



## FEATURES

- 3 WATTS REGULATED OUTPUT POWER
- OUTPUT CURRENT UP TO 600mA
- STANDARD 1.25 X 0.80X 0.40 INCH
- HIGH EFFICIENCY UP TO 80%
- 2:1 WIDE INPUT VOLTAGE RANGE
- SWITCHING FREQUENCY (100kHz, MIN)
- INCLUDE 3.3VDC OUTPUT
- STANDARD 24 PIN DIP PACKAGE & SMD TYPE PACKAGE
- DUAL SEPARATE OUTPUT
- CE MARK MEETS 2006/95/EC, 2011/95/EC AND 2004/108/EC
- SAFETY MEETS UL60950-1, EN60950-1 AND 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 PMKC03 series offer 3 watts of output power from a package in an IC compatible 24pin DIP configuration without derating to 71°C ambient temperature. PMKC03 series have 2:1 wide input voltage of 4.5~6, 9~18, 18~36 and 36~75VDC.

## TECHNICAL SPECIFICATION

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

OUTPUT SPECIFICATIONS			
Output power	3 Watts, max.		
Voltage accuracy	± 1%		
Minimum load (Note 7)	See table		
Line regulation	LL to HL at Full Load	DS	± 0.2% ± 0.5%
Load regulation	Min Load to Full Load	Single	± 0.3%
		Dual	± 0.2%
		DS	± 2%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL		± 5%
Ripple and noise	20MHz bandwidth		See table
Temperature coefficient	±0.02% / °C, max.		
Transient response recovery time	25% load step change		500µs
Over load protection	% of FL at nominal input		180%
Short circuit protection	Continuous, automatics recovery		
GENERAL SPECIFICATIONS			
Efficiency	See table		
Isolation voltage	Input to Output	1600VDC, min. 1minute	
	DS Type, Output to Output	500VDC, min. 1minute	
Isolation resistance	500VDC	10 <sup>9</sup> ohms, min.	
Isolation capacitance	300pF, max.		
Switching frequency	100kHz, min.		
Design meet safety standard	IEC60950-1, UL60950-1, EN60950-1		
Case material	Non-conductive black plastic		
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	14g (0.48oz)	
	SMD	15g (0.52oz)	
MTBF (Note 1)	BELLCORE TR-NWT-000332	3.706 x 10 <sup>6</sup> hrs	
	MIL-HDBK-217F	3.018 x 10 <sup>6</sup> hrs	

INPUT SPECIFICATIONS			
Input voltage range	5VDC nominal input	4.5 ~ 6VDC	
	12VDC nominal input	9 ~ 18VDC	
	24VDC nominal input	18 ~ 36VDC	
	48VDC nominal input	36 ~ 75VDC	
Input filter	Pi type		
Input surge voltage	5VDC input	18VDC 100ms, max.	
	12VDC input	36VDC 100ms, max.	
	24VDC input	50VDC 100ms, max.	
	48VDC input	100VDC 100ms, max.	
Input reflected ripple current	120mA <sub>p-p</sub>		
Start up time	Nominal input and constant resistive load	Power up	30ms
ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature	-25°C ~ +71°C(non derating)		
Storage temperature range	-55°C ~ +125°C		
Thermal shock	MIL-STD-810F		
Vibration	MIL-STD-810F		
Relative humidity	5% to 95% RH		
EMC CHARACTERISTICS			
EMI	EN55022	Class A	
ESD	EN61000-4-2	Air	± 8kV Perf. Criteria A
		Contact	± 6kV Perf. Criteria A
Radiated immunity	EN61000-4-3	10 V/m Perf. Criteria A	
Fast transient (Note 6)	EN61000-4-4	± 2kV Perf. Criteria B	
Surge (Note 6)	EN61000-4-5	± 1kV Perf. Criteria B	
Conducted immunity	EN61000-4-6	10 Vr.m.s Perf. Criteria A	

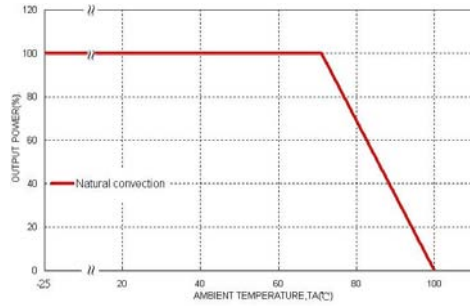
Model Number	Input Range	Output Voltage	Output Current		Output <sup>(2)</sup> Ripple & Noise	No load <sup>(3)</sup> Input Current	Eff <sup>(4)</sup> (%)	Capacitor <sup>(5)</sup> Load max
			Min. load	Full load				
PMKC03-05S33	4.5 ~ 6 VDC	3.3 VDC	60mA	600mA	75mVp-p	15mA	69	2200μF
PMKC03-05S05	4.5 ~ 6 VDC	5 VDC	60mA	600mA	75mVp-p	15mA	74	1000μF
PMKC03-05S12	4.5 ~ 6 VDC	12 VDC	25mA	250mA	120mVp-p	30mA	75	170μF
PMKC03-05S15	4.5 ~ 6 VDC	15 VDC	20mA	200mA	150mVp-p	25mA	75	110μF
PMKC03-05D05	4.5 ~ 6 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	15mA	73	± 500μF
PMKC03-05D12	4.5 ~ 6 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	20mA	75	± 96μF
PMKC03-05D15	4.5 ~ 6 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	50mA	75	± 47μF
PMKC03-05DS05	4.5 ~ 6 VDC	V1:5VDC;V2:5VDC	V1: 30mA;V2: 30mA	V1:300mA;V2:300mA	75mVp-p	30mA	73	V1:500μF;V2:500μF
PMKC03-05DS12	4.5 ~ 6 VDC	V1:12VDC;V2:12VDC	V1:12mA;V2:12mA	V1:125mA;V2:125mA	120mVp-p	40mA	75	V1:96μF;V2:96μF
PMKC03-05DS15	4.5 ~ 6 VDC	V1:15VDC;V2:15VDC	V1:10mA;V2:10mA	V1:100mA;V2:100mA	150mVp-p	40mA	73	V1:47μF;V2:47μF
PMKC03-12S33	9 ~ 18 VDC	3.3 VDC	60mA	600mA	75mVp-p	20mA	70	2200μF
PMKC03-12S05	9 ~ 18 VDC	5 VDC	60mA	600mA	75mVp-p	20mA	75	1000μF
PMKC03-12S12	9 ~ 18 VDC	12 VDC	25mA	250mA	120mVp-p	20mA	79	170μF
PMKC03-12S15	9 ~ 18 VDC	15 VDC	20mA	200mA	150mVp-p	30mA	79	110μF
PMKC03-12D05	9 ~ 18 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	20mA	74	± 500μF
PMKC03-12D12	9 ~ 18 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	35mA	79	± 96μF
PMKC03-12D15	9 ~ 18 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	45mA	79	± 47μF
PMKC03-12DS05	9 ~ 18 VDC	V1:5VDC;V2:5VDC	V1: 30mA;V2: 30mA	V1:300mA;V2:300mA	75mVp-p	10mA	74	V1:500μF;V2:500μF
PMKC03-12DS12	9 ~ 18 VDC	V1:12VDC;V2:12VDC	V1:12mA;V2:12mA	V1:125mA;V2:125mA	120mVp-p	15mA	79	V1:96μF;V2:96μF
PMKC03-12DS15	9 ~ 18 VDC	V1:15VDC;V2:15VDC	V1:10mA;V2:10mA	V1:100mA;V2:100mA	150mVp-p	30mA	79	V1:47μF;V2:47μF
PMKC03-24S33	18 ~ 36 VDC	3.3 VDC	60mA	600mA	75mVp-p	10mA	70	2200μF
PMKC03-24S05	18 ~ 36 VDC	5 VDC	60mA	600mA	75mVp-p	10mA	76	1000μF
PMKC03-24S12	18 ~ 36 VDC	12 VDC	25mA	250mA	120mVp-p	20mA	80	170μF
PMKC03-24S15	18 ~ 36 VDC	15 VDC	20mA	200mA	150mVp-p	20mA	80	110μF
PMKC03-24D05	18 ~ 36 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	20mA	76	± 500μF
PMKC03-24D12	18 ~ 36 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	20mA	79	± 96μF
PMKC03-24D15	18 ~ 36 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	20mA	80	± 47μF
PMKC03-24DS05	18 ~ 36 VDC	V1:5VDC;V2:5VDC	V1: 30mA;V2: 30mA	V1:300mA;V2:300mA	75mVp-p	20mA	76	V1:500μF;V2:500μF
PMKC03-24DS12	18 ~ 36 VDC	V1:12VDC;V2:12VDC	V1:12mA;V2:12mA	V1:125mA;V2:125mA	120mVp-p	20mA	79	V1:96μF;V2:96μF
PMKC03-24DS15	18 ~ 36 VDC	V1:15VDC;V2:15VDC	V1:10mA;V2:10mA	V1:100mA;V2:100mA	150mVp-p	20mA	80	V1:47μF;V2:47μF
PMKC03-48S33	36 ~ 75 VDC	3.3 VDC	60mA	600mA	75mVp-p	10mA	72	2200μF
PMKC03-48S05	36 ~ 75 VDC	5 VDC	60mA	600mA	75mVp-p	10mA	75	1000μF
PMKC03-48S12	36 ~ 75 VDC	12 VDC	25mA	250mA	120mVp-p	10mA	79	170μF
PMKC03-48S15	36 ~ 75 VDC	15 VDC	20mA	200mA	150mVp-p	10mA	79	110μF
PMKC03-48D05	36 ~ 75 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	10mA	77	± 500μF
PMKC03-48D12	36 ~ 75 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	10mA	79	± 96μF
PMKC03-48D15	36 ~ 75 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	10mA	79	± 47μF
PMKC03-48DS05	36 ~ 75 VDC	V1:5VDC;V2:5VDC	V1: 30mA;V2: 30mA	V1:300mA;V2:300mA	75mVp-p	10mA	77	V1:500μF;V2:500μF
PMKC03-48DS12	36 ~ 75 VDC	V1:12VDC;V2:12VDC	V1:12mA;V2:12mA	V1:125mA;V2:125mA	120mVp-p	10mA	79	V1:96μF;V2:96μF
PMKC03-48DS15	36 ~ 75 VDC	V1:15VDC;V2:15VDC	V1:10mA;V2:10mA	V1:100mA;V2:100mA	150mVp-p	10mA	79	V1:47μF;V2:47μF

**Note**

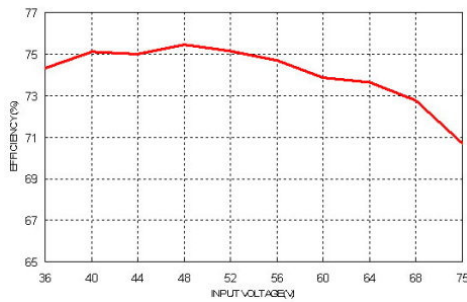
- BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C.  
MIL-HDBK-217F Notice2 @Ta=25 °C, Full load(Ground, Benign, controlled environment).
- Typical value at nominal input and full load. (20MHz BW.)
- Typical value at nominal input and no load.
- Typical value at nominal input and full load.
- Test by minimum input and constant resistive load.
- An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.  
The filter capacitor Power Mate suggest: Nippon chemi-con KY series, 220μF/100V.
- The output requires a minimum loading on the output to maintain specified regulation.  
Operation under no-load condition will not damage these devices, however they may not meet all listed specification.

**CAUTION:** This power module is not internally fused. An input line fuse must always be used.

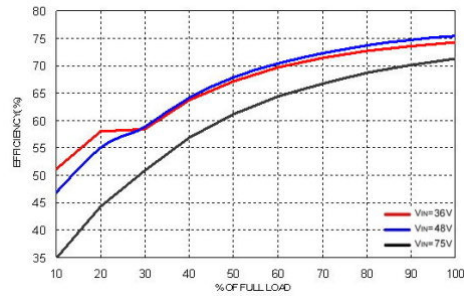
PMKC03-48S05 Derating Curve



PMKC03-48S05 Efficiency VS Input Voltage



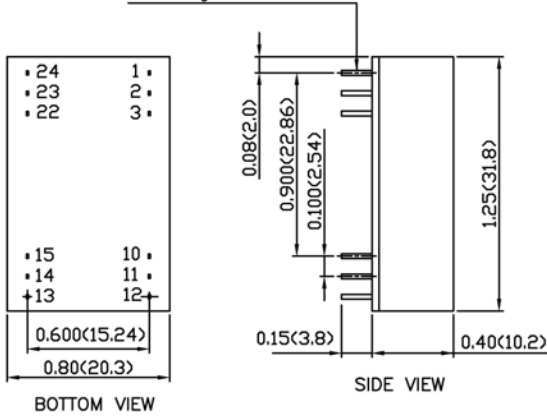
PMKC03-48S05 Efficiency VS Output Current



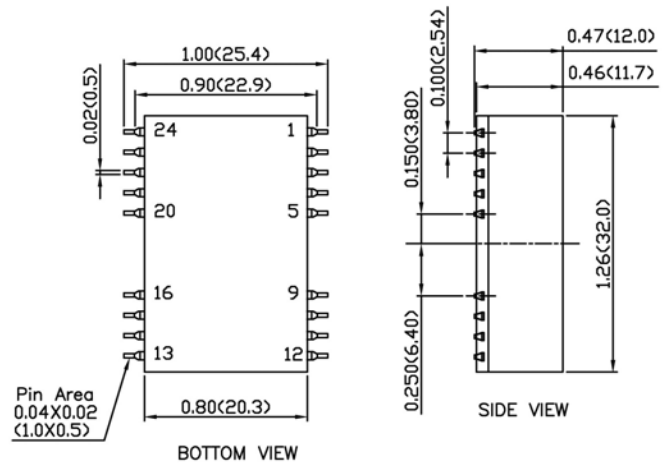
**MECHANICAL DRAWING :**

**DIP TYPE**

Pin size is 0.020(0.50) Dia or 0.010X0.020(0.25X0.50) Rectangular Pin



**SMD TYPE**



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 ±0.01 (0.25)  
 3. Pin dimension tolerance ±0.004 (0.1)

**DIP PIN CONNECTION**

PIN	SINGLE	DUAL	DS	PIN	SINGLE	DUAL	DS
1	+INPUT	+INPUT	+INPUT	24	+INPUT	+INPUT	+INPUT
2	NC	-OUTPUT	- V1 out	23	NC	-OUTPUT	- V1 out
3	NC	COMMON	+ V1 out	22	NC	COMMON	+ V1 out
10	-OUTPUT	COMMON	- V2 out	15	-OUTPUT	COMMON	- V2 out
11	+OUTPUT	+OUTPUT	+ V2 out	14	+OUTPUT	+OUTPUT	+ V2 out
12	-INPUT	-INPUT	-INPUT	13	-INPUT	-INPUT	-INPUT

**SMD PIN CONNECTION**

PIN	SINGLE	DUAL	DS	PIN	SINGLE	DUAL	DS
1	+INPUT	+INPUT	+INPUT	24	+INPUT	+INPUT	+INPUT
2	NC	-OUTPUT	- V1 out	23	NC	-OUTPUT	- V1 out
3	NC	COMMON	+ V1 out	22	NC	COMMON	+ V1 out
10	-OUTPUT	COMMON	- V2 out	15	-OUTPUT	COMMON	- V2 out
11	+OUTPUT	+OUTPUT	+ V2 out	14	+OUTPUT	+OUTPUT	+ V2 out
12	-INPUT	-INPUT	-INPUT	13	-INPUT	-INPUT	-INPUT
Others	NC	NC	NC				