POWER MATE TECHNOLOGY CO.,LTD.

PMKC03-SERIES

- 3 WATTS REGULATED OUTPUT POWER
- 2:1 WIDE INPUT VOLTAGE RANGE
- INTERNATIONAL SAFETY STANDARD APPROVAL
- INCLUDE 3.3VDC OUTPUT
- HIGH EFFICIENCY UP TO 80%
- STANDARD 24 PIN DIP PACKAGE & SMD TYPE PACKAGE
- DUAL SEPARATE OUTPUT

UL E193009
TUV
CB
CE MARK

The PMKC03 series offer 3 watts of output power from a package in an IC compatible 24pin DIP configuration without derating to 71ºC ambient temperature. PMKC03 series have 2:1 wide input voltage of 4.5-6, 9-18, 18-36 and 36-75VDC. The PMKC03 features 1600VDC of isolation, short-circuit protection. All models are particularly suited to telecommunications, industrial, mobile telecom and test equipment applications.

TECHNICAL SPECIFICATION

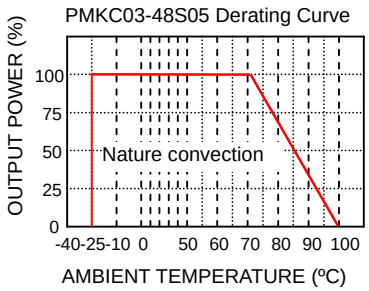
All specifications are typical at nominal input, full load and 25ºC otherwise noted

OUTPUT SPECIFICATIONS

Output power			3 Watts max
Voltage accuracy	Full load and nominal Vin		± 1%
Minimum load (Note 1)			10% of FL
Line regulation	LL to HL at Full Load		± 0.2%
		DS	± 0.5%
Load regulation	25% to 100% FL	Single	± 0.2%
		Dual	± 2%
		DS	± 0.5%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL		± 5%
Ripple and noise	20MHz bandwidth	3.3V/5V	75mVp-p
		others	1%/p-p of Vout max
Temperature coefficient			±0.02% / ºC, max
Transient response recovery time	25% load step change		500uS
Over load protection	% of FL at nominal input		180% typ
Short circuit protection		Continuous, automatics recovery	

INPUT SPECIFICATIONS

Input voltage range	5V nominal input		4.5 – 6VDC
	12V nominal input		9 – 18VDC
	24V nominal input		18 – 36VDC
	48V nominal input		36 – 75VDC
Input filter			Pi type
Input surge voltage 100mS max	5V input		15VDC
	12V input		36VDC
	24V input		50VDC
	48V input		100VDC
Input reflected ripple (Note2)	Nominal Vin and full load		120mAp-p
Start up time	Nominal Vin and constant resistive load	Power up	30mS typ



GENERAL SPECIFICATIONS

Efficiency		See table
Isolation voltage	Input to Output	1600VDC, min
	DS Type, Output to Output	500VDC, min
Isolation resistance		10^9 ohms, min
Isolation capacitance		300pF, max
Switching frequency		100KHz, min
Approvals and standard		IEC60950-1, UL1950-1, 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 3)		3.706 x 10^6 hrs

ENVIRONMENTAL SPECIFICATIONS

Operating temperature range	-25ºC ~ +71ºC
Storage temperature range	-55ºC ~ +105ºC
Thermal shock	MIL-STD-810D
Vibration	10~55Hz, 10G, 30minutes along X,Y and Z
Relative humidity	5% to 95% RH

EMC CHARACTERISTICS

Conducted emissions	EN55022	Class A
Radiated emissions	EN55022	Class A
ESD	EN61000-4-2	Perf. Criteria B
Radiated immunity	EN61000-4-3	Perf. Criteria A
Fast transient	EN61000-4-4	Perf. Criteria B
Surge	EN61000-4-5	Perf. Criteria B
Conducted immunity	EN61000-4-6	Perf. Criteria A

Model Number	Input Range	Output Voltage	Output Current	Input [4] Current	Eff [5] (%)	Capacitor [6] Load max
PMKC03-05S33	4.5 – 6 VDC	3.3 VDC	600mA	609mA	69	2200uF
PMKC03-05S05	4.5 – 6 VDC	5 VDC	600mA	857mA	74	1000uF
PMKC03-05S12	4.5 – 6 VDC	12 VDC	250mA	845mA	75	170uF
PMKC03-05S15	4.5 – 6 VDC	15 VDC	200mA	845mA	75	110uF
PMKC03-05D05	4.5 – 6 VDC	± 5 VDC	± 300mA	870mA	73	± 500uF
PMKC03-05D12	4.5 – 6 VDC	± 12 VDC	± 125mA	845mA	75	± 96uF
PMKC03-05D15	4.5 – 6 VDC	± 15 VDC	± 100mA	845mA	75	± 47uF
PMKC03-05DS05	4.5 – 6 VDC	V1:5 VDC;V2:5 VDC	V1:300mA; V2:300mA	870mA	73	V1:500uF;V2:500uF
PMKC03-05DS12	4.5 – 6 VDC	V1:12 VDC;V2: 12VDC	V1:125mA; V2:125mA	845mA	75	V1:96uF;V2:96uF
PMKC03-05DS15	4.5 – 6 VDC	V1:15 VDC;V2:15 VDC	V1:100mA; V2:100mA	870mA	73	V1:47uF;V2:47uF
PMKC03-12S33	9 – 18 VDC	3.3 VDC	600mA	252mA	70	2200uF
PMKC03-12S05	9 – 18 VDC	5 VDC	600mA	352mA	75	1000uF
PMKC03-12S12	9 – 18 VDC	12 VDC	250mA	334mA	79	170uF
PMKC03-12S15	9 – 18 VDC	15 VDC	200mA	334mA	79	110uF
PMKC03-12D05	9 – 18 VDC	± 5 VDC	± 300mA	357mA	74	± 500uF
PMKC03-12D12	9 – 18 VDC	± 12 VDC	± 125mA	334mA	79	± 96uF
PMKC03-12D15	9 – 18 VDC	± 15 VDC	± 100mA	334mA	79	± 47uF
PMKC03-12DS05	9 – 18 VDC	V1:5 VDC;V2:5 VDC	V1:300mA; V2:300mA	357mA	74	V1:500uF;V2:500uF
PMKC03-12DS12	9 – 18 VDC	V1:12 VDC;V2: 12VDC	V1:125mA; V2:125mA	334mA	79	V1:96uF;V2:96uF
PMKC03-12DS15	9 – 18 VDC	V1:15 VDC;V2:15 VDC	V1:100mA; V2:100mA	334mA	79	V1:47uF;V2:47uF
PMKC03-24S33	18 – 36 VDC	3.3 VDC	600mA	126mA	70	2200uF
PMKC03-24S05	18 – 36 VDC	5 VDC	600mA	174mA	76	1000uF
PMKC03-24S12	18 – 36 VDC	12 VDC	250mA	165mA	80	170uF
PMKC03-24S15	18 – 36 VDC	15 VDC	200mA	165mA	80	110uF
PMKC03-24D05	18 – 36 VDC	± 5 VDC	± 300mA	174mA	76	± 500uF
PMKC03-24D12	18 – 36 VDC	± 12 VDC	± 125mA	167mA	79	± 96uF
PMKC03-24D15	18 – 36 VDC	± 15 VDC	± 100mA	164mA	80	± 47uF
PMKC03-24DS05	18 – 36 VDC	V1:5 VDC;V2:5 VDC	V1:300mA; V2:300mA	174mA	76	V1:500uF;V2:500uF
PMKC03-24DS12	18 – 36 VDC	V1:12 VDC;V2: 12VDC	V1:125mA; V2:125mA	167mA	79	V1:96uF;V2:96uF
PMKC03-24DS15	18 – 36 VDC	V1:15 VDC;V2:15 VDC	V1:100mA; V2:100mA	164mA	80	V1:47uF;V2:47uF
PMKC03-48S33	36 – 75 VDC	3.3 VDC	600mA	61mA	72	2200uF
PMKC03-48S05	36 – 75 VDC	5 VDC	600mA	88mA	75	1000uF
PMKC03-48S12	36 – 75 VDC	12 VDC	250mA	84mA	79	170uF
PMKC03-48S15	36 – 75 VDC	15 VDC	200mA	84mA	79	110uF
PMKC03-48D05	36 – 75 VDC	± 5 VDC	± 300mA	86mA	77	± 500uF
PMKC03-48D12	36 – 75 VDC	± 12 VDC	± 125mA	84mA	79	± 96uF
PMKC03-48D15	36 – 75 VDC	± 15 VDC	± 100mA	84mA	79	± 47uF
PMKC03-48DS05	36 – 75 VDC	V1:5 VDC;V2:5 VDC	V1:300mA; V2:300mA	86mA	77	V1:500uF;V2:500uF
PMKC03-48DS12	36 – 75 VDC	V1:12 VDC;V2: 12VDC	V1:125mA; V2:125mA	84mA	79	V1:96uF;V2:96uF
PMKC03-48DS15	36 – 75 VDC	V1:15 VDC;V2:15 VDC	V1:100mA; V2:100mA	84mA	79	V1:47uF;V2:47uF

Note

1. The PMKC03 series required a minimum 10% 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
2. Please add an external filter at converter input terminals when measuring input reflected ripple, as figure 1.
   L: Simulated source impedance of 12uH C: Nippon chemi-con KMF series 47uF/100V
3. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40ºC. (Ground fixed and controlled environment)
4. Maximum value at nominal input voltage and full load of standard type.
5. Typical value at nominal input voltage and full load.
6. Test by minimum Vin and constant resistive load.

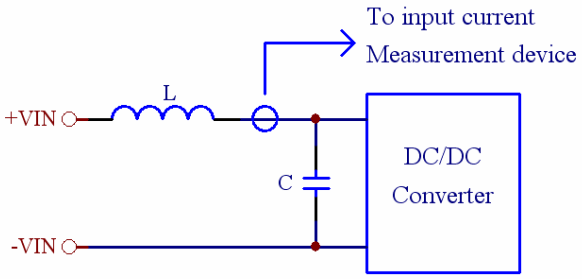
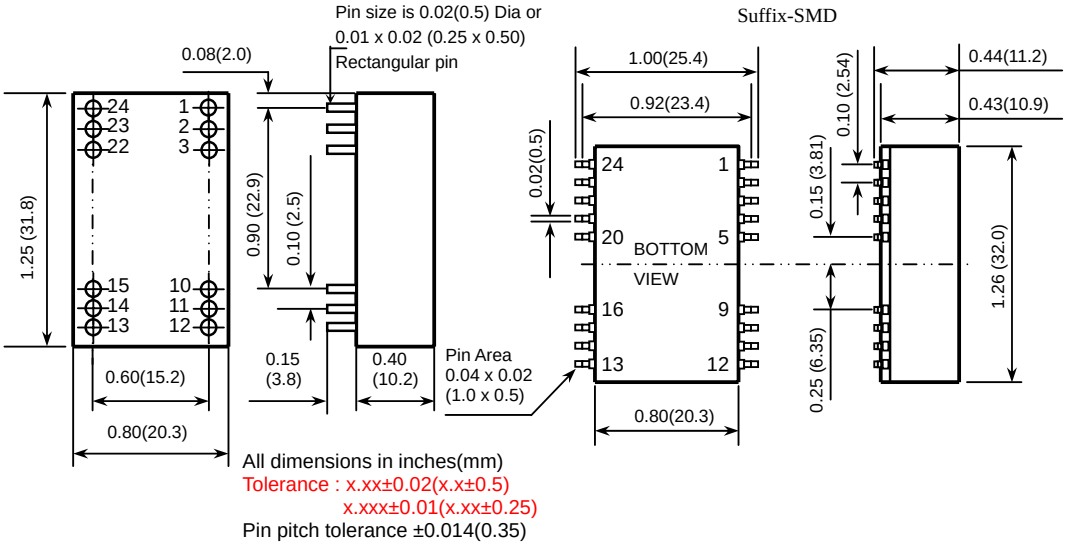


Figure 1



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	Others	NC	NC	NC