

RC4195

Fixed $\pm 15V$

Dual Tracking

Voltage

Regulator

Features

- $\pm 15V$ operational amplifier power at reduced cost and component density
- Thermal shutdown at $T_j = +175^\circ C$ in addition to short circuit protection
- Output currents to 100 mA
- May be used as single output regulator with up to +50V output
- Available in TO-66, TO-99 and 8-Pin Plastic Mini-DIP
- No external frequency compensation required

Description

The RC/RM4195 is a dual polarity tracking regulator designed to provide balanced positive and negative 15V output voltages at currents up to 100 mA. this device is designed for local "on-card" regulation, eliminating distribution problems

associated with single point regulation. The regulator is intended for ease of application. Only two external components are required for operation (two 10 μF bypass capacitors).

The device is available in three package types to accommodate various applications requiring economy, high power, dissipation, and reduced component density.

Ordering Information

Part Number	Package	Operating Temperature Range
RC4195N	N	0°C to +70°C
RC4195T	T	0°C to +70°C
RC4195K	K	0°C to +70°C
RM4195T	T	-55°C to +125°C
RM4195T/883B	T	-55°C to +125°C
RM4195TK	K	-55°C to +125°C
RM4195D	D	-55°C to +125°C
RM4195D/883B	D	-55°C to +125°C

Notes:

/883B suffix denotes Mil-Std-883, Level B processing

N = 8-lead plastic DIP

D = 8 lead ceramic DIP

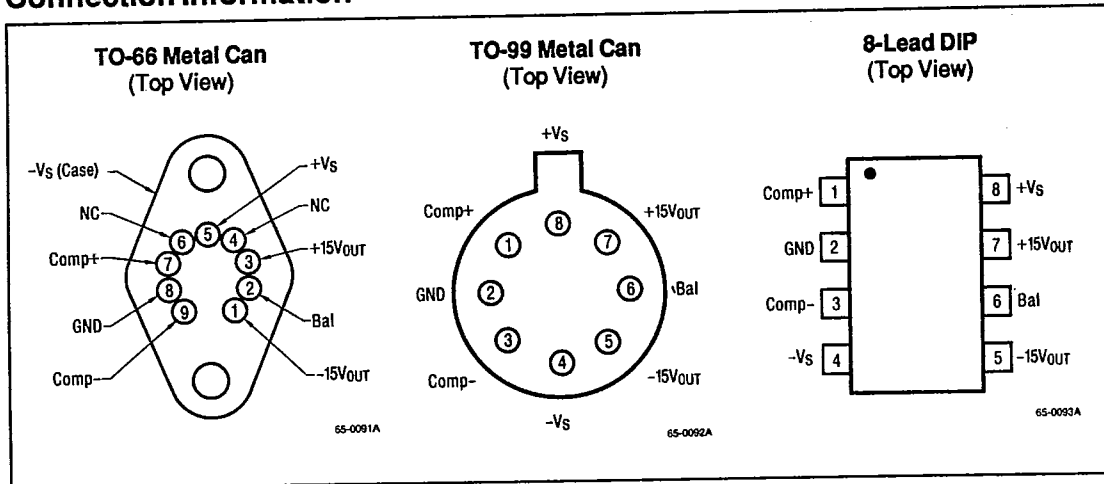
T = 8-lead metal can TO-99

K = 9-lead power TO-66

Contact a Raytheon sales office or representative for ordering information on special package/temperature range combinations.

RAYTHEON/ SEMICONDUCTOR T-58-11-03

Connection Information



Absolute Maximum Ratings

Supply Voltage ($\pm V_S$) to Ground $\pm 30V$
 Load Current

TK Package 150 mA

T and N Package 100 mA

Storage Temperature

Range $-65^{\circ}C$ to $+150^{\circ}C$

Operating Junction Temperature Range

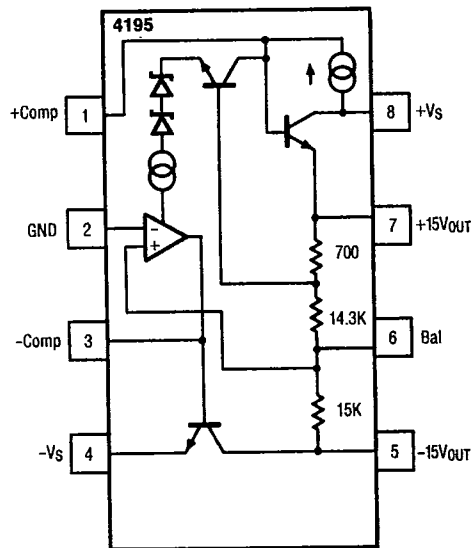
RM4195 $-55^{\circ}C$ to $+150^{\circ}C$

RC4195 $0^{\circ}C$ to $+125^{\circ}C$

Lead Soldering Temperature

(DIP, LCC, TO-99; 60 sec) $+300^{\circ}C$

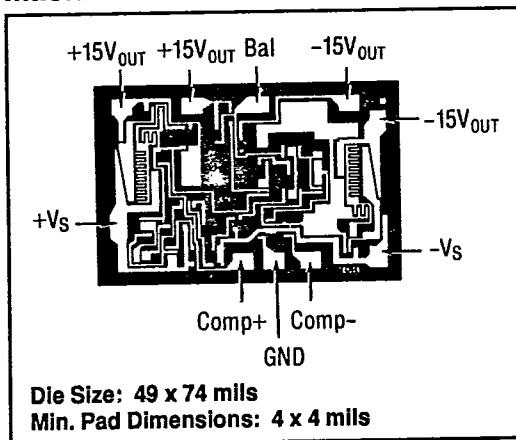
Functional Block Diagram



Pin out for dual in-line package shown.

65-00089A

Mask Pattern



Thermal Characteristics

	8-Lead Plastic DIP	8-Lead TO-99 Metal Can	9-Lead TO-66 Metal Can	8-Lead Ceramic DIP
Max. Junction Temp.	125°C	175°C	150°C	175°C
Max. P_D $T_A < 50^\circ\text{C}$	468mW	658mW	2381mW	833mW
Therm. Res. θ_{JC}	—	50°C/W	7°C/W	45°C/W
Therm. Res. θ_{JA}	160°C/W	190°C/W	42°C/W	150°C/W
For $T_A > 50^\circ\text{C}$ Derate at	6.25 mW/°C	5.26 mW/°C	23.81 mW/°C	8.33 mW/°C

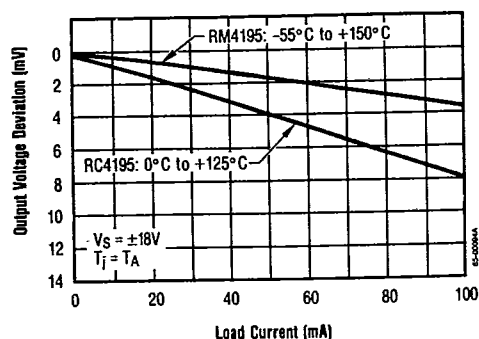
Electrical Characteristics ($I_L = \pm 1\text{mA}$, $V_S = \pm 20\text{V}$, $C_L = 10\mu\text{F}$ RM4195: $-55^\circ\text{C} \leq T_J \leq +125^\circ\text{C}$; RC4195: $0^\circ\text{C} \leq T_J \leq +70^\circ\text{C}$ unless otherwise specified)¹

Parameters	Test Conditions	RC/RM4195			Units
		Min	Typ	Max	
Line Regulation	$V_S = \pm 18\text{V to } \pm 30\text{V}$		2	20	mV
Load Regulation	$I_L = 1\text{mA to } 100\text{mA}$		5	30	mV
Output Voltage Drift With Temperature			0.005	0.015	%/°C
Supply Current	$V_S = \pm 30\text{V}$, $I_L = 0\text{mA}$		± 1.5	± 4.0	mA
Supply Voltage		18		30	V
Output Voltage	$T_J = +25^\circ\text{C}$	14.5	15.0	15.5	V
Output Voltage Tracking			± 50	± 300	mV
Ripple Rejection	$f = 120\text{Hz}$, $T_J = +25^\circ\text{C}$		75		dB
Input-Output Voltage Differential	$I_L = 50\text{mA}$	3			V
Short Circuit Current	$T_J = +25^\circ\text{C}$		220		mA
Output Voltage Noise	$T_J = +25^\circ\text{C}$, $f = 100\text{Hz to } 10\text{kHz}$		60		μV_{RMS}
Internal Thermal Shutdown			175		°C

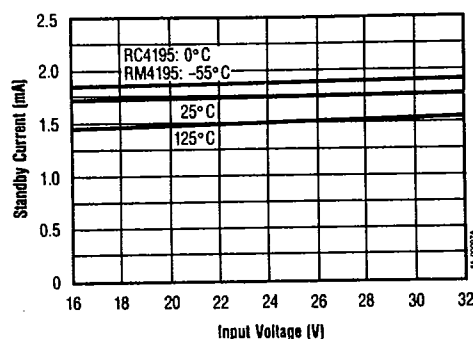
Notes: 1. The specifications above apply for the given junction temperature since pulse test conditions are used.

Typical Performance Characteristics

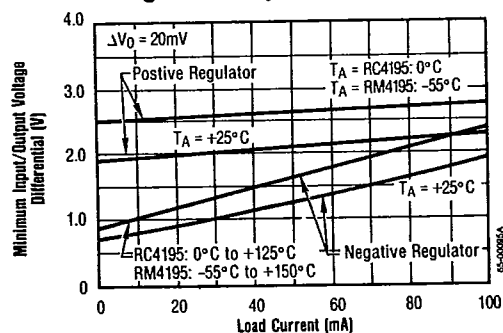
Output Load Regulation



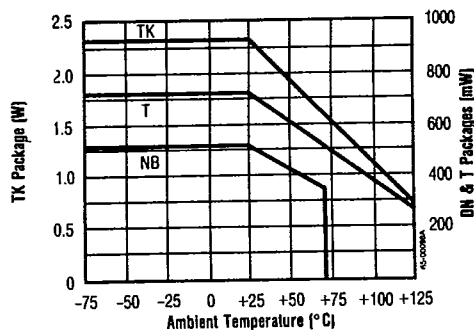
Standby Current Drain



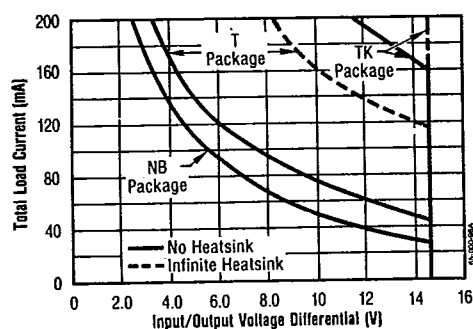
Regulator Dropout Voltage



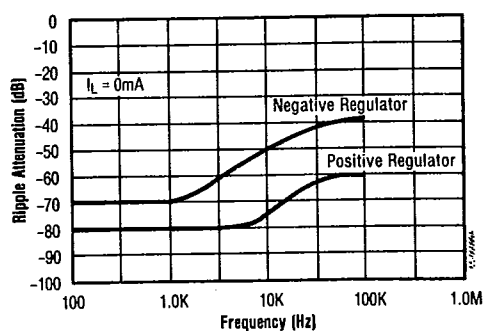
Power Dissipation



Maximum Current Capability



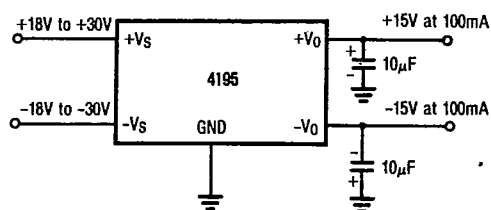
Ripple Rejection



T-58-11-03

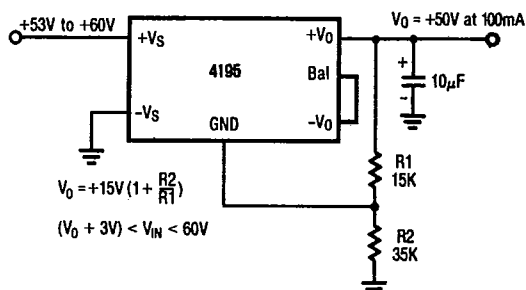
Typical Applications

Balanced Output ($V_O = \pm 15V$)



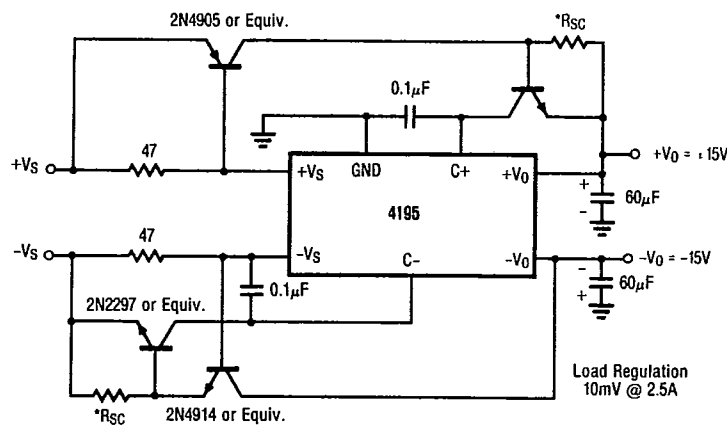
65-01004

Positive Single Supply ($+15V < V_O < +50V$)



65-01014

High Output Current

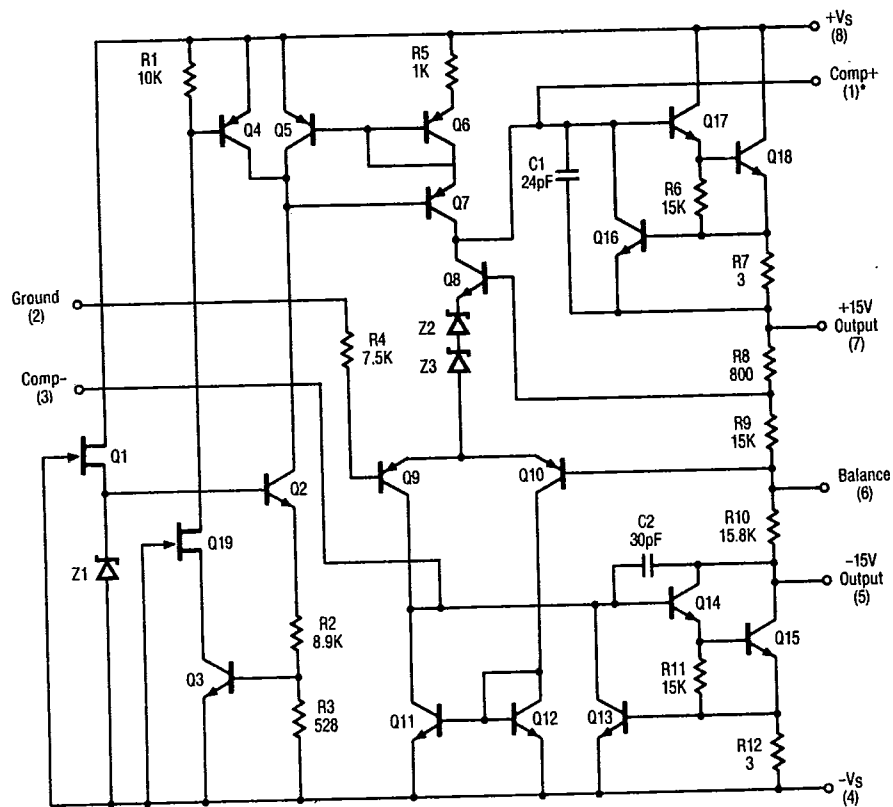


Load Regulation
10mV @ 2.5A

$$*R_{SC} = \frac{0.7}{I_{SC}}$$

65-01024

Schematic Diagram



*Pin numbers are for 8-pin packages

65-00908