interpoint
PREMIER POWER SOLUTIONS

MK200 SERIES DC/DC CONVERTERS

TECHNICAL PREVIEW

TYPICAL CHARACTERISTICS: Tc = 25°C, full load, V_{in} = 28 VDC unless otherwise specified.

Operating Temperature Range (Case)
- Full Power: -55°C to +125°C
- Absolute: -55°C to +125°C

Storage Temperature Range (Case)
- -65°C to +125°C

Temperature Rise (Still Air)
- 5°C/W dissipated (typ.)

Weight
- 150 grams (typ.)

Isolation
- 100 megohm min. at 500 VDC

Current Sharing Accuracy: 90%

Conversion Frequency
- 1 MHz equivalent (interleaved 500 kHz, 2 phase)

Synchronization: 450 to 550 kHz
- Logic low: 0.8V (max.)
- Logic high: 8 VDC, ±0.2 VDC
  AC coupled, 2200 pF
  20% duty cycle

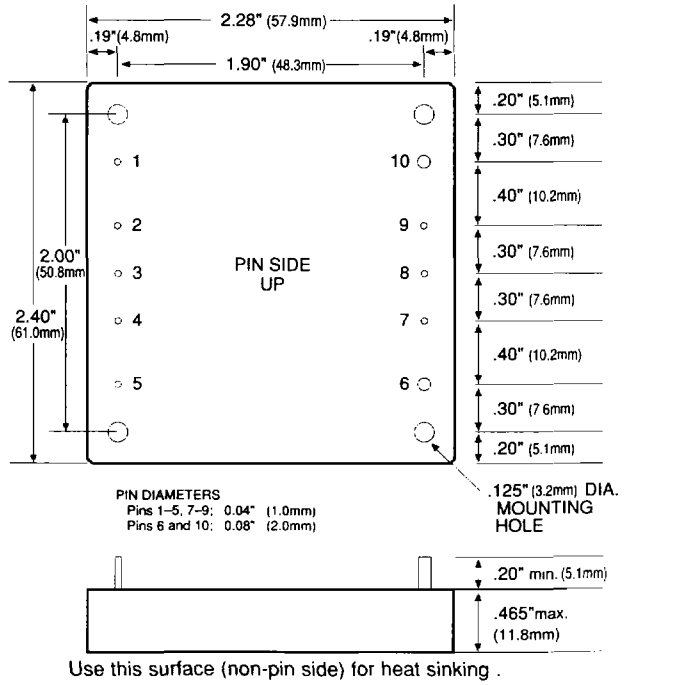
Inhibit Pin: TTL Open collector compatible
- Logic low: 0.8V (max.)

PARAMETER	CONDITION	MK200-2805	MK200-2812	MK200-2815	MK200-281212	MK200-281515	UNITS
OUTPUT VOLTAGE	±1% OF NOMINAL	5	12	15	±12	±15	VDC
OUTPUT CURRENT	19 TO 40 V_{in}	30	14.2	13.3	±7.08	±6.67	A
OUTPUT POWER	19 TO 40 V_{in}[1]	150	170	200	170	200	W
	16 TO 19 V_{in}[1]	120	130	140	130	140	W
OUTPUT RIPPLE	10 kHz to 2 MHz	25	30	35	40	60	mV p-p
LINE REGULATION	19 TO 40 V_{in}	0.2	0.2	0.2	0.2	0.2	%
LOAD REGULATION	10% TO FULL	0.2	0.2	0.2	0.2	0.2	%
INPUT VOLTAGE	FULL POWER	19 TO 40	19 TO 40	19 TO 40	19 TO 40	19 TO 40	VDC
	REDUCED POWER	16 TO 19	16 TO 19	16 TO 19	16 TO 19	16 TO 19	VDC
	TRANSIENT 50 ms max.	50	50	50	50	50	VDC
INPUT CURRENT	NO LOAD	50	40	50	60	60	mA
	FULL LOAD	6.5	7.14	8.4	7.14	8.4	A
	INHIBITED	15	15	15	15	15	mA
INPUT RIPPLE	10 kHz to 2 MHz	65	75	75	75	75	mA p-p
EFFICIENCY	FULL LOAD	82	85	85	85	85	%
LOAD TRANSIENT	50% TO100% LOAD	0.25	0.55	0.60	1.00	1.00	VDC
START-UP	OVERSHOOT	0.40	1.00	1.50	0.10	0.10	VDC
	TIME[2]	35	40	40	5	5	ms
TRIM RANGE[3]		3 TO 5.5	7.2 TO 13.2	9 TO 16.5	10 TO 13.2	10 TO 16.5	VDC

Notes: 1. -55°C to +125°C.
2. Time to settle to within 1% of V_{out}
3. See trim notes and diagrams on reverse.

Pin	Single Output	Dual Output
1	Input common	Input common
2	Sync out	Sync out
3	Share	No connection
4	Inh/Sync in	Inh/Sync in
5	Positive input	Positive input
6	Positive output	Positive V_{out} 1
7	Positive sense	Negative V_{out} 1
8	Trim	V_{out} 2 trim
9	Negative sense	Positive V_{out} 2
10	Negative output	Negative V_{out} 2

METAL AND EPOXY PACKAGE



Use this surface (non-pin side) for heat sinking .

MK200 CASE DRAWING

NOMINAL CASE DIMENSIONS IN INCHES (MM)
Tolerance ±0.005 (±0.13) for three decimal places, ±0.01 (±0.3) for two decimal places.

CAUTION: Heat from reflow or wave soldering may damage this part. Solder pins individually with heat application NOT exceeding 300°C for 10 seconds per pin. Due to the high conductivity of the pins, a high power soldering iron is recommended to meet time and temperature requirements.

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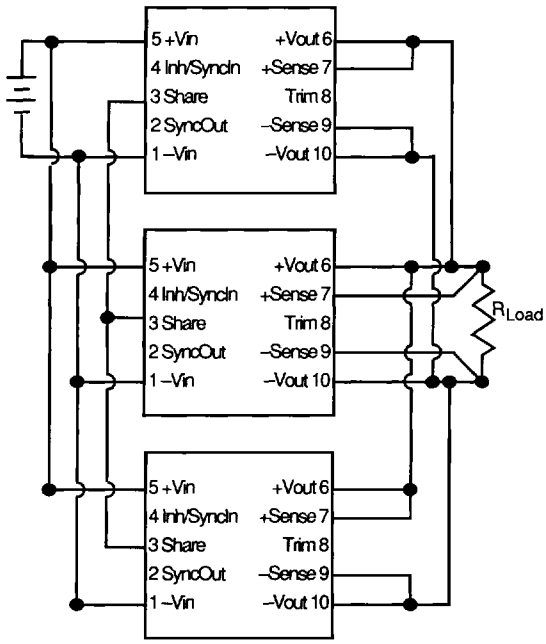
OPTIONAL ENVIRONMENTAL SCREENING (ST)

- Pre-cover visual inspection per MIL-STD-883, Method 2010 IPC-610A, Class III
- Temperature cycle per method 107, condition B (modified) -55°C to +125°C, 10 times.
- Mechanical shock per MIL-STD 202, M. 213, condition D (500G).
- Burn-in at +125°C for 96 hours
- Final electrical test per Interpoint acceptance test procedure at -55°C, +25°C, and +125°C.
- Gross leak, Condition A (dip test)

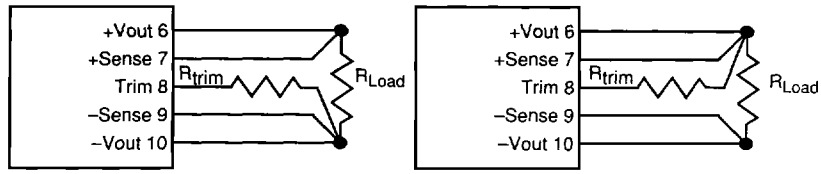
To order optional screening, add suffix -/ST to model number. Example: MK200-2805S/ST.
On unscreened parts, the screening code block is blank. On screened parts, the block is marked "ST."

PARALLEL, TRIM, AND SENSE CONNECTIONS

SINGLE OUTPUT PARALLEL CONNECTIONS



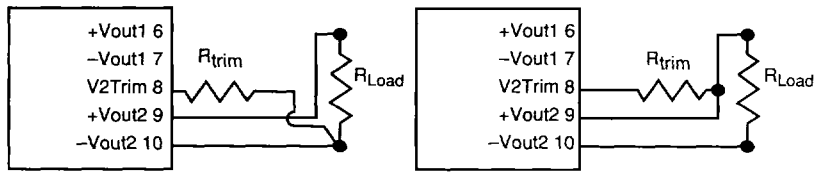
SINGLE OUTPUT TRIM CONNECTIONS



Trim to Increase Voltage

Trim to Decrease Voltage

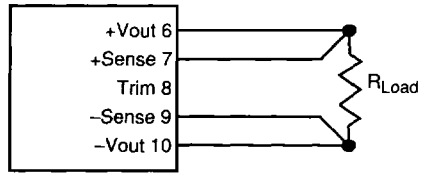
DUAL OUTPUT TRIM CONNECTIONS



Trim to Increase Voltage

Trim to Decrease Voltage

SINGLE OUTPUT SENSE CONNECTIONS



Notes:

Paralleling:
Sense connections should be made as close as possible to the load for optimum load regulation.

Trim and sense:
All connections should be made as close to the load as possible for optimum load regulation.

Trim:
When increasing the output voltage, do not exceed the maximum output power rating.
When decreasing the output voltage, do not exceed the maximum output current rating.
On dual output models, only $V_{out}2$ can be trimmed.

Sense:
When sense is not used, the sense terminals must be connected to their respective output terminals (pin 7 to pin 6 and pin 9 to pin 10).

Inhibit and Synchronization:
Inhibit/sync in (pin4) and sync out (pin 2) are referenced to input common (pin 1). Referencing either of these pins to any other point could result in damage to the converter.