



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

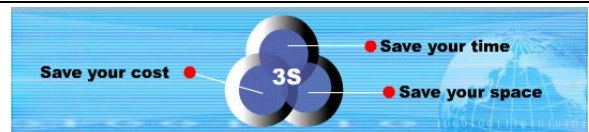
DESCRIPTION

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 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		200µS	
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 100mS max	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
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

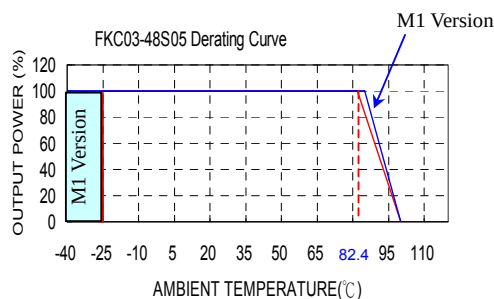


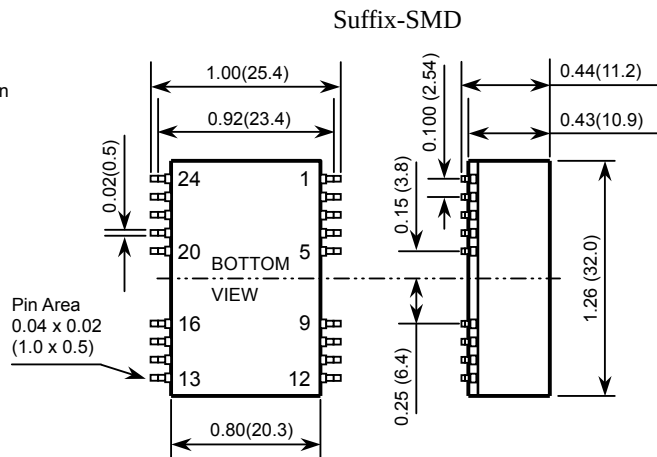
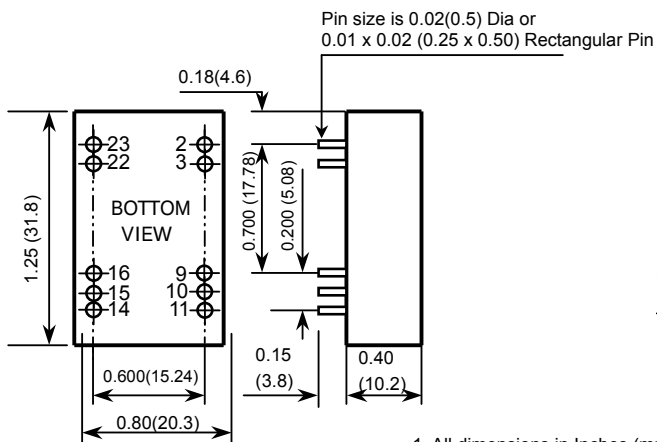
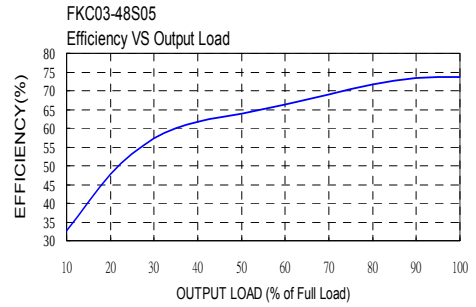
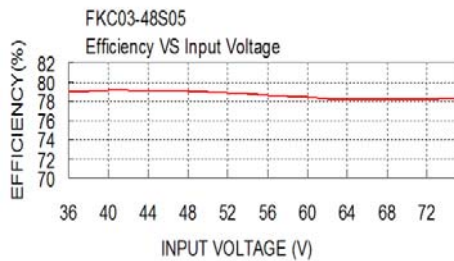


Model Number	Input Range	Output Voltage	Output Current		Output ⁽⁴⁾ Ripple & Noise	Input Current		Eff ⁽⁴⁾ (%)	Capacitor ⁽⁵⁾ Load max
			Min. load	Full load		No load ⁽³⁾	Full load ⁽²⁾		
FKC03-12S33	9 – 18 VDC	3.3 VDC	0mA	500mA	50mVp-p	10mA	194mA	75	2200μF
FKC03-12S05	9 – 18 VDC	5 VDC	0mA	500mA	50mVp-p	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.





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	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

