POWER MATE TECHNOLOGY CO.,LTD.

PMKC03-SERIES

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, 93/68/EEC AND 2004/108/EC
- UL60950-1, EN60950-1 AND IEC60950-1 LICENSED
- 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 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.

TECHNICAL SPECIFICATION

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

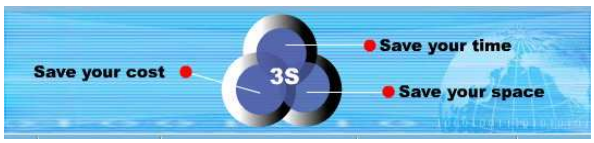
OUTPUT SPECIFICATIONS			
Output power			3 Watts, max.
Voltage accuracy	Full load and nominal Vin		± 1%
Minimum load (Note 7)			See table
Line regulation	LL to HL at Full Load		± 0.2%
		DS	± 0.5%
Load regulation	Min Load to Full Load	Single 3.3Vout	± 0.3%
		Single Others	± 0.2%
		Dual	± 2%
		DS	± 2%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL		± 5%
Ripple and noise	20MHz bandwidth		See table
Temperature coefficient			±0.02% / ºC, max.
Transient response recovery time	25% load step change		500µS
Over load protection	% of FL at nominal input		180%, typ.
Short circuit protection			Continuous, automatics recovery

GENERAL SPECIFICATIONS		
Efficiency		See table
Isolation voltage	Input to Output	1600VDC, min.
	DS Type, Output to Output	500VDC, min.
Isolation resistance		10^9ohms, min.
Isolation capacitance		300pF, max.
Switching frequency		100KHz, min.
Approvals and 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 10^6 hrs
	MIL-HDBK-217F	3.018 x 10^6 hrs

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 current	Nominal Vin and full load	120mAp-p
Start up time	Nominal Vin and constant resistive load / Power up	30mS, typ.

ENVIRONMENTAL SPECIFICATIONS	
Operating ambient temperature	-25ºC ~ +71ºC(non derating)
Storage temperature range	-55ºC ~ +105ºC
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 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



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3 WATTS DC-DC CONVERTER

Model Number	Input Range	Output Voltage	Output Current		Output[4] Ripple&Noise	Input Current		Eff[4] (%)	Capacitor[5] Load max
			Min. load	Full load		No load[3]	Full load[2]		
PMKC03-05S33	4.5 – 6 VDC	3.3 VDC	60mA	600mA	75mVp-p	15mA	609mA	69	2200μF
PMKC03-05S05	4.5 – 6 VDC	5 VDC	60mA	600mA	75mVp-p	15mA	857mA	74	1000μF
PMKC03-05S12	4.5 – 6 VDC	12 VDC	25mA	250mA	120mVp-p	30mA	845mA	75	170μF
PMKC03-05S15	4.5 – 6 VDC	15 VDC	20mA	200mA	150mVp-p	25mA	845mA	75	110μF
PMKC03-05D05	4.5 – 6 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	15mA	870mA	73	± 500μF
PMKC03-05D12	4.5 – 6 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	20mA	845mA	75	± 96μF
PMKC03-05D15	4.5 – 6 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	50mA	845mA	75	± 47μF
PMKC03-05DS05	4.5 – 6 VDC	V1:5VDC;V2:5VDC	V1: 30mA;V2: 30mA	V1:300mA;V2:300mA	75mVp-p	30mA	870mA	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	845mA	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	870mA	73	V1:47μF;V2:47μF
PMKC03-12S33	9 – 18 VDC	3.3 VDC	60mA	600mA	75mVp-p	20mA	252mA	70	2200μF
PMKC03-12S05	9 – 18 VDC	5 VDC	60mA	600mA	75mVp-p	20mA	352mA	75	1000μF
PMKC03-12S12	9 – 18 VDC	12 VDC	25mA	250mA	120mVp-p	20mA	334mA	79	170μF
PMKC03-12S15	9 – 18 VDC	15 VDC	20mA	200mA	150mVp-p	30mA	334mA	79	110μF
PMKC03-12D05	9 – 18 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	20mA	357mA	74	± 500μF
PMKC03-12D12	9 – 18 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	35mA	334mA	79	± 96μF
PMKC03-12D15	9 – 18 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	45mA	334mA	79	± 47μF
PMKC03-12DS05	9 – 18 VDC	V1:5VDC;V2:5VDC	V1: 30mA;V2: 30mA	V1:300mA;V2:300mA	75mVp-p	10mA	357mA	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	334mA	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	334mA	79	V1:47μF;V2:47μF
PMKC03-24S33	18 – 36 VDC	3.3 VDC	60mA	600mA	75mVp-p	10mA	126mA	70	2200μF
PMKC03-24S05	18 – 36 VDC	5 VDC	60mA	600mA	75mVp-p	10mA	174mA	76	1000μF
PMKC03-24S12	18 – 36 VDC	12 VDC	25mA	250mA	120mVp-p	20mA	165mA	80	170μF
PMKC03-24S15	18 – 36 VDC	15 VDC	20mA	200mA	150mVp-p	20mA	165mA	80	110μF
PMKC03-24D05	18 – 36 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	20mA	174mA	76	± 500μF
PMKC03-24D12	18 – 36 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	20mA	167mA	79	± 96μF
PMKC03-24D15	18 – 36 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	20mA	164mA	80	± 47μF
PMKC03-24DS05	18 – 36 VDC	V1:5VDC;V2:5VDC	V1: 30mA;V2: 30mA	V1:300mA;V2:300mA	75mVp-p	20mA	174mA	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	167mA	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	164mA	80	V1:47μF;V2:47μF
PMKC03-48S33	36 – 75 VDC	3.3 VDC	60mA	600mA	75mVp-p	10mA	61mA	72	2200μF
PMKC03-48S05	36 – 75 VDC	5 VDC	60mA	600mA	75mVp-p	10mA	88mA	75	1000μF
PMKC03-48S12	36 – 75 VDC	12 VDC	25mA	250mA	120mVp-p	10mA	84mA	79	170μF
PMKC03-48S15	36 – 75 VDC	15 VDC	20mA	200mA	150mVp-p	10mA	84mA	79	110μF
PMKC03-48D05	36 – 75 VDC	± 5 VDC	±30mA	± 300mA	75mVp-p	10mA	86mA	77	± 500μF
PMKC03-48D12	36 – 75 VDC	± 12 VDC	±12mA	± 125mA	120mVp-p	10mA	84mA	79	± 96μF
PMKC03-48D15	36 – 75 VDC	± 15 VDC	±10mA	± 100mA	150mVp-p	10mA	84mA	79	± 47μF
PMKC03-48DS05	36 – 75 VDC	V1:5VDC;V2:5VDC	V1: 30mA;V2: 30mA	V1:300mA;V2:300mA	75mVp-p	10mA	86mA	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	84mA	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	84mA	79	V1:47μF;V2:47μF

Note

1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40ºC.
   MIL-HDBK-217F Notice2 @Ta=25 ºC, Full load(Ground, Benign, controlled environment).
2. Maximum value at nominal input voltage and full load.
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.
6. 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, ESR 48mΩ.
7. 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.

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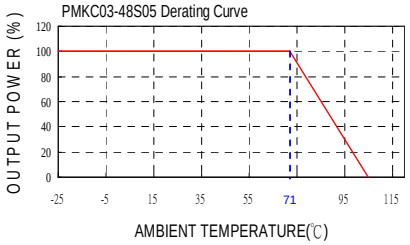
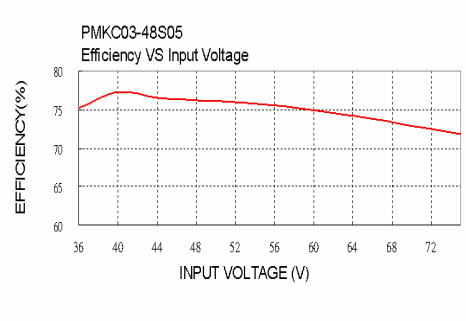
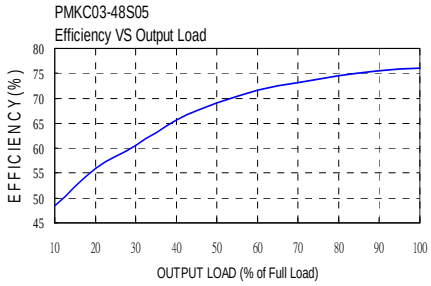
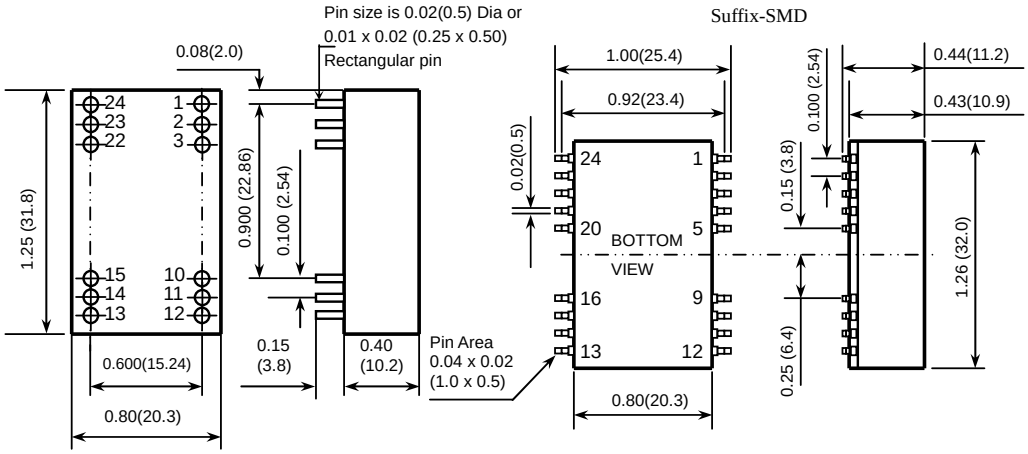
3 WATTS DC-DC CONVERTER









1. All dimensions in Inches (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	Others	NC	NC	NC

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