



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, 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

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 9-18, 18-36 and 36-75VDC.

TECHNICAL SPECIFICATION

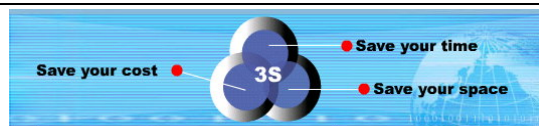
OUTPUT SPECIFICATIONS	
Output power	3 Watts, max.
Voltage accuracy	Full load and nominal Vin ± 1%
Minimum load	0%
Line regulation	LL to HL at Full Load ± 0.2%
Load regulation	No Load to Full Load Single ± 0.2% Dual ± 1%
Cross regulation(Dual)	Asymmetrical load 25% / 100% FL ± 5%
Ripple and noise	20MHz bandwidth See table
Temperature coefficient	±0.02% / °C, max.
Transient response recovery time	25% load step change 200µS
Over load protection	% of FL at nominal input 180%, typ.
Short circuit protection	Continuous, automatic recovery

GENERAL SPECIFICATIONS	
Efficiency	See table
Isolation voltage	Input to Output 1600VDC, min. Input(Output) to Case DIP 1600VDC, min. SMD 1000VDC, min.
Isolation resistance	10 ⁹ ohms, min.
Isolation capacitance	300pF, max.
Switching frequency	300KHz, typ.
Approvals and 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 3.155 x 10 ⁶ hrs MIL-HDBK-217F 2.597 x 10 ⁶ hrs

INPUT SPECIFICATIONS	
Input voltage range	12V nominal input 9 – 18VDC 24V nominal input 18 – 36VDC 48V nominal input 36 – 75VDC
Input filter	Pi type
Input surge voltage	12V input 36VDC 24V input 50VDC 48V input 100VDC
Input reflected ripple current	Nominal Vin and full load 20mA _{p-p}
Start up time	Nominal Vin and constant resistive load Power up 350mS, max.

ENVIRONMENTAL SPECIFICATIONS	
Operating ambient temperature	Standard -25°C~+85°C (with derating) M1 (Note 6) -40°C~+85°C (non-derating)
Maximum case temperature	+100°C
Storage temperature range	-55°C ~ +105°C
Thermal impedance	Nature 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
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 7)	EN61000-4-4 ± 2KV Perf. Criteria B
Surge (Note 7)	EN61000-4-5 ± 1KV Perf. Criteria B
Conducted immunity	EN61000-4-6 10 Vr.m.s Perf. Criteria A



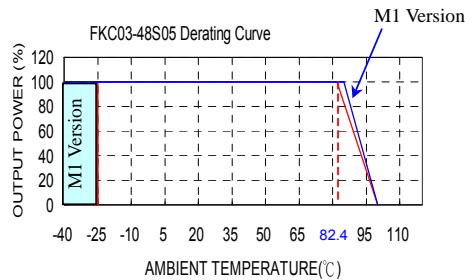


**3 WATTS
DC-DC CONVERTER**

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)		
FKC03-12S33	9 – 18 VDC	3.3 VDC	0mA	500mA	50mVp-p	10mA	194mA	75	2200µF
FKC03-12S05	9 – 18 VDC	5 VDC	0mA	500mA	50mVp-p	10mA	289mA	76	1000µF
FKC03-12S12	9 – 18 VDC	12 VDC	0mA	250mA	50mVp-p	10mA	329mA	80	220µF
FKC03-12S15	9 – 18 VDC	15 VDC	0mA	200mA	50mVp-p	15mA	325mA	81	150µF
FKC03-12D05	9 – 18 VDC	± 5 VDC	0mA	± 250mA	50mVp-p	15mA	282mA	78	± 470µF
FKC03-12D12	9 – 18 VDC	± 12 VDC	0mA	± 125mA	50mVp-p	15mA	329mA	80	± 100µF
FKC03-12D15	9 – 18 VDC	± 15 VDC	0mA	± 100mA	50mVp-p	20mA	321mA	82	± 68µF
FKC03-24S33	18 – 36 VDC	3.3 VDC	0mA	500mA	50mVp-p	10mA	101mA	72	2200µF
FKC03-24S05	18 – 36 VDC	5 VDC	0mA	500mA	50mVp-p	10mA	149mA	74	1000µF
FKC03-24S12	18 – 36 VDC	12 VDC	0mA	250mA	50mVp-p	15mA	169mA	78	220µF
FKC03-24S15	18 – 36 VDC	15 VDC	0mA	200mA	50mVp-p	15mA	169mA	78	150µF
FKC03-24D05	18 – 36 VDC	± 5 VDC	0mA	± 250mA	50mVp-p	15mA	149mA	74	± 470µF
FKC03-24D12	18 – 36 VDC	± 12 VDC	0mA	± 125mA	50mVp-p	20mA	171mA	77	± 100µF
FKC03-24D15	18 – 36 VDC	± 15 VDC	0mA	± 100mA	50mVp-p	20mA	171mA	77	± 68µF
FKC03-48S33	36 – 75 VDC	3.3 VDC	0mA	500mA	50mVp-p	5mA	49mA	74	2200µF
FKC03-48S05	36 – 75 VDC	5 VDC	0mA	500mA	50mVp-p	10mA	75mA	74	1000µF
FKC03-48S12	36 – 75 VDC	12 VDC	0mA	250mA	50mVp-p	10mA	83mA	79	220µF
FKC03-48S15	36 – 75 VDC	15 VDC	0mA	200mA	50mVp-p	10mA	84mA	78	150µF
FKC03-48D05	36 – 75 VDC	± 5 VDC	0mA	± 250mA	50mVp-p	10mA	76mA	73	± 470µF
FKC03-48D12	36 – 75 VDC	± 12 VDC	0mA	± 125mA	50mVp-p	10mA	83mA	79	± 100µF
FKC03-48D15	36 – 75 VDC	± 15 VDC	0mA	± 100mA	50mVp-p	10mA	86mA	77	± 68µF

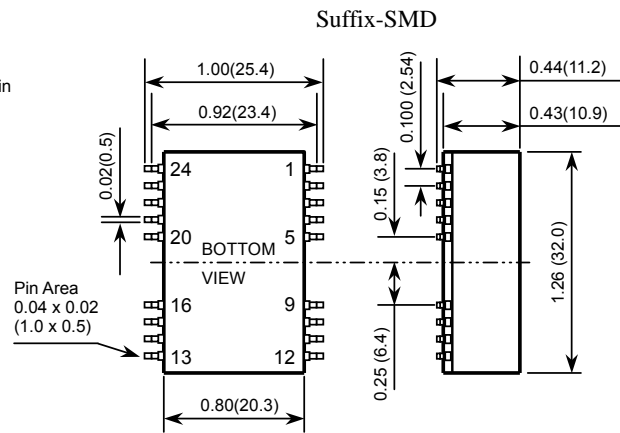
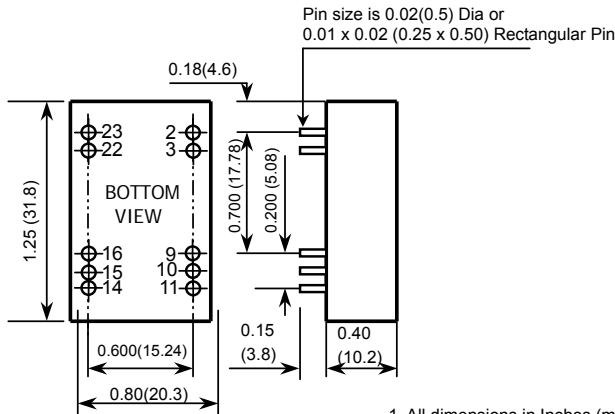
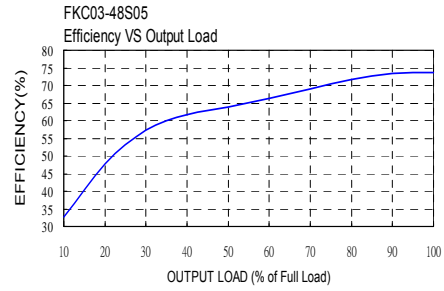
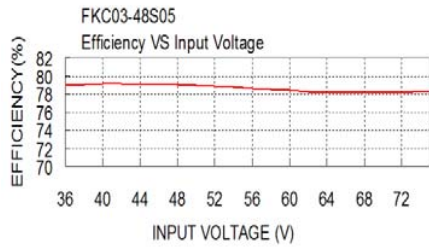
Note

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. Maximum value at nominal input voltage and full load of standard type.
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. M1 version is more efficient, therefore, it can be operated in a more extensive temperature range than standard.
7. 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.





**3 WATTS
DC-DC CONVERTER**



- All dimensions in Inches (mm)
Tolerance: X.XX±0.02 (X.X±0.5)
X.XXX±0.01 (X.XX±0.25)
- Pin pitch tolerance ±0.01(0.25)
- 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	Others	NC	NC

