp-p	30mA	49	330μF
DR1P5-12D12	10.8 ~ 13.2 VDC	± 12 VDC	0mA	± 60mA	50mVp-p	45mA	51	110μF
DR1P5-12D15	10.8 ~ 13.2 VDC	± 15 VDC	0mA	± 50mA	50mVp-p	40mA	54	110μF
DR1P5-24S05	21.6 ~ 26.4 VDC	5 VDC	0mA	300mA	50mVp-p	20mA	54	470μF
DR1P5-24S12	21.6 ~ 26.4 VDC	12 VDC	0mA	125mA	50mVp-p	20mA	52	330μF
DR1P5-24S15	21.6 ~ 26.4 VDC	15 VDC	0mA	100mA	50mVp-p	20mA	55	330μF
DR1P5-24D05	21.6 ~ 26.4 VDC	± 5 VDC	0mA	200mA/-100mA	50mVp-p	15mA	48	330μF
DR1P5-24D12	21.6 ~ 26.4 VDC	± 12 VDC	0mA	± 60mA	50mVp-p	20mA	51	110μF
DR1P5-24D15	21.6 ~ 26.4 VDC	± 15 VDC	0mA	± 50mA	50mVp-p	20mA	54	110μF

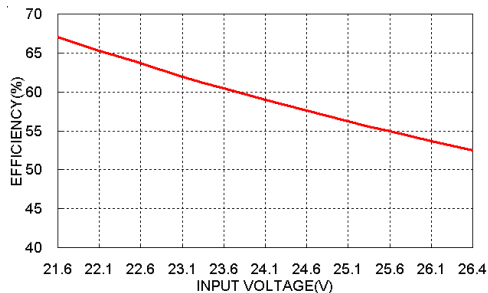
**Note**

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. Typical value at nominal input and no load.
3. Typical value at nominal input and full load.
4. Test by minimum input and constant resistive load.
5. **CAUTION:** This power module is not internally fused. An input line fuse must always be used.

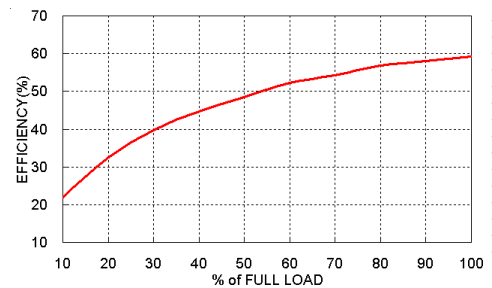
DR1P5-24S05 Derating Curve



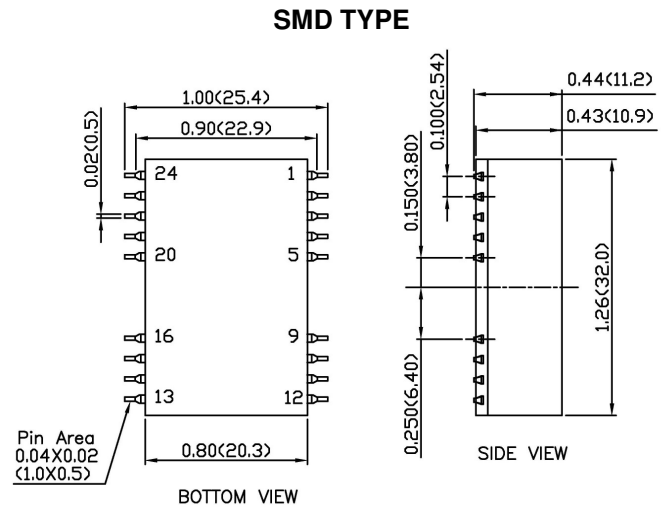
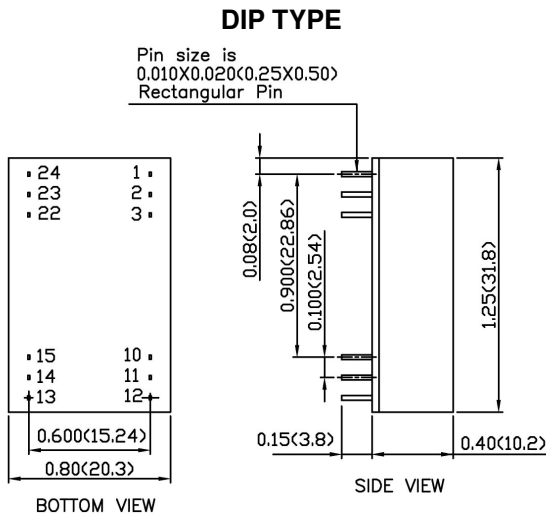
DR1P5-24S05 Efficiency VS Input Voltage



DR1P5-24S05 Efficiency VS Output Load



**MECHANICAL DRAWING :**



1. All dimensions in Inch (mm)

Tolerance: X.XX±0.02 (X.X±0.5)  
X.XXX±0.01 (X.XX±0.25)

2. Pin pitch tolerance ±0.014 (0.35)
3. 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			