



APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement
Semiconductor Equipment

FEATURES

- 3 WATTS REGULATED OUTPUT POWER
- OUTPUT CURRENT UP TO 500mA
- STANDARD 1.25" X 0.8" X 0.4" 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

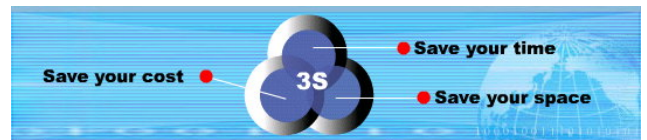
DESCRIPTION

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

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	200uS	
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	
	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	
100mS max	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 temperature range	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	10~55Hz, 10G, 30minutes along X,Y and Z		
Relative humidity	5% to 95% RH		
EMC CHARACTERISTICS			
EMI	EN55022	Class A	
ESD	EN61000-4-2	Air	± 8KV
		Contact	± 6KV
Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Fast transient	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

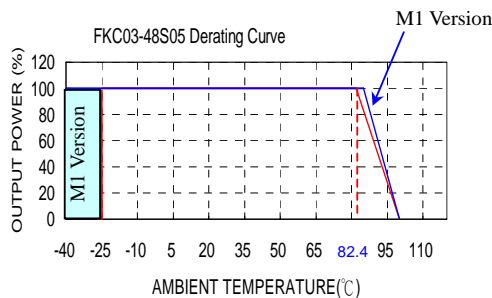


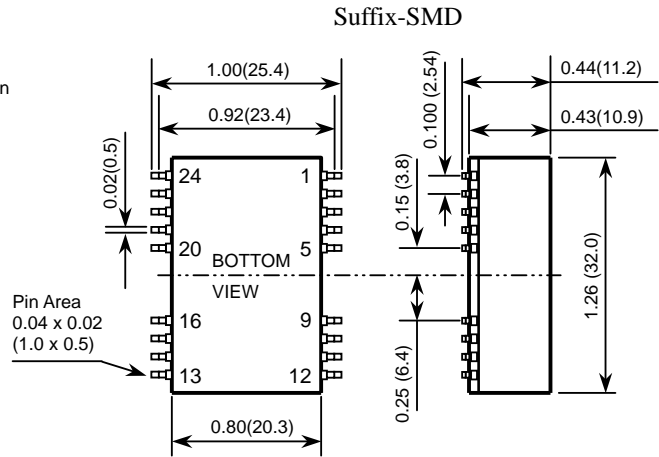
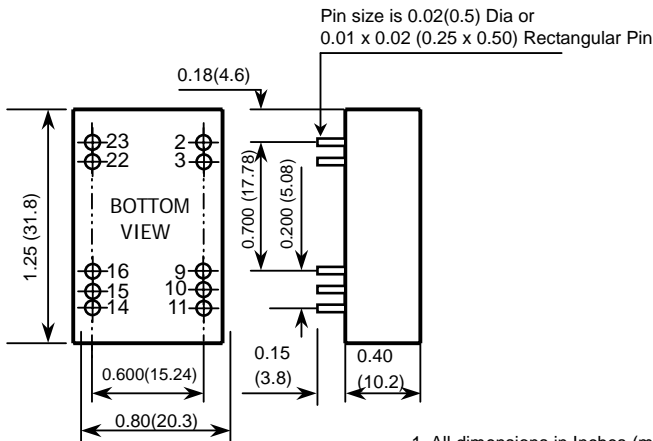
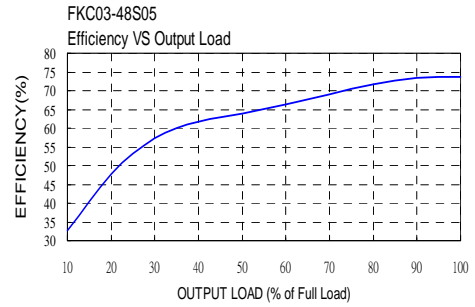
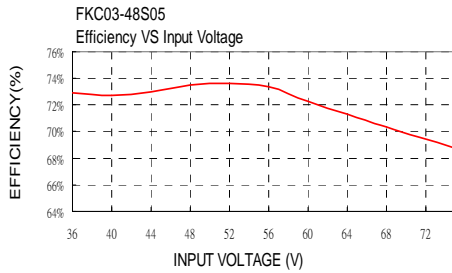


Model Number	Input Range	Output Voltage	Output Current		Output ⁽⁴⁾ Ripple & Noise	Input Current		Eff ⁽⁴⁾ (%)	Capacitor ⁽⁵⁾ Load max
			Min. load	Full load		No load ⁽³⁾	Full load ⁽²⁾		
FKC03-12S33	9 – 18 VDC	3.3 VDC	0mA	500mA	50mVp-p	10mA	194mA	75	220uF
FKC03-12S05	9 – 18 VDC	5 VDC	0mA	500mA	50mVp-p	10mA	289mA	76	1000uF
FKC03-12S12	9 – 18 VDC	12 VDC	0mA	250mA	50mVp-p	10mA	329mA	80	220uF
FKC03-12S15	9 – 18 VDC	15 VDC	0mA	200mA	50mVp-p	15mA	325mA	81	150uF
FKC03-12D05	9 – 18 VDC	± 5 VDC	0mA	± 250mA	50mVp-p	15mA	282mA	78	± 470uF
FKC03-12D12	9 – 18 VDC	± 12 VDC	0mA	± 125mA	50mVp-p	15mA	329mA	80	± 100uF
FKC03-12D15	9 – 18 VDC	± 15 VDC	0mA	± 100mA	50mVp-p	20mA	321mA	82	± 68uF
FKC03-24S33	18 – 36 VDC	3.3 VDC	0mA	500mA	50mVp-p	10mA	101mA	72	2200uF
FKC03-24S05	18 – 36 VDC	5 VDC	0mA	500mA	50mVp-p	10mA	149mA	74	1000uF
FKC03-24S12	18 – 36 VDC	12 VDC	0mA	250mA	50mVp-p	15mA	169mA	78	220uF
FKC03-24S15	18 – 36 VDC	15 VDC	0mA	200mA	50mVp-p	15mA	169mA	78	150uF
FKC03-24D05	18 – 36 VDC	± 5 VDC	0mA	± 250mA	50mVp-p	15mA	149mA	74	± 470uF
FKC03-24D12	18 – 36 VDC	± 12 VDC	0mA	± 125mA	50mVp-p	20mA	171mA	77	± 100uF
FKC03-24D15	18 – 36 VDC	± 15 VDC	0mA	± 100mA	50mVp-p	20mA	171mA	77	± 68uF
FKC03-48S33	36 – 75 VDC	3.3 VDC	0mA	500mA	50mVp-p	5mA	49mA	74	2200uF
FKC03-48S05	36 – 75 VDC	5 VDC	0mA	500mA	50mVp-p	10mA	75mA	74	1000uF
FKC03-48S12	36 – 75 VDC	12 VDC	0mA	250mA	50mVp-p	10mA	83mA	79	220uF
FKC03-48S15	36 – 75 VDC	15 VDC	0mA	200mA	50mVp-p	10mA	84mA	78	150uF
FKC03-48D05	36 – 75 VDC	± 5 VDC	0mA	± 250mA	50mVp-p	10mA	76mA	73	± 470uF
FKC03-48D12	36 – 75 VDC	± 12 VDC	0mA	± 125mA	50mVp-p	10mA	83mA	79	± 100uF
FKC03-48D15	36 – 75 VDC	± 15 VDC	0mA	± 100mA	50mVp-p	10mA	86mA	77	± 68uF

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).
- Maximum value at nominal input voltage and full load of standard type.
- Typical value at nominal input voltage and no load.
- Typical value at nominal input voltage and full load.
- Test by minimum Vin and constant resistive load.
- M1 version is more efficient, therefore, it can be operated in a more extensive temperature range than standard.
- An external filter capacitor is required if the module has to meet EN61000-4-5.
The filter capacitor Power Mate suggest: Nippon chemi-con KY series, 220 μF/100V, ESR 48mΩ.





- 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)

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

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