Kaga Electronics (USA) Inc.
2480 N. First St, Suite #100
San Jose, CA 95131
Tel: (408)570-0955 Fax: (408)570-0186
www.volgen.com

- **5 WATTS OUTPUT POWER**
- **2:1 AND 4:1 WIDE INPUT VOLTAGE RANGE**
- **FIVE-SIDED SHIELD**
- **HIGH EFFICIENCY UP TO 84%**
- **STANDARD 24 PIN DIP PACKAGE**
- **FIXED SWITCHING FREQUENCY**



TECHNICAL SPECIFICATION

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

OUTPUT SPECIFICATIONS

Output power			5 Watts, max
Voltage accuracy	Full load and nominal Vin		± 1%
Minimum load (Note 1)			10% of FL
Line regulation	LL to HL at Full Load		± 0.2%
Load regulation	25% to 100% FL	Single Dual	± 0.5% ± 1%
Cross regulation(Dual)	Asymmetrical load 25% / 100% FL		± 5%
Ripple and noise	20MHz bandwidth		50mVp-p
Temperature coefficient			±0.02% / ºC, max
Transient response recovery time	25% load step change		200uS
Over load protection	% of FL at nominal input		170%, typ
Short circuit protection			Continuous, automatics recovery

INPUT SPECIFICATIONS

Input voltage range	MT5A	12V nominal input	9 – 18VDC
		24V nominal input	18 – 36VDC
		48V nominal input	36 – 75VDC
	MT5A-W	24V nominal input	9 – 36VDC
		48V nominal input	18 – 75VDC
Input filter			Pi type
Input surge voltage 100mS max		12V input	36VDC
		24V input	50VDC
		48V input	100VDC
Input reflected ripple		Nominal Vin and full load	20mAp-p
Start up time	Nominal Vin and constant resistive load	Power up	450mS, max

GENERAL SPECIFICATIONS

Efficiency		See table
Isolation voltage	Input to Output	1600VDC, min
	Input (Output) to Case	1600VDC, min
Isolation resistance		10^9 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 3)		3.165 x 10^6 hrs

ENVIRONMENTAL SPECIFICATIONS

Operating temperature range	Standard	-25ºC~+85ºC (with derating)
	M1 (Note 2)	-40ºC~+85ºC (non-derating)
	M2 (W series)	-40ºC~+85ºC (with derating)
Maximum case temperature		+100ºC
Storage temperature range		-55ºC ~ +105ºC
Thermal impedance	Nature convection	20ºC/watt
Thermal shock		MIL-STD-810D
Vibration		10~55Hz, 10G, 30minitues along X,Y and Z
Relative humidity		5% to 95% RH

EMC CHARACTERISTICS

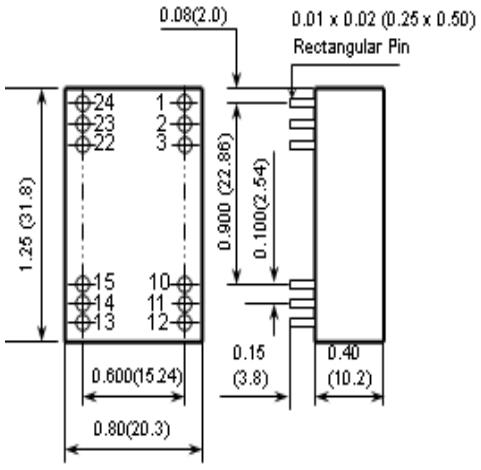
Conducted emissions	EN55022	Class A
Radiated emissions	EN55022	Class A
ESD	EN61000-4-2	Perf. CriteriaB
Radiated immunity	EN61000-4-3	Perf. CriteriaA
Fast transient	EN61000-4-4	Perf. CriteriaB
Surge	EN61000-4-5	Perf. CriteriaB
Conducted immunity	EN61000-4-6	Perf. CriteriaA

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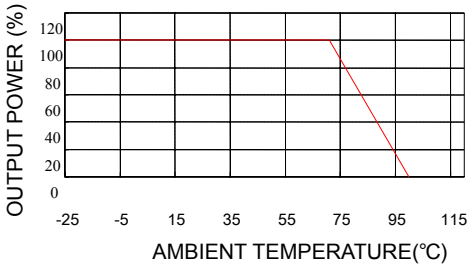
Model Number	Input Range	Output Voltage	Output Current	Input Current (4)	Efficiency (5) (%)
MT5A-1233SI	9 – 18 VDC	3.3 VDC	1000mA	382mA	76
MT5A-1205SI	9 – 18 VDC	5 VDC	1000mA	563mA	78
MT5A-1212SI	9 – 18 VDC	12 VDC	470mA	603mA	82
MT5A-1215SI	9 – 18 VDC	15 VDC	400mA	649mA	81
MT5A-1205WI	9 – 18 VDC	± 5 VDC	± 500mA	563mA	78
MT5A-1212WI	9 – 18 VDC	± 12 VDC	± 230mA	597mA	81
MT5A-1215WI	9 – 18 VDC	± 15 VDC	± 190mA	594mA	84
MT5A-2433SI (W)	18 – 36 (9 – 36) VDC	3.3 VDC	1000mA	194mA (191mA)	75 (76)
MT5A-2405SI (W)	18 – 36 (9 – 36) VDC	5 VDC	1000mA	285mA (278mA)	77 (79)
MT5A-2412SI (W)	18 – 36 (9 – 36) VDC	12 VDC	470mA	305mA (305mA)	81 (81)
MT5A-2415SI (W)	18 – 36 (9 – 36) VDC	15 VDC	400mA	325mA (312mA)	81 (84)
MT5A-2405WI (W)	18 – 36 (9 – 36) VDC	± 5 VDC	± 500mA	274mA (282mA)	80 (78)
MT5A-2412WI (W)	18 – 36 (9 – 36) VDC	± 12 VDC	± 230mA	288mA (295mA)	84 (82)
MT5A-2415WI (W)	18 – 36 (9 – 36) VDC	± 15 VDC	± 190mA	308mA (297mA)	81 (84)
MT5A-4833SI (W)	36 – 75 (18 – 75) VDC	3.3 VDC	1000mA	98mA (100mA)	74 (73)
MT5A-4805SI (W)	36 – 75 (18 – 75) VDC	5 VDC	1000mA	143mA (138mA)	77 (79)
MT5A-4812SI (W)	36 – 75 (18 – 75) VDC	12 VDC	470mA	151mA (155mA)	82 (80)
MT5A-4815SI (W)	36 – 75 (18 – 75) VDC	15 VDC	400mA	162mA (160mA)	81 (82)
MT5A-4805WI (W)	36 – 75 (18 – 75) VDC	± 5 VDC	± 500mA	141mA (145mA)	78 (76)
MT5A-4812WI (W)	36 – 75 (18 – 75) VDC	± 12 VDC	± 230mA	147mA (151mA)	82 (80)
MT5A-4815WI (W)	36 – 75 (18 – 75) VDC	± 15 VDC	± 190mA	150mA (156mA)	83 (80)

Note

1. The MT5A series required a minimum 10% loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices, however they may not meet all listed specification.
2. BELLCORE TR-NWT-000332. Case 1 :
   50% Stress, Temperature at 40ºC. (Ground fixed and controlled environment)
3. M1 version is more efficient, therefore, it can be operated in a more extensive temperature range than standard and M2 version
4. Maximum value at nominal input voltage and full load of standard type.
5. Typical value at nominal input voltage and full load
6. There is no pin at PIN10 & PIN15 for MT5A-W series



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 ±0.014(0.35)



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 (Note6)	NC (Note6)	15	NC (Note6)	NC (Note6)
11	NC	- OUTPUT	14	+ OUTPUT	+ OUTPUT