



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 25°C 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	± 0.5%
		Dual	± 1%
Cross regulation(Dual)	Asymmetrical load 25% / 100% FL	± 5%	
Ripple and noise	20MHz bandwidth	50mVp-p	
Temperature coefficient			±0.02% / °C, 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
	MT5A-W	48V nominal input	36 – 75VDC
		24V nominal input	9 – 36VDC
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	20mA _{p-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	-25°C~+85°C (with derating)	
	M1 (Note 2)	-40°C~+85°C (non-derating)	
	M2 (W series)	-40°C~+85°C (with derating)	
Maximum case temperature			+100°C
Storage temperature range			-55°C ~ +105°C
Thermal impedance	Nature convection	20°C/watt	
Thermal shock			MIL-STD-810D
Vibration			10~55Hz, 10G, 30minuties 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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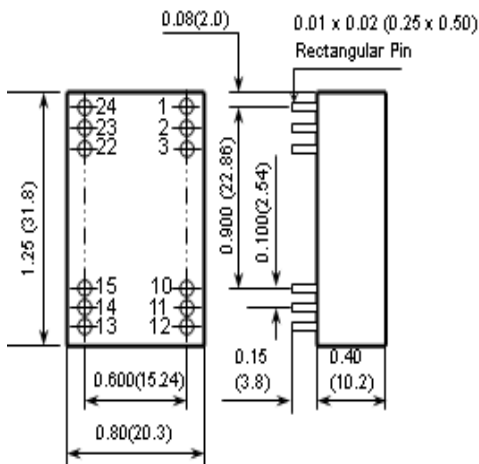
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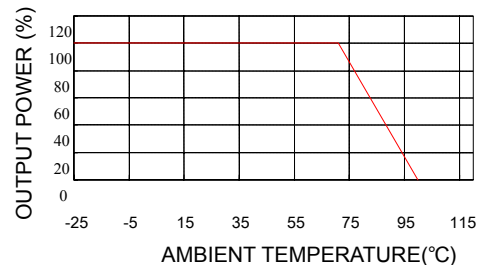
Model Number	Input Range	Output Voltage	Output Current	Input Current ⁽⁴⁾	Efficiency ⁽⁵⁾ (%)
MT5A-1233SI	9 – 18 VDC	3.3 VDC	1000mA	382mA	76
MT5A-1205SI	9 – 18 VDC	5 VDC	1000mA	563mA	78
MT5A-1212SI	9 – 18 VDC	12 VDC	470mA	603mA	82
MT5A-1215SI	9 – 18 VDC	15 VDC	400mA	649mA	81
MT5A-1205WI	9 – 18 VDC	± 5 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

- 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.
- BELLCORE TR-NWT-000332. Case 1 :
50% Stress, Temperature at 40°C. (Ground fixed and controlled environment)
- M1 version is more efficient, therefore, it can be operated in a more extensive temperature range than standard and M2 version
- Maximum value at nominal input voltage and full load of standard type.
- Typical value at nominal input voltage and full load
- There is no pin at PIN10 & PIN15 for MT5A-W series



- All dimensions in Inches (mm)
Tolerance : $x.xx \pm 0.02 (x.x \pm 0.5)$
 $x.xxx \pm 0.01 (x.xx \pm 0.25)$
- Pin pitch tolerance $\pm 0.014 (0.35)$



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