SPECIFICATIONS, ALL MODELS

Specifications are at T_{CASE} = +40°C nominal input voltage unless otherwise specified.

	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT	**INPUT**					
	Voltage Range					
	VKA100LS		18	24	36	VDC
	VKA100MS		33	48	75	VDC
	Maximum Input Current					
	VKA100LS	V_{IN} = 16VDC			7.4	A
	VKA100MS	V_{IN} = 27VDC			4.4	A
	Reflected Ripple Current	Peak - Peak		20		mA
	Input Ripple Rejection	DC to 1KHz	50	60		dB
	No Load Input Current LS/MS			140/80		mA
	No Load	Power Dissipation LS/MS		3.4/3.8		W
	Standby, Primary On/Off Disabled LS/MS			0.12/0.24		W
	Inrush Charge	V_{IN} = V_{IN}max.				
	VKA100LS				0.520	mC
	VKA100MS				0.360	mC
	Quiescent Operating Current Primary On/Off Disabled			5	12	mA

	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
OUTPUT	Rated Power		0		100	W
	Set point Accuracy				1	%
	Line Regulation	High Line to Low Line		0.02	0.05	%
	Load Regulation	No Load to Rated Load		0.2	0.5	%
	Output Temperature Drift			±.02		%/°C
	Output Ripple, p-p	DC to 20MHz BW		1%		V_{OUT}, Nom
	Output Current Limit Inception			130%	150%	I_{OUT}, Nom
	Output Short-Circuit Current (2)	test		120%	150%	I_{OUT}, Nom
	Output Overvoltage Limit			125%	135%	V
	Transient Response	50 to 100% Load Step				
	Peak Deviation	di/dt = 0.1A/µSec		2%		V_{OUT}, Nom
	Settling Time	V_{OUT}, 1% of Nominal Output		100		µSec

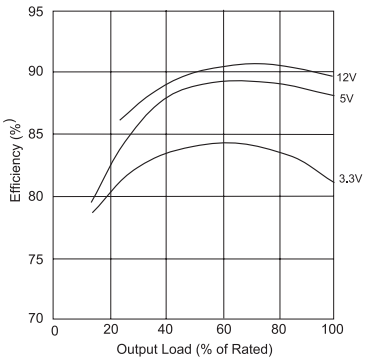
	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
GENERAL	**ISOLATION**					
	Input to Output	Peak Test for 2 Seconds	1500			VDC
	Input to Baseplate		1500			VDC
	Output to Baseplate		500			VDC
	Resistance		10			MΩ
	Capacitance			2000		pF
	Leakage Current	V_{ISO} = 240VAC, 60Hz		180		µA, rms
	GENERAL					
	Efficiency, Line, Load, Temp. (3)					
	Switching Frequency		400	420	440	KHz
	Remote Sense Compensation				0.5	V
	Output Voltage Adjust Range	12 V & higher(4)		-50% / +25%		V_{OUT}, Nom
	Remote On/Off Control Inputs					
	Primary	Open Collector/Drain				
	Sink Current-Logic Low				1.0	mA
	Vlow				0.4	V
	Vhigh0				Open Collector	
	Turn-on Time	Within 1% of Rated Output		10.0	12.5	mSec
	Weight				85 (3.0)	g (oz.)
	TEMPERATURE					
	Operation/Specification	Case Temperature	-40	+25	+100	°C
	Storage	Case Temperature	-55	+25	+125	°C
	Shutdown Temperature	Case Temperature	+100		+115	°C
	Thermal Impedance, case-ambient			7.1		°C/W
	Lead Solder Temperature	10 Seconds max			+300	°C

NOTES: (1) See Typical Performance Curves, page 3
(2) Continuous Mode
(3) See graphs for Efficiency vs. Output Load, V_{IN}, T_{CASE}
(4) 3.3V Models Limited in Trim Down Range
(5) Consult Factory for Details

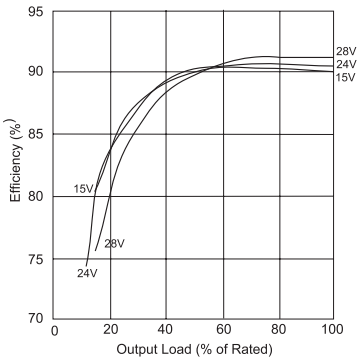
TYPICAL PERFORMANCE CURVES

T_{CASE} = +40°C nominal input voltage unless otherwise specified.

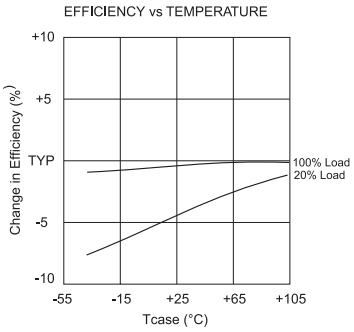
EFFICIENCY vs OUTPUT LOAD



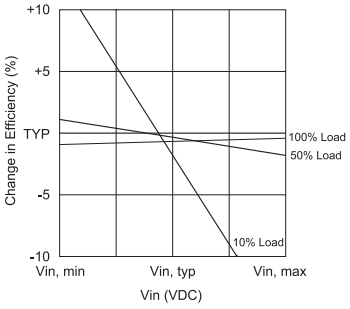
EFFICIENCY vs OUTPUT LOAD



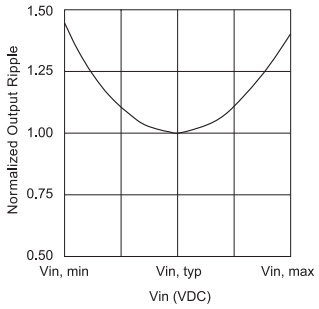
EFFICIENCY vs TEMPERATURE



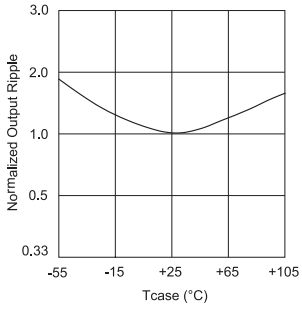
EFFICIENCY vs INPUT VOLTAGE



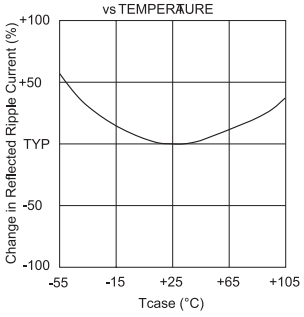
OUTPUT RIPPLE vs INPUT VOLTAGE



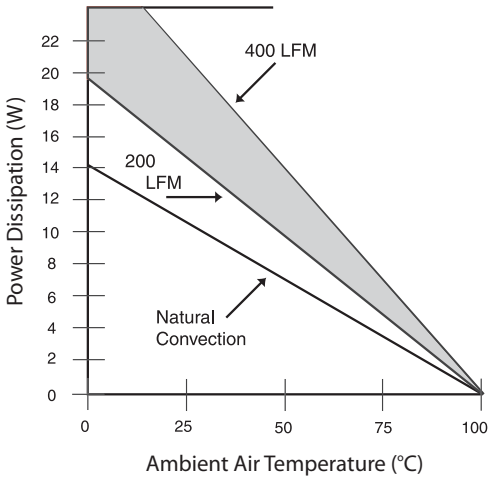
OUTPUT RIPPLE vs TEMPERATURE



REFLECTED RIPPLE CURRENT vs TEMPERATURE



POWER DERATING WTH NO HEATSINK

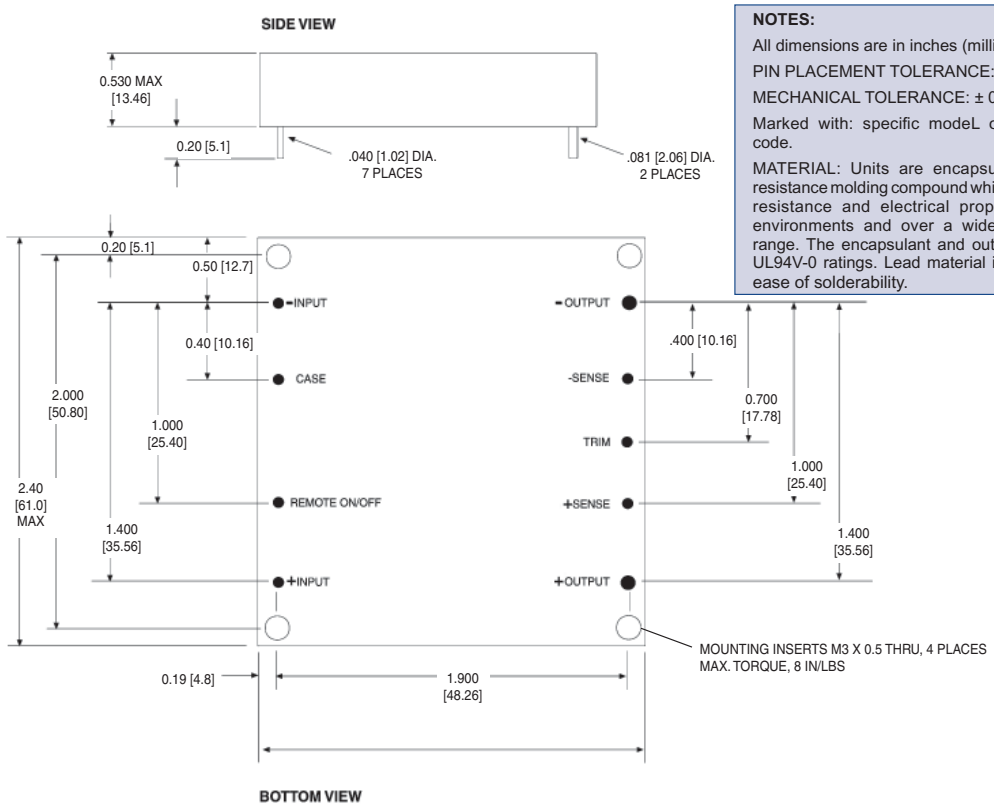


ORDERING INFORMATION

VKA100 xSzz -_ ____

Device Family
Indicates 100 Watt Regulated Unit
Model Number
Selected from Table of Electrical Characteristics
Where:
x = Input Voltage (L = 24VDC; M = 48VDC)
zz = Output Voltage (03=3.3V, 05=5V, etc.)
Lead Length
0.200" - No Number
0.145" - (6)
0.110" - (8)
Remote On-Off Logic:
Positive - No Number
Negative - (1)

MECHANICAL



NOTES:

All dimensions are in inches (millimeters).

PIN PLACEMENT TOLERANCE: ± 0.005”

MECHANICAL TOLERANCE: ± 0.015”

Marked with: specific modeL ordered, date code, job code.

MATERIAL: Units are encapsulated in a low thermal resistance molding compound which has excellent chemical resistance and electrical properties in high humidity environments and over a wide operating temperature range. The encapsulant and outer shell of the unit have UL94V-0 ratings. Lead material is solder plated to allow ease of solderability.

OUTPUT ADJUST VOLTAGE

This feature allows the user to accurately adjust the module’s output voltage set point to a specified level. This is achieved by connecting a resistor or potentiometer from the TRIM terminal to either the +Vout terminal (for increased Vout) or the -Vout terminal (for decreased Vout). The formulae below describe the trim resistor value to obtain a Vout change of Δ%. Vo is output voltage prior to adjustment (3.3V, 5V, 12V, 15V, or 24V).

$$\text{Radj - up} = \left(\frac{Vo(100 + \Delta\%)}{1.225\Delta\%} - \frac{(100 + 2\Delta\%)}{\Delta\%} \right) k\Omega$$

$$\text{Radj - down} = \left(\frac{100}{\Delta\%} - 2 \right) k\Omega$$

OVP NOTE

Special attention should be given to the peak voltage deviation during a dynamic load step when trimming the output above the original set point to avoid tripping the overvoltage protection circuit. Should an OVP condition occur, the converter will go into a latch condition and must be externally reset before it will return to normal operation.

Murata Power Solutions, Inc.
11 Cabot Boulevard, Mansfield, MA 02048-1151 U.S.A.
ISO 9001 and 14001 REGISTERED

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Murata:

VKA100LS02 VKA100LS02F VKA100LS2V5F VKA100LS03 VKA100LS03F VKA100LS05 VKA100LS12 VKA100LS15 VKA100LS24 VKA100MS02 VKA100MS02F VKA100MS2V5F VKA100MS03 VKA100MS03F VKA100MS05 VKA100MS12 VKA100MS15 VKA100MS24 VKA100LS12-1 VKA100LS02F-1 VKA100MS02F-1 VKA100MS15-1 VKA100MS03-1 VKA100LS03-1 VKA100MS02-1 VKA100LS15-1 VKA100LS24-1 VKA100LS05-1 VKA100LS2V5F-1 VKA100MS12-1 VKA100MS03F-1 VKA100LS03F-1 VKA100LS02-1 VKA100MS05-1 VKA100MS24-1 VKA100MS2V5F-1 VKA100MS03FC VKA100LS03C VKA100MS15-1C VKA100LS24C VKA100LS15-1C VKA100MS02C VKA100LS02FC VKA100MS05C VKA100MS02-1C VKA100LS03F-1C VKA100MS03F-1C VKA100LS15C VKA100LS2V5FC VKA100MS2V5FC VKA100LS12C VKA100MS24-1C VKA100LS24-1C VKA100MS02F-1C VKA100MS15C VKA100MS12-1C VKA100LS12-1C VKA100LS03FC VKA100MS12C VKA100LS05C VKA100LS02F-1C VKA100MS02FC VKA100MS03C VKA100LS03-1C VKA100MS03-1C VKA100MS24C VKA100LS05-1C VKA100MS05-1C