

# TOTAL POWER INT'L

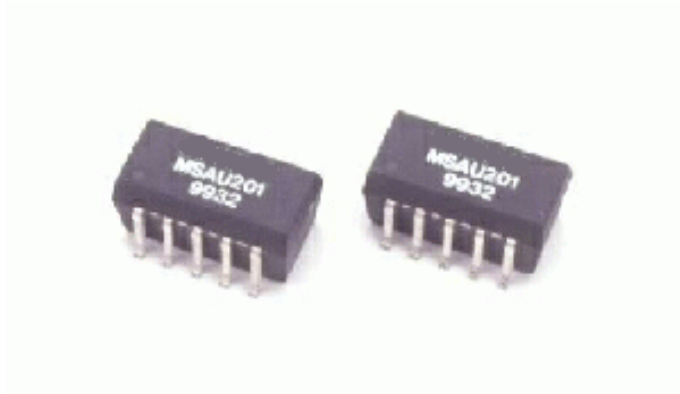
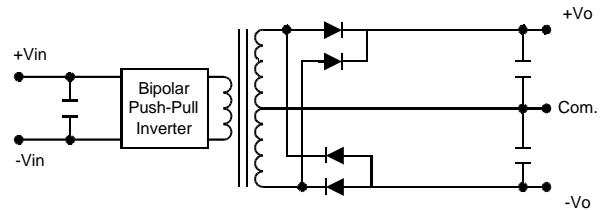
## MSAU200 Series

### 1 Watts Ultra Miniature SMD DC/DC Converters

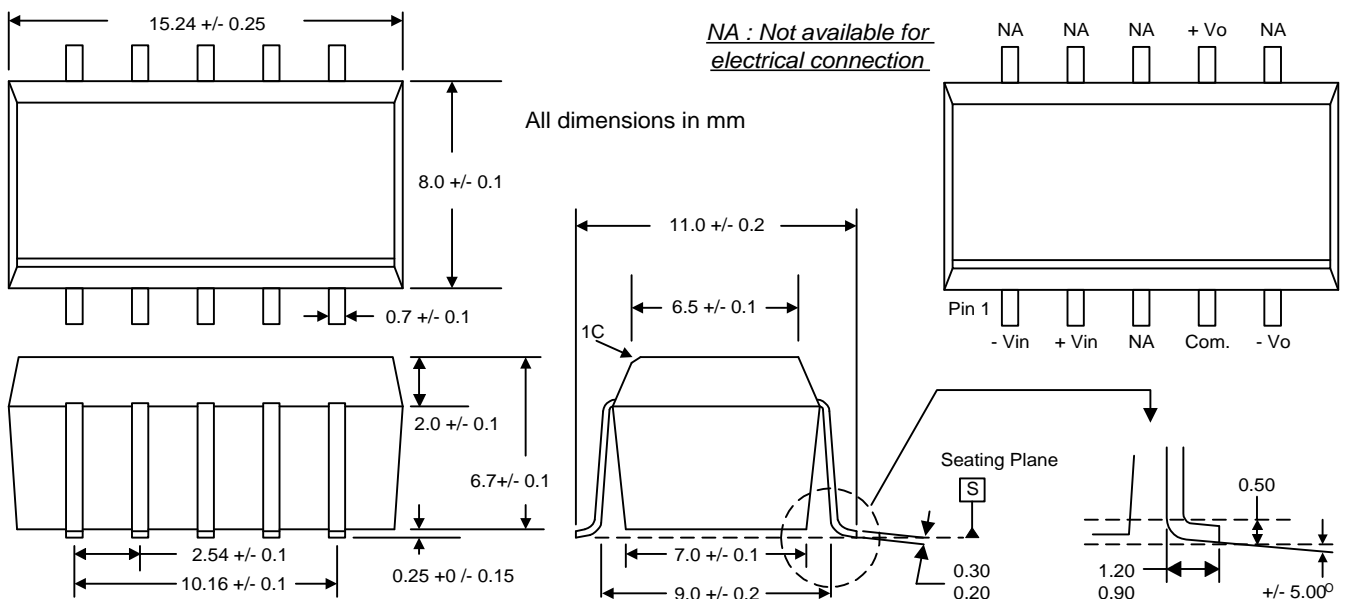
Dual Outputs

#### Key Features

- Lead Frame Technology
- CECC00802 Reflow ( 280] )
- Wide Temperature Performance
- I / O Isolation 1000VDC
- Efficiency Up To 82%
- MTBF > 2,000,000 Hours



#### Mechanical Configuration & Pin Connections



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## Absolute Maximum Ratings

Exceeding these values can damage the module. These are not continuous operating ratings.

Parameter		Min.	Max.	Unit.
Input Surge Voltage ( 1000 mS )	5VDC Input Models	-0.7	9	VDC
	12VDC Input Models	-0.7	18	VDC
Internal Power Dissipation		---	450	mW

## Environmental Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating Temperature		-25	---	+85	°C
Storage Temperature		-40	---	+125	°C
Humidity		---	---	95	%
Cooling	Free-Air Convection				

## Model Selection Guide

Model Number	Input voltage VDC	Output Voltage VDC	Output Current mA (Max.)	Output Current mA (Min.)	Input Current Max. Load mA (Typ.)	Input Current No Load mA (Typ.)	Load Regulation % (Max.)	Efficiency % (Typ.)
MSAU201	5 (4.5 ~ 5.5)	±5	±100	±2	267	30	10	75
MSAU202		±9	±55	±1	260		10	76
MSAU203		±12	±42	±0.8	255		8	79
MSAU204		±15	±33	±0.7	251		7	79
MSAU211	12 (10.8 ~ 13.2)	±5	±100	±2	111	15	8	75
MSAU212		±9	±55	±1	109		8	76
MSAU213		±12	±42	±0.8	105		5	80
MSAU214		±15	±33	±0.7	103		5	80

Specifications typical at  $T_a = +25^\circ\text{C}$ , resistive load, nominal input voltage, rated output current unless otherwise noted.

## General Specification

Parameter	Conditions	Min.	Typ.	Max.	Unit
Rated Isolation Voltage	60 Seconds	1000	---	---	VDC
Isolation Resistance	500VDC	1000	---	---	MΩ
Isolation Capacitance	100KHz, 1V	---	40	100	pF
Switching Frequency		70	100	140	kHz

## Input Specifications

Parameter	Model	Min.	Typ.	Max.	Unit
Input Voltage Range	5V Input Models	4.5	5	5.5	VDC
	12V Input Models	10.8	12	13.2	
Reverse Polarity Input Current	All Models	---	---	0.3	A
Input Filter		Internal Capacitor			

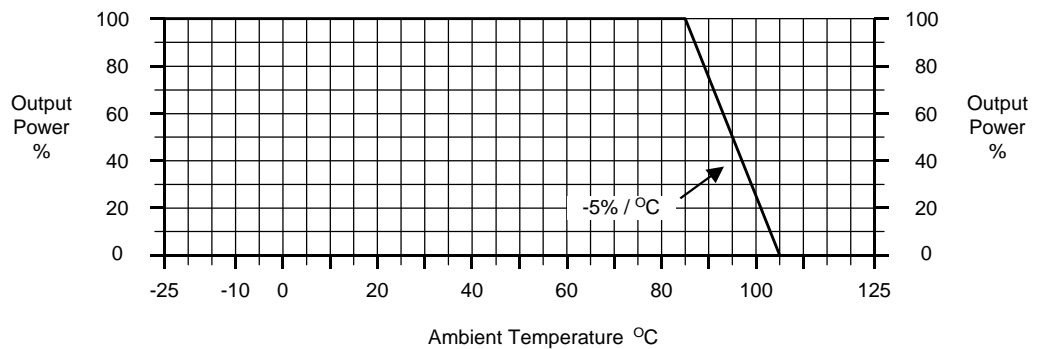
## Output Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		---	±1.0	±3.0	%
Output Voltage Balance	Dual Output Balance Load	---	±0.1	±1.0	%
Line Regulation	For Vin Change 1%	---	±1.2	±1.5	%
Load Regulation	Io=20% to 100%	See Model Selection Guide			%
Ripple & Noise (20MHz)		---	60	120	mV P-P
Ripple & Noise (20MHz)	Over Line, Load & Temp.	---	---	150	mV P-P
Ripple & Noise (20MHz)		---	---	5	mV rms.
Over Load		120	---	---	%
Temperature Coefficient		---	±0.01	±0.02	%/°C
Output Short Circuit	0.5 Second Max.				

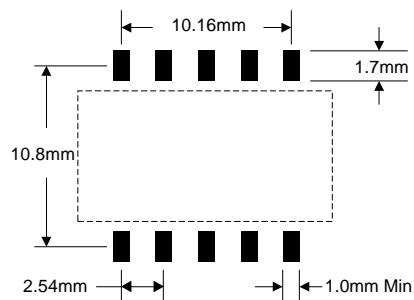
## Input Fuse Selection Guide

5V Input Models	12V Input Models
500mA Slow – Blow Type	200mA Slow – Blow Type

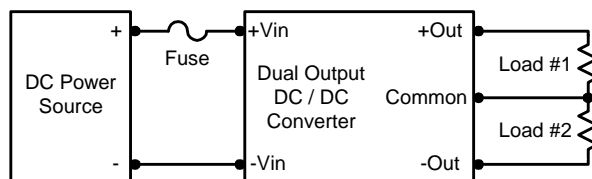
## Derating Curve



## Connecting Pin Patterns

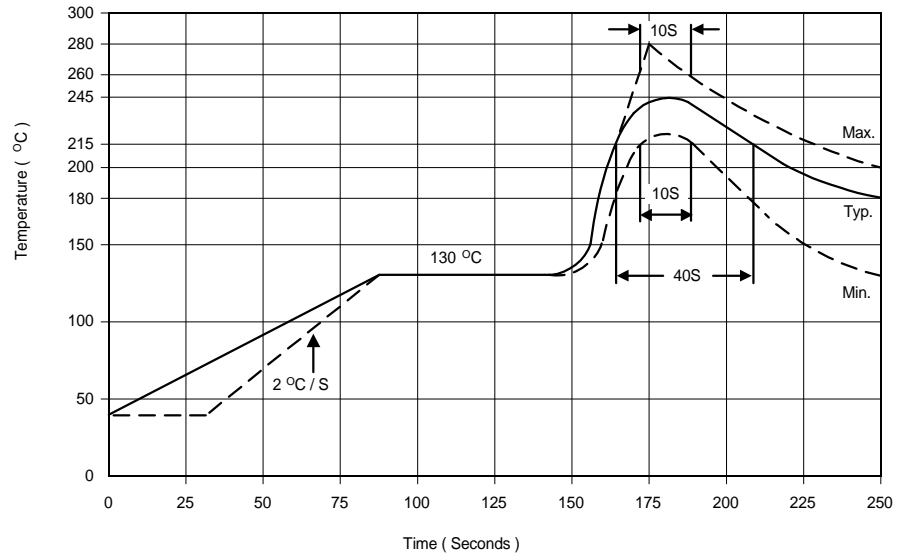


## Typical Applications

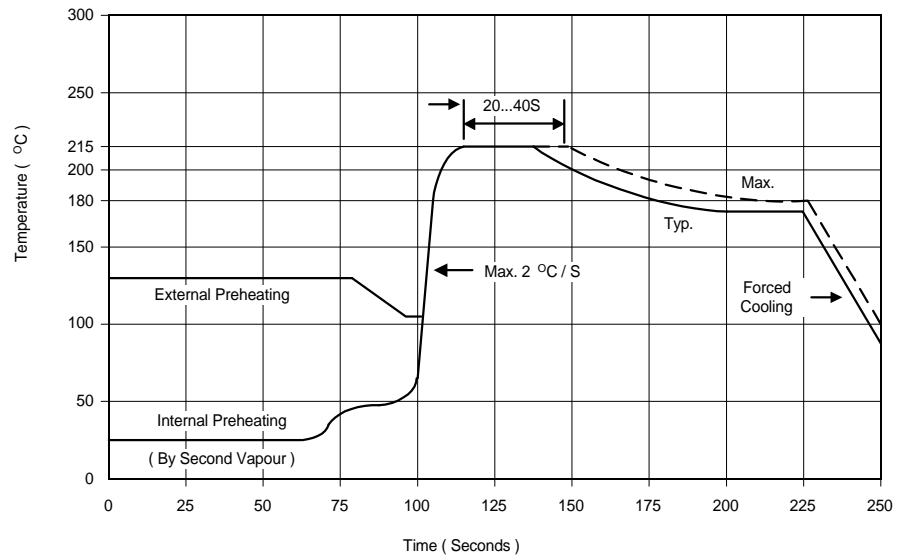


# MSAU200 Series

## Infra-Red Soldering



## Vapour Phase Soldering with Pre-Heating

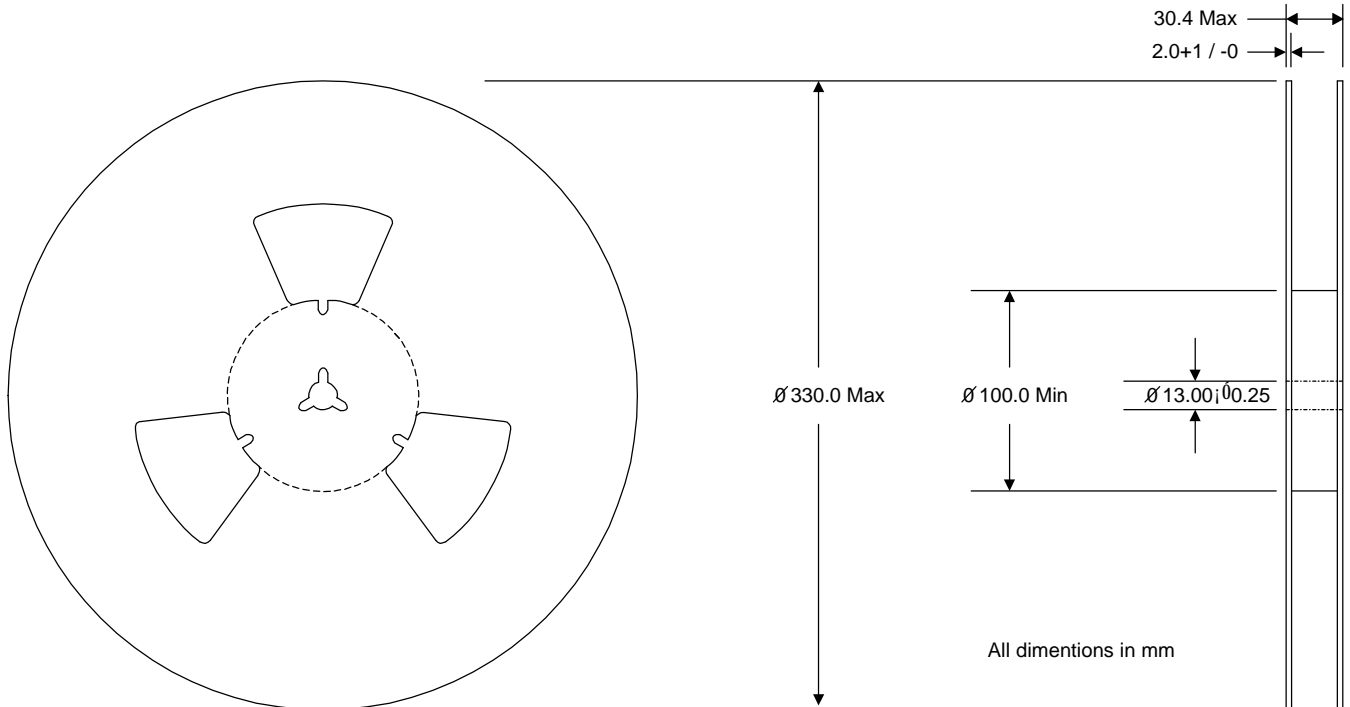


### NOTE:

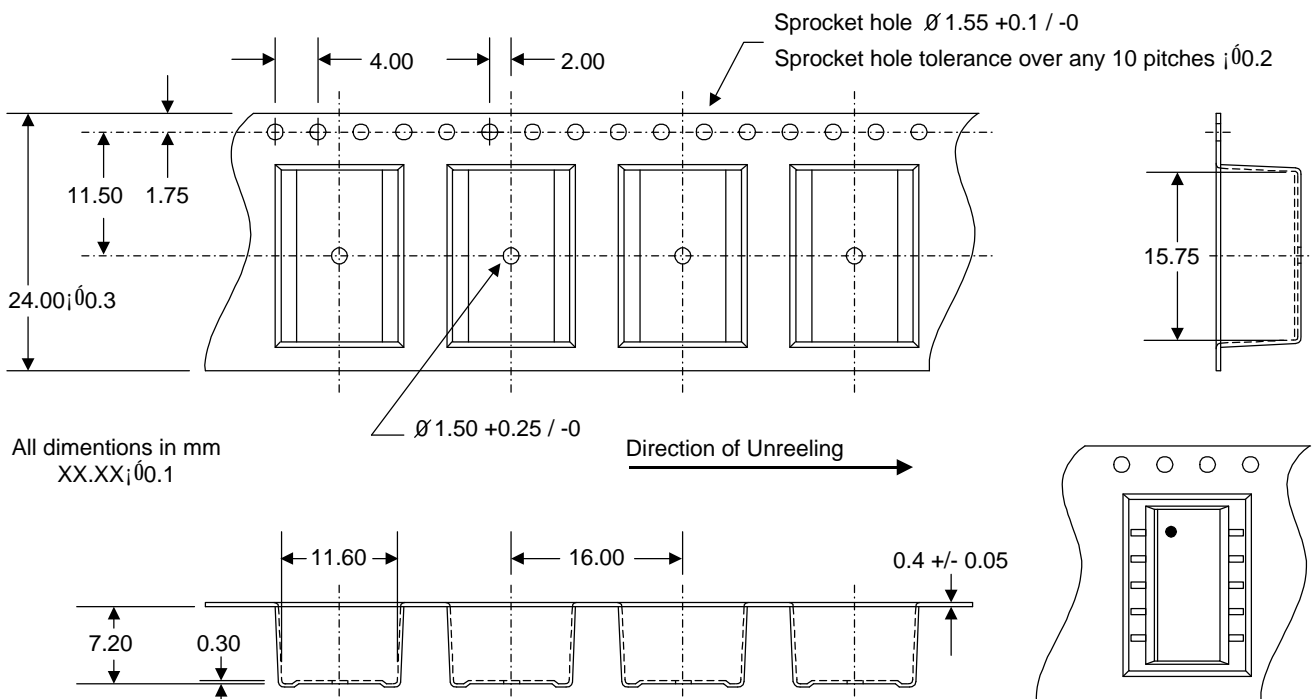
1. Specifications typical at  $T_a = +25^\circ\text{C}$ , resistive load, nominal input voltage, rated output current unless otherwise noted.
2. Other input and output voltage may be available, Please contact factory.
3. Specifications subject to change without notice.

**Packaging Specifications**

**Reel ( 500pcs per Reel )**

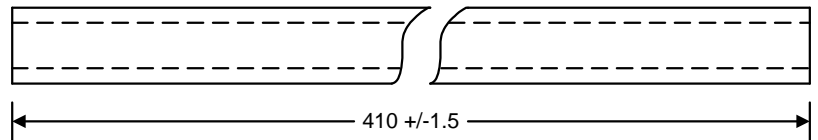
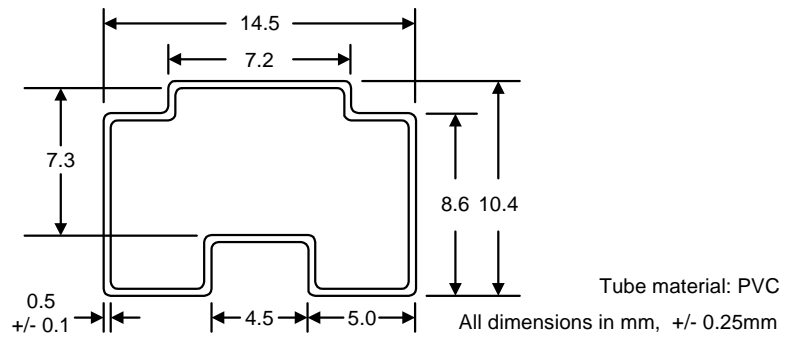


**Tape**



# MSAU200 Series

## Tube ( 25pcs per tube )



## Packaging Details

Packaging Style	Quantity
Tube	25
Tape and Reel to IEC 286-3 Specifications	500