



APPLICATIONS

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

FEATURES

- 3 WATTS REGULATED OUTPUT POWER
- OUTPUT CURRENT UP TO 500mA
- STANDARD 1.25 X 0.80 X 0.40 INCH
- HIGH EFFICIENCY UP TO 82%
- 2:1 WIDE INPUT VOLTAGE RANGE
- FIVE-SIDED SHIELD
- FIXED SWITCHING FREQUENCY (300kHz)
- STANDARD 24 PIN DIP PACKAGE & SMD TYPE PACKAGE
- OVER CURRENT PROTECTION
- 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

OPTIONS

SMD TYPE, M1 TYPE

DESCRIPTION

The FKC03 series offer 3 watts of output power from a package in an IC compatible 24pin DIP configuration without derating to 71°C ambient temperature and pin to pin compatible with FKC05 series. FKC03 series have 2:1 wide input voltage of 9~18VDC, 18~36VDC and 36~75VDC.

TECHNICAL SPECIFICATION

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

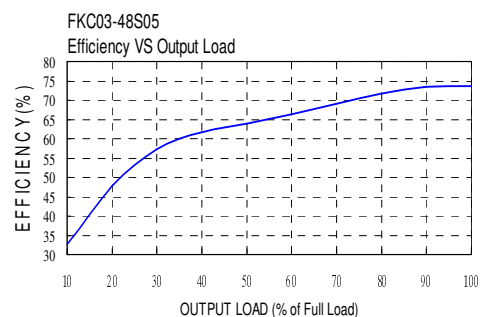
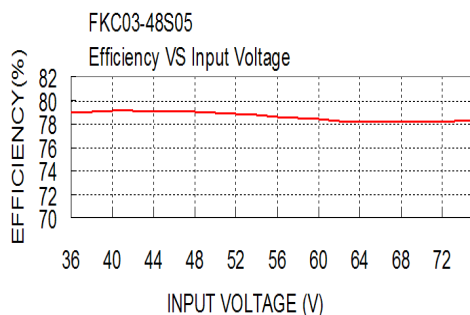
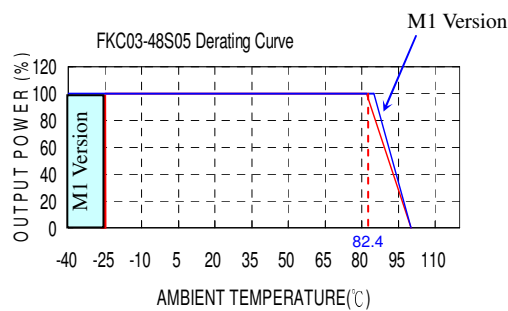
OUTPUT SPECIFICATIONS				INPUT SPECIFICATIONS			
Output power	3 Watts, max.			Input voltage range	12VDC nominal input 24VDC nominal input 48VDC nominal input	9 ~ 18VDC 18 ~ 36VDC 36 ~ 75VDC	
Voltage accuracy	± 1%			Input filter	Pi type		
Minimum load	0%			Input surge voltage	12VDC input 24VDC input 48VDC input	36VDC 100ms, max. 50VDC 100ms, max. 100VDC 100ms, max.	
Line regulation	LL to HL at Full Load	± 0.2%		Input reflected ripple current	20mA _{p-p}		
Load regulation	No Load to Full Load	Single Dual	± 0.2% ± 1%	Start up time	Nominal input and constant resistive load	Power up	350ms, max.
Cross regulation(Dual)	Asymmetrical load 25% / 100% FL		± 5%	ENVIRONMENTAL SPECIFICATIONS			
Ripple and noise	20MHz bandwidth		See table	Operating ambient temperature	Standard M1 (Note 6)	-25°C~+85°C (with derating) -40°C~+85°C (non-derating)	
Temperature coefficient	±0.02% / °C, max.			Maximum case temperature	+100°C		
Transient response recovery time	25% load step change		200µs	Storage temperature range	-55°C ~ +125°C		
Over load protection	% of FL at nominal input		180%	Thermal impedance	Natural convection	20°C/watt	
Short circuit protection	Continuous, automatics recovery			Thermal shock	MIL-STD-810F		
GENERAL SPECIFICATIONS				Vibration	MIL-STD-810F		
Efficiency	See table			Relative humidity	5% to 95% RH		
Isolation voltage	Input to Output	1600VDC, min. 1minute		EMC CHARACTERISTICS			
	Input(Output) to Case	DIP	1600VDC, min. 1minute	EMI	EN55022		Class A, Class B
		SMD	1000VDC, min. 1minute	ESD	EN61000-4-2	Air Contact	± 8kV ± 6kV
Isolation resistance	500VDC	10 ⁹ ohms, min.		Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Isolation capacitance	300pF, max.			Fast transient (Note 7)	EN61000-4-4	± 2kV	Perf. Criteria B
Switching frequency	300kHz, ±10%			Surge (Note 7)	EN61000-4-5	± 1kV	Perf. Criteria B
Design meet safety standard	IEC60950-1, UL60950-1, EN60950-1			Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A
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	3.155 x 10 ⁶ hrs					
	MIL-HDBK-217F	2.597 x 10 ⁶ hrs					

Model Number	Input Range	Output Voltage	Output Current		Output ⁽²⁾ Ripple & Noise	No load ⁽³⁾ Input Current	Eff ⁽⁴⁾ (%)	Capacitor ⁽⁵⁾ Load max
			Min. load	Full load				
FKC03-12S33	9 ~ 18 VDC	3.3 VDC	0mA	500mA	50mVp-p	10mA	75	2200μF
FKC03-12S05	9 ~ 18 VDC	5 VDC	0mA	500mA	50mVp-p	10mA	76	1000μF
FKC03-12S12	9 ~ 18 VDC	12 VDC	0mA	250mA	50mVp-p	10mA	80	220μF
FKC03-12S15	9 ~ 18 VDC	15 VDC	0mA	200mA	50mVp-p	15mA	81	150μF
FKC03-12D05	9 ~ 18 VDC	± 5 VDC	0mA	± 250mA	50mVp-p	15mA	78	± 470μF
FKC03-12D12	9 ~ 18 VDC	± 12 VDC	0mA	± 125mA	50mVp-p	15mA	80	± 100μF
FKC03-12D15	9 ~ 18 VDC	± 15 VDC	0mA	± 100mA	50mVp-p	20mA	82	± 68μF
FKC03-24S33	18 ~ 36 VDC	3.3 VDC	0mA	500mA	50mVp-p	10mA	72	2200μF
FKC03-24S05	18 ~ 36 VDC	5 VDC	0mA	500mA	50mVp-p	10mA	74	1000μF
FKC03-24S12	18 ~ 36 VDC	12 VDC	0mA	250mA	50mVp-p	15mA	78	220μF
FKC03-24S15	18 ~ 36 VDC	15 VDC	0mA	200mA	50mVp-p	15mA	78	150μF
FKC03-24D05	18 ~ 36 VDC	± 5 VDC	0mA	± 250mA	50mVp-p	15mA	74	± 470μF
FKC03-24D12	18 ~ 36 VDC	± 12 VDC	0mA	± 125mA	50mVp-p	20mA	77	± 100μF
FKC03-24D15	18 ~ 36 VDC	± 15 VDC	0mA	± 100mA	50mVp-p	20mA	77	± 68μF
FKC03-48S33	36 ~ 75 VDC	3.3 VDC	0mA	500mA	50mVp-p	5mA	74	2200μF
FKC03-48S05	36 ~ 75 VDC	5 VDC	0mA	500mA	50mVp-p	10mA	74	1000μF
FKC03-48S12	36 ~ 75 VDC	12 VDC	0mA	250mA	50mVp-p	10mA	79	220μF
FKC03-48S15	36 ~ 75 VDC	15 VDC	0mA	200mA	50mVp-p	10mA	78	150μF
FKC03-48D05	36 ~ 75 VDC	± 5 VDC	0mA	± 250mA	50mVp-p	10mA	73	± 470μF
FKC03-48D12	36 ~ 75 VDC	± 12 VDC	0mA	± 125mA	50mVp-p	10mA	79	± 100μF
FKC03-48D15	36 ~ 75 VDC	± 15 VDC	0mA	± 100mA	50mVp-p	10mA	77	± 68μF

Note

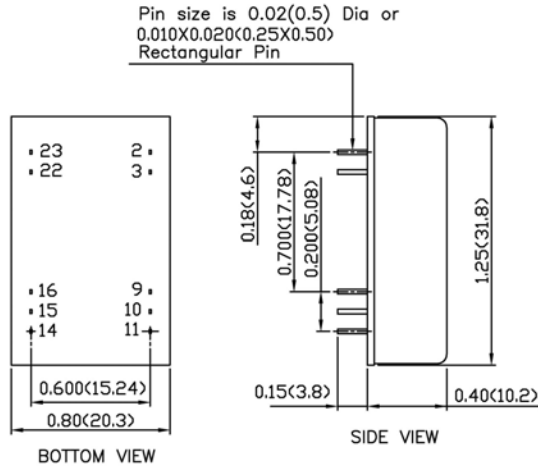
- BELLCORE TR-NWT-000332. Case 1 : 50% Stress, Temperature at 40°C.
MIL-HDBK-217F Notice2 @Ta=25 °C, Full load(Ground, Benign, controlled environment).
- Typical value at nominal input and full load. (20MHz BW.)
- Typical value at nominal input and no load.
- Typical value at nominal input and full load.
- Test by minimum input and constant resistive load.
- M1 version is more efficiency, therefore, it can be operated in a more extensive temperature range than standard.
- 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.

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

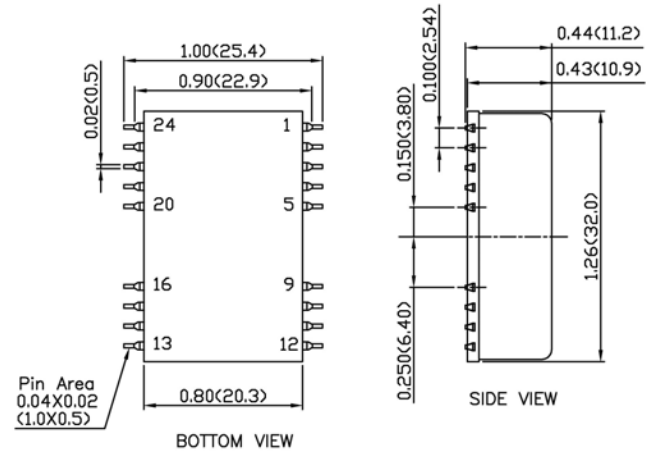


MECHANICAL DRAWING :

DIP TYPE



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	PIN	SINGLE	DUAL
2	-INPUT	-INPUT	23	+INPUT	+INPUT
3	-INPUT	-INPUT	22	+INPUT	+INPUT
9	NC	COMMON	16	-OUTPUT	COMMON
10	NC	NC	15	NC	NC
11	NC	-OUTPUT	14	+OUTPUT	+OUTPUT

SMD PIN CONNECTION					
PIN	SINGLE	DUAL	PIN	SINGLE	DUAL
2	-INPUT	-INPUT	23	+INPUT	+INPUT
3	-INPUT	-INPUT	22	+INPUT	+INPUT
9	NC	COMMON	16	-OUTPUT	COMMON
10	NC	NC	15	NC	NC
11	NC	-OUTPUT	14	+OUTPUT	+OUTPUT
Others	NC	NC			