

**UP TO 20 WATTS - DC SERIES  
SURFACE MOUNT CONVERTER**

**FEATURES:**

- Output trim function
- Overvoltage protection
- High efficiency (to 88%)
- Six sided shield
- Undervoltage lockout
- Remote On/Off
- Short-circuit protection
- UL/CUL 1950, file #E155800

**THE DC SERIES FROM WALL INDUSTRIES**

The DC surface mount series offers the user a wide input range and single output with tight regulation. These converters are highly reliable and well suited for telecom applications.



**SPECIFICATIONS: DC SERIES**

*All specifications apply at 25° C ambient unless otherwise noted.*

**INPUT SPECIFICATIONS**

Input Voltage Range .....	48V Nominal input .....	36-75VDC
Input Voltage Lockout .....	DC-DC On.....	36VDC
	DC-DC Off.....	33VDC
Input Filter (Note 1).....	L-C type	
Input Voltage Variation .....	dv/dt.....	5V/ms, max (complies with ETS300 132 part 4.4)
Input Surge Voltage .....	48V Input (100mS max).....	100VDC
Input Reflected Ripple (Note 2) .....	25mA-p-p (nominal Vin at full load)	
Start Up Time .....	nom. Vin & const. res. load .....	25mS
Remote On/Off (Note 3).....	DC-DC On.....	Open or 3.5V<Vr<12V
	DC-DC Off.....	Short or 0V<Vr<1.2V
Remote off input current ..	nominal Vin.....	2.5mA

**OUTPUT SPECIFICATIONS**

Output Power .....	20 Watts, max	
Voltage accuracy.....	full load and nominal Vin .....	±1%
Voltage adjustability.....	±10%	
Minimum load .....	0%	
Line regulation.....	LL to HL at Full Load .....	±0.2%
Load regulation .....	10% to 100% FL.....	±0.5%
Ripple and noise (Note 4).....	2, 3.3V: 50mV, 75mVp-p	
Temperature Coefficient .....	±0.02%/ °C, max	
Transient resp rec time ....	(25% load step change) .....	300uS
Over voltage protection .....	2.0 & 3.3V output .....	3.9V
..(Zener diode clamp)	5V output.....	6.2V
	12V output.....	15V
	15V output.....	18V
Over load protection ....	% of FL at nom out ...	150% max
Short circuit protection .....	Hiccup, automatic recovery	

**GENERAL SPECIFICATIONS**

Efficiency (nominal input and full load).....	see table
Isolation voltage .....	1600VDC, min
Isolation resistance .....	10 <sup>9</sup> ohms, min
Isolation capacitance .....	500pF, max
Switching frequency.....	300KHz, typ
Approvals & standards.....	IEC60950,UL1950,EN60950
Potting material.....	Epoxy (UL94-V0)
Dimensions.....	1.95 x 1.19 x 0.38 Inch
Weight.....	.32.5g (1.15 oz)
MTFB (Note 5) .....	1.632 x 10 <sup>6</sup> hrs

**ENVIRONMENTAL SPECIFICATIONS**

Operating temp. range.....	-40°C ~ +85°C(w/ derating)
Maximum case temp. ....	+100°C
Storage temp. range .....	-55°C ~ +105°C
Thermal impedance .....	(natural convection).....14°C/Watt
Thermal shock.....	MIL-STD-810D
Vibration .....	10~55Hz, 2G, 30 minutes along X,Y and Z
Relative humidity .....	5% to 95% RH

**EMC CHARACTERISTICS**

Conducted emissions.....	EN55022 .....	Level A
Radiated emissions .....	EN55022 .....	Level A
ESD .....	EN61000-4-2 .....	Perf. Criteria2
Radiated immunity .....	EN61000-4-3 .....	Perf. Criteria2
Fast transient .....	EN61000-4-4 .....	Perf. Criteria2
Surge.....	EN61000-4-5 .....	Perf. Criteria2
Conducted immunity .....	EN61000-4-6 .....	Perf. Criteria2

*Due to advances in technology, specifications subject to change without notice.*

3/18/04

Input Voltage (VDC)	Output Voltage (VDC)	Output Current (A)	Model Number	Efficiency (%)
36-75	2.0	4	DC48S2.0-8	82
	3.3	4	DC48S3.3-13	84
	5	4	DC48S5-20	88
	12	1.67	DC48S12-20	88
	15	1.33	DC48S15-20	87

## PIN CONNECTIONS

1	+Vout
2	-Vout
3	N/C (Note 7)
4	Trim
5	N/C (Note 7)
6	N/C (Note 7)
7	N/C (Note 7)
8	Remote On/Off
9	Sync
10	N/C (Note 7)
11	-Vin
12	+Vin

### NOTES:

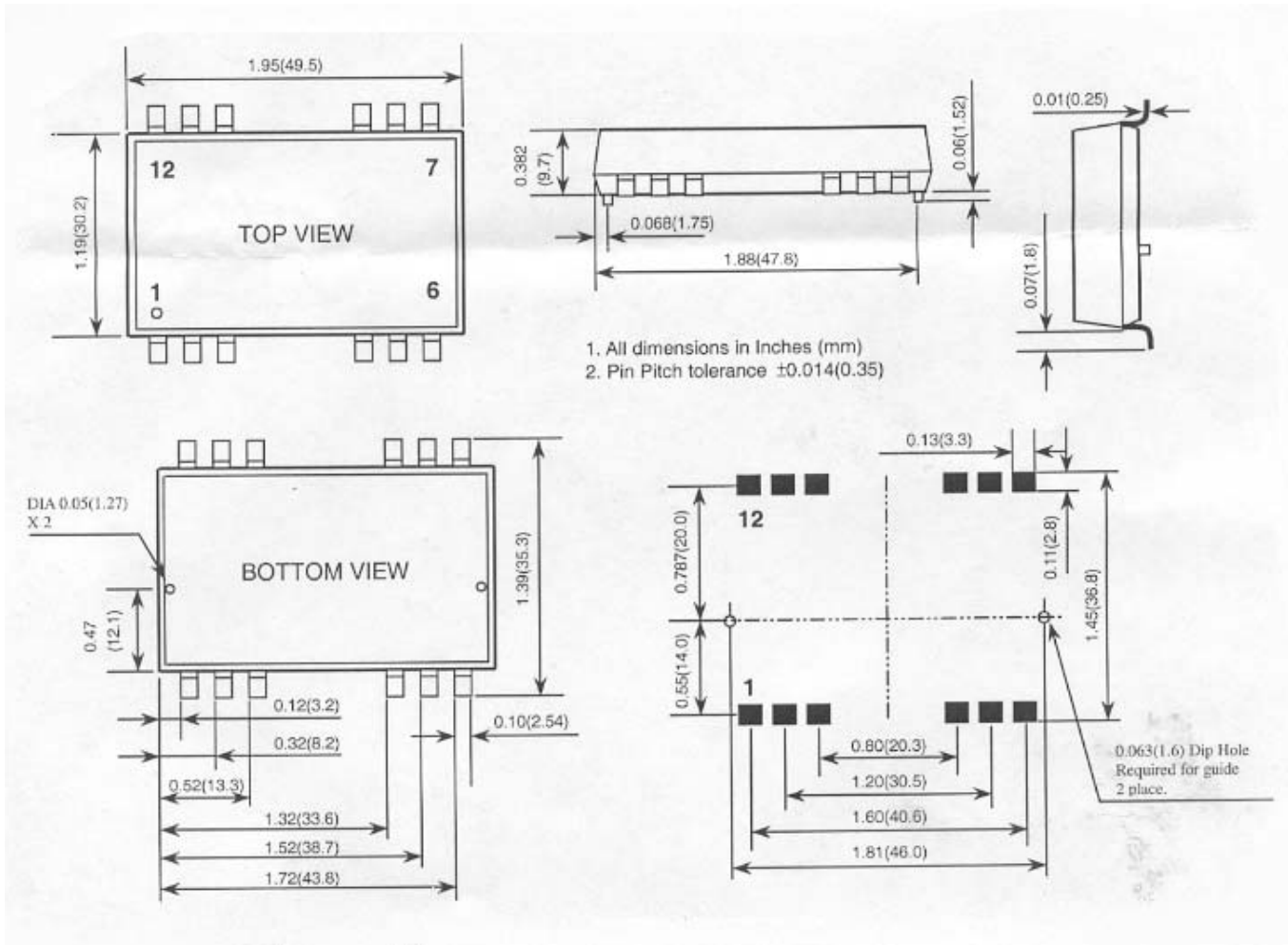
1. An external filter capacitor is required for normal operation. The capacitor should be capable of handling 1A ripple current. We suggest: Nippon chemicon KMF series, 220 $\mu$ F/100V, ESR 90Mohm
2. Simulated source impedance of 12 $\mu$ H. 12 $\mu$ H inductor in series with +Vin.
3. Remote On/Off is referenced to the negative input (-Vin).
4. Measured with 104pF/50V MLCC. Test conditions: nominal input and full load.
5. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment).
6. We recommend solder paste volume of 2.8 cubic mm (170,000 cubic mills/pin).
7. N/C pins may be used internally by the module and should not be connected by the customer.

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**OUTLINE DIAGRAM**

Dimensions are in inches and (millimeters).

Tolerances: x.x ±0.02 in. (0.5 mm) - x.xx ±0.015 in. (0.4 mm)



3/18/04