



## Kaga Electronics (USA) Inc.

2480 N. First St, Suite #100

San Jose, CA 95131

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www.volgen.com

### FEATURES

- 8 WATTS OUTPUT POWER
- OUTPUT CURRENT UP TO 2A
- STANDARD 1.25 X 0.80 X 0.40 INCH
- HIGH EFFICIENCY UP TO 88%
- 2:1 WIDE INPUT VOLTAGE RANGE
- FIVE-SIDED CONTINUOUS SHIELD
- FIXED SWITCHING FREQUENCY (300KHz)
- STANDARD 24 PIN DIP PACKAGE
- CE MARK MEETS 2006/95/EC, 93/68/EEC AND 2004/108/EC
- ISO9001 CERTIFIED MANUFACTURING FACILITIES
- COMPLIANT TO RoHS EU DIRECTIVE 2002/95/EC

### DESCRIPTION

The MT8A series offer 8 watts of output power from a package in an IC compatible 24pin DIP configuration. MT8A series have 2:1 wide input voltage of 9-18, 18-36 and 36-75VDC. The MT8A have features 1600VDC of isolation, short circuit protection and as well as five sided shielding.



## TECHNICAL SPECIFICATION

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

OUTPUT SPECIFICATIONS		
Output power		8 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 ± 0.5% 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	150%, typ.
Short circuit protection		Continuous, automatics recovery
GENERAL SPECIFICATIONS		
Efficiency		See table
Isolation voltage	Input to Output	1600VDC, min.
	Input (Output) to Case	1600VDC, min.
Isolation resistance		10 <sup>9</sup> ohms, min.
Isolation capacitance		300pF max.
Switching frequency		300KHz, typ.
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		16g (0.55oz)
MTBF (Note 1)	BELLCORE TR-NWT-000332	3.053 x 10 <sup>6</sup> hrs
	MIL-HDBK-217F	1.213 x 10 <sup>6</sup> 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		20mAp-p
Start up time	Nominal Vin and	Power up	700mS max.
	Constant resistive load		
Remote ON/OFF (Note 6) (Positive logic)	DC-DC ON	Open or 3.5V < Vr < 12V	
	DC-DC OFF	Short or 0V < Vr < 1.2V	
	Input current of remote control pin	Nominal Vin	-0.5mA ~ 0.5mA
Remote off state input current	Nominal Vin		2.5mA
ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature		-40°C to +85°C (with derating)	
Maximum case temperature		+100°C	
Storage temperature range		-55°C to +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 (Note 7)	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 8)	EN61000-4-4	± 2KV	Perf. Criteria A
Surge (Note 8)	EN61000-4-5	± 1KV	Perf. Criteria A
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A



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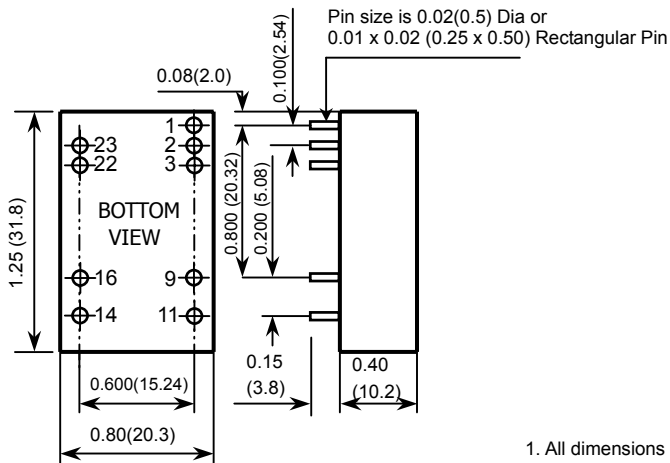
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Model Number	Input Range	Output Voltage	Output Current		Output <sup>(4)</sup> Ripple & Noise	Input Current		Eff <sup>(4)</sup> (%)	Capacitor <sup>(5)</sup> Load max
			Min. load	Full load		No load <sup>(3)</sup>	Full load <sup>(2)</sup>		
MT8A-1233SI	9 – 18 VDC	3.3 VDC	0mA	2000mA	50mVp-p	10mA	724mA	80	3300µF
MT8A-1205SI	9 – 18 VDC	5 VDC	0mA	1500mA	50mVp-p	15mA	791mA	83	1600µF
MT8A-1212SI	9 – 18 VDC	12 VDC	0mA	666mA	50mVp-p	13mA	792mA	88	350µF
MT8A-1215SI	9 – 18 VDC	15 VDC	0mA	533mA	50mVp-p	20mA	802mA	87	240µF
MT8A-1205WI	9 – 18 VDC	± 5 VDC	0mA	± 800mA	50mVp-p	15mA	843mA	83	± 1000µF
MT8A-1212WI	9 – 18 VDC	± 12 VDC	0mA	± 333mA	50mVp-p	20mA	802mA	87	± 160µF
MT8A-1215WI	9 – 18 VDC	± 15 VDC	0mA	± 267mA	50mVp-p	20mA	824mA	85	± 100µF
MT8A-2433SI	18 – 36 VDC	3.3 VDC	0mA	2000mA	50mVp-p	10mA	362mA	80	3300µF
MT8A-2405SI	18 – 36 VDC	5 VDC	0mA	1500mA	50mVp-p	30mA	396mA	83	1600µF
MT8A-2412SI	18 – 36 VDC	12 VDC	0mA	666mA	50mVp-p	13mA	406mA	86	350µF
MT8A-2415SI	18 – 36 VDC	15 VDC	0mA	533mA	50mVp-p	15mA	411mA	85	240µF
MT8A-2405WI	18 – 36 VDC	± 5 VDC	0mA	± 800mA	50mVp-p	15mA	427mA	82	± 1000µF
MT8A-2412WI	18 – 36 VDC	± 12 VDC	0mA	± 333mA	50mVp-p	15mA	406mA	86	± 160µF
MT8A-2415WI	18 – 36 VDC	± 15 VDC	0mA	± 267mA	50mVp-p	13mA	411mA	85	± 100µF
MT8A-4833SI	36 – 75 VDC	3.3 VDC	0mA	2000mA	50mVp-p	7mA	181mA	80	3300µF
MT8A-4805SI	36 – 75 VDC	5 VDC	0mA	1500mA	50mVp-p	8mA	198mA	83	1600µF
MT8A-4812SI	36 – 75 VDC	12 VDC	0mA	666mA	50mVp-p	10mA	203mA	86	350µF
MT8A-4815SI	36 – 75 VDC	15 VDC	0mA	533mA	50mVp-p	10mA	203mA	86	240µF
MT8A-4805WI	36 – 75 VDC	± 5 VDC	0mA	± 800mA	50mVp-p	8mA	205mA	85	± 1000µF
MT8A-4812WI	36 – 75 VDC	± 12 VDC	0mA	± 333mA	50mVp-p	8mA	200mA	87	± 160µF
MT8A-4815WI	36 – 75 VDC	± 15 VDC	0mA	± 267mA	50mVp-p	7mA	201mA	87	± 100µF

### 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.
- The ON/OFF control pin voltage is referenced to -Vin.
- The MT8A series can meet EN55022 Class A with parallel an external capacitor to the input pins.  
Recommend: 12Vin: 4.7µF/25V 1210 MLCC.  
24Vin: N/A.  
48Vin: N/A.
- An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.  
The filter capacitor Kaga USA suggests: Nippon chemi-con KY series, 220µF/100V, ESR 48mΩ.



### DIP PIN CONNECTION

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

- 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)