

# MCC1569 MCC1469

## POSITIVE VOLTAGE REGULATORS

### Advance Information

#### MONOLITHIC VOLTAGE REGULATOR CHIP

The MCC1569 and MCC1469 are positive voltage regulators designed to deliver continuous load current up to 500 mA dc. Output voltage is adjustable from 2.5 V dc to 37 V dc. Systems requiring both a positive and negative regulated voltage can use the MCC1569 and MCC1563 as complementary regulators with a common input ground.

The MCC1569 and MCC1469 employ phosphorsilicate passivation that protects the entire die surface area, including metalization interconnects. All dice have a minimum gold-backed thickness of 4000 Angstroms. The interconnecting metalization and bonding pads are of evaporated aluminum.

- Electronic "Shut-Down" Control
- Excellent Load Regulation (Low Output Impedance – 20 milliohms typ)
- High Power Capability: Up to 17.5 Watts
- Excellent Temperature Stability:  $\pm 0.002\%/^{\circ}\text{C}$  typ
- High Ripple Rejection: 0.002%/V typ

#### POSITIVE VOLTAGE REGULATOR CHIP INTEGRATED CIRCUIT

MONOLITHIC SILICON  
EPITAXIAL PASSIVATED

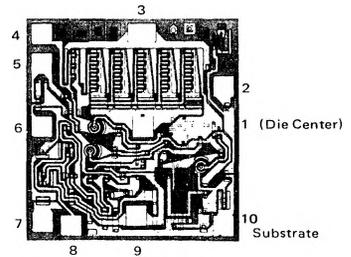
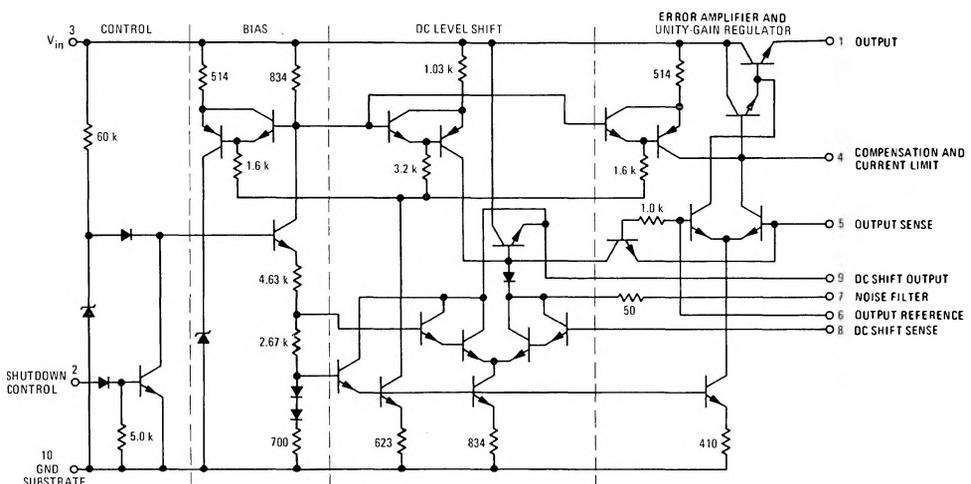


FIGURE 1 – CIRCUIT SCHEMATIC



# MCC1569, MCC1469 (continued)

## MAXIMUM RATINGS ( $T_A = +25^\circ\text{C}$ unless otherwise noted)

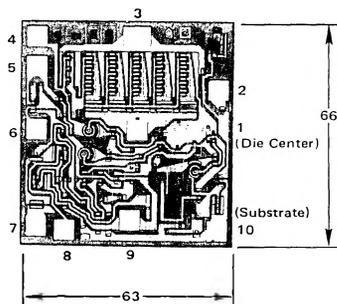
Rating	Symbol	MCC1569	MCC1469	Unit
Input Voltage	$V_{in}$	40	35	Vdc
Peak Load Current	$I_{pk}$	600		mA
Current, Pin 2	$I_{pin\ 2}$	10		mA
Current, Pin 9	$I_{pin\ 9}$	5.0		mA
Operating Temperature Range	$T_A$	-55 to +125		$^\circ\text{C}$
Junction Temperature Range	$T_J$	-65 to +150		$^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS ( $T_A = +25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	MCC1569			MCC1469			Unit
		Min	Typ	Max	Min	Typ	Max	
Input Voltage	$V_{in}$	-	-	40	-	-	35	Vdc
Output Voltage Range	$V_O$	2.5	-	37	2.5	-	32	Vdc
Reference Voltage (Pin 8 to Ground)	$V_{ref}$	3.4	3.5	3.6	3.2	3.5	3.8	Vdc
Minimum Input-Output Voltage Differential	$V_{in} - V_O$	-	2.1	2.7	-	2.1	3.0	Vdc
Bias Current ( $I_L = 1.0\text{ mAdc}$ , $R_2 = 6.8\text{ k ohms}$ , $I_b = I_{in} - I_L$ )	$I_b$	-	4.0	9.0	-	5.0	12	mAdc
Output Noise ( $C_n = 0.1\ \mu\text{F}$ , $f = 10\text{ Hz to } 5.0\text{ MHz}$ )	$v_n$	-	0.150	-	-	0.150	-	mV(rms)
Temperature Coefficient of Output Voltage	$TCV_O$	-	$\pm 0.002$	-	-	$+0.002$	-	$\%/^\circ\text{C}$
Input Regulation	$Reg_{in}$	-	0.002	-	-	0.003	-	$\%/V_{in}$
Output Impedance ( $C_c = 0.001\ \mu\text{F}$ , $R_{SC} = 1.0\text{ ohm}$ , $f = 1.0\text{ kHz}$ , $V_{in} = +14\text{ Vdc}$ , $V_O = +10\text{ Vdc}$ )	$Z_{out}$	-	20	-	-	35	-	milliohms
Shutdown Current ( $V_{in} = +35\text{ Vdc}$ )	$I_{sd}$	-	70	150	-	140	500	$\mu\text{Adc}$

See current MC1569/1469 data sheet for additional information.

## MCC1569/MCC1469 BONDING DIAGRAM



All dimensions are nominal and in mils ( $10^{-3}$  inches).

Die Dimensions

Thickness = 8.0

Bonding Pads =  $4.0 \times 4.0$

## PACKAGING AND HANDLING

The MCC1569/MCC1469 voltage regulator is now available as a single monolithic die or encapsulated in the Case 602A and Case 614 hermetic packages. The phosphorsilicate passivation protects the metalization and active area of the die but care must be exercised when removing the dice from the shipping carrier to avoid scratching the bonding pads. A vacuum pickup is useful for the handling of dice. Tweezers are not recommended for this purpose.

The non-spill type shipping carrier consists of a compartmentalized tray and fitted cover. Die are placed in the carrier with geometry side up.