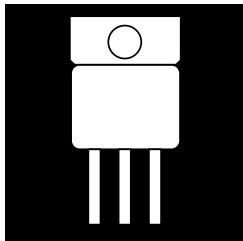


OM7662SC OM7664SC  
OM7663SC

## ISOLATED HERMETIC TO-258AA FIXED POSITIVE VOLTAGE REGULATORS



**Three Terminal, Fixed Positive Voltage, 3.0 Amp  
Precision Positive Regulator In Hermetic  
JEDEC TO-258AA Package**

### FEATURES

- Isolated Hermetic Package. JEDEC TO-258AA Outline
- Output Voltages: 5V, 12V And 15V (Other Voltages Available)
- Output Voltages Set Internally To  $\pm 2\%$  ( $\pm 1\%$  Available)
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Product Is Available Hi-Rel Screened

### DESCRIPTION

These three terminal positive regulators are supplied in a hermetically sealed metal package whose outline is similar to the industry standard TO-247 plastic package. All protective features are designed into the circuit, including thermal shutdown, current limiting and safe-area control. With heat sinking, they can deliver over 3.0 amps of output current. These units feature  $\pm 2\%$  initial voltage tolerance, with 0.3% load regulation and .01% line regulation.

### ABSOLUTE MAXIMUM RATINGS @ 25°C

Input to Output Voltage Differential .....	+35V
Operating Junction Temperature Range .....	- 55°C to + 150°C
Storage Temperature Range .....	- 55°C to + 150°C

#### Typical Power/Thermal Characteristics:

Rated Power @ 25°C

T <sub>C</sub> .....	25W
T <sub>A</sub> .....	3W

Thermal Resistance:

q <sub>JC</sub> .....	3.5°C/W
q <sub>JA</sub> .....	42°C/W

3.3

**Note:** For  $\pm 1\%$  device, add letter "A" in front of part number (e.g. OMA 7662SC).

## OM7662SC - OM7664SC

### ELECTRICAL CHARACTERISTICS: 5 VOLT OUTPUT (OM7662SC)

Parameter	Test Conditions	Min.	Typ.	Max.	Units
$V_{OUT}$	$T_J = 25^\circ C, V_{IN} = 12 V, I_O = 10 mA$	4.90	5.00	5.10	V
	8.0 V $V_{IN}$ 35 V, 10 mA $I_O$ 3 A; P 25 W	4.80	5.00	5.20	
Line Regulation (Note 1)	8.0 V $V_{IN}$ 35 V	-	.03	.06	%/V
Load Regulation	10 mA $I_O$ 3.0 A	-	20	55	mV
Thermal Regulation	$T_A = 25^\circ C$ , 20 mS Pulse	-	.005	.013	%/W
Ripple Rejection	$f = 120 Hz; V_{OUT} = 5 V$	-	65	-	dB
Mimuminum Load		-	-	10	mA
Current Limit	$V_{IN} = 13 V, T_J = 25^\circ C$	3	4.5	-	A
Temperature Stability		-	1.0	2.0	%
RMS Output Noise	$T_A = 25^\circ C, 10 Hz \ f \ 10 kHz$	-	.001	-	%

Note 1: Regulation is measured at a constant  $T_J$ . Changes in output due to heating must be taken into account separately.  
Pulse testing with low duty cycle is used.

### ELECTRICAL CHARACTERISTICS: 12 VOLT OUTPUT (OM7663SC)

Parameter	Test Conditions	Min.	Typ.	Max.	Units
$V_{OUT}$	$T_J = 25^\circ C, V_{IN} = 18 V, I_O = 10 mA$	11.76	12.00	12.24	V
	15 V $V_{IN}$ 35 V, 10 mA $I_O$ 3 A; P 25 W	11.53	12.00	12.48	
Line Regulation (Note 1)	15 V $V_{IN}$ 35 V	-	.03	.06	%/V
Load Regulation	10 mA $I_O$ 3.0 A	-	60	132	mV
Thermal Regulation	$T_A = 25^\circ C$ , 20 mS Pulse	-	.005	.013	%/W
Ripple Rejection	$f = 120 Hz; V_{OUT} = 12 V$	-	65	-	dB
Mimuminum Load		-	-	10	mA
Current Limit	$V_{IN} = 20 V, T_J = 25^\circ C$	3	4.5	-	A
Temperature Stability		-	1.0	2.0	%
RMS Output Noise	$T_A = 25^\circ C, 10 Hz \ f \ 10 kHz$	-	.001	-	%

Note 1: Regulation is measured at a constant  $T_J$ . Changes in output due to heating must be taken into account separately.  
Pulse testing with low duty cycle is used.

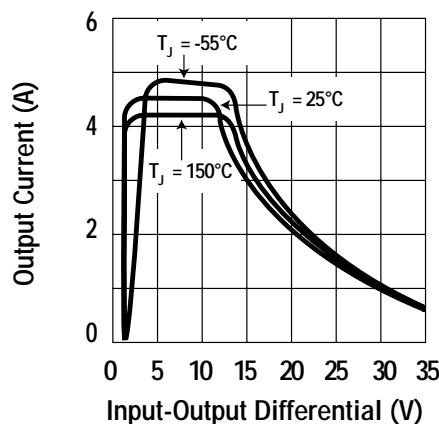
## OM7662SC - OM7664SC

### ELECTRICAL CHARACTERISTICS: 15 VOLT OUTPUT (OM7664SC)

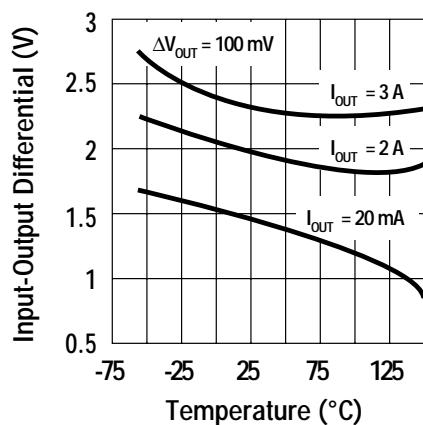
Parameter	Test Conditions	Min.	Typ.	Max.	Units
$V_{OUT}$	$T_J = 25^\circ C, V_{IN} = 23 V, I_O = 10 \text{ mA}$	14.70	15.00	15.3	V
	18 V $V_{IN}$ 35 V, 10 mA $I_O$ 3 A; P 25 W	14.41	15.00	15.60	
Line Regulation (Note 1)	18 V $V_{IN}$ 35 V	-	.03	.06	%/V
Load Regulation	10 mA $I_O$ 3.0 A	-	75	165	mV
Thermal Regulation	$T_A = 25^\circ C, 20 \text{ mS Pulse}$	--	.005	.013	%/W
Ripple Rejection	$f = 120 \text{ Hz}; V_{OUT} = 15 \text{ V}$		65		dB
Mminimum Load		-	-	10	mA
Current Limit	$V_{IN} = 23 \text{ V}, T_J = 25^\circ C$	3	4.5	-	A
Temperature Stability		-	1.0	2.0	%
RMS Output Noise	$T_A = 25^\circ C, 10 \text{ Hz } f 10 \text{ kHz}$	-	.001	-	%

Note 1: Regulation is measured at a constant  $T_J$ . Changes in output due to heating must be taken into account separately.  
Pulse testing with low duty cycle is used.

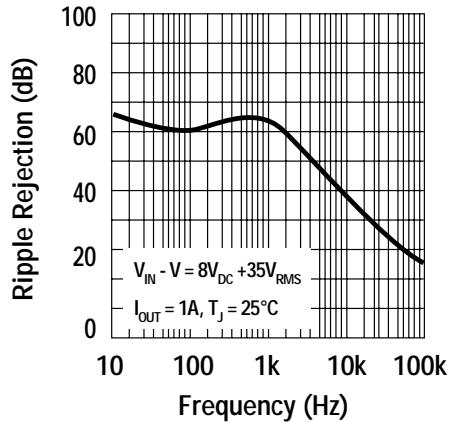
### Current Limit



### Dropout Voltage



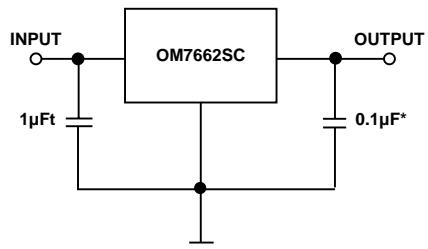
### Ripple Rejection



## OM7662SC - OM7664SC

### TYPICAL APPLICATIONS

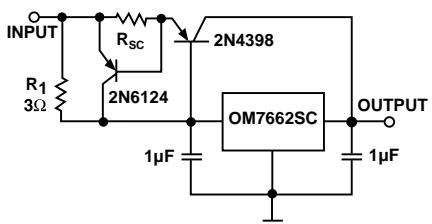
#### Fixed Output Regulator



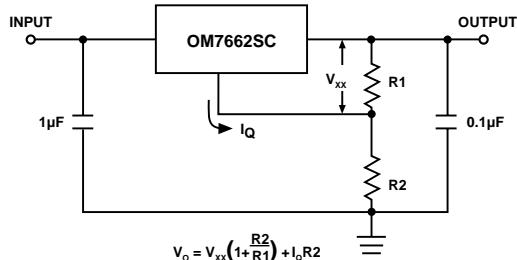
\*Increasing value of output capacitor improves system transient response.

tRequired only if regulator is located an appreciable distance from power supply filter.

#### High Output Current, Short Circuit Protected

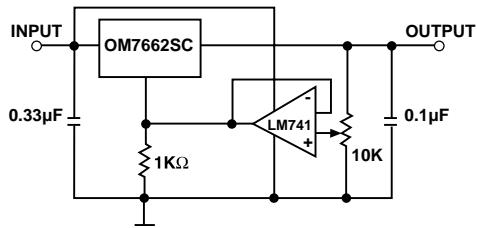


#### Circuit For Increasing Output Voltage

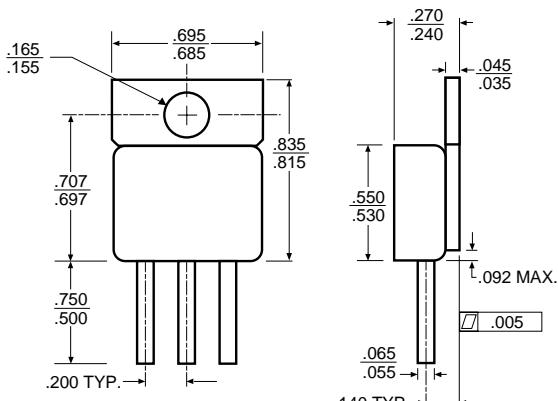


$$V_o = V_{xx} \left( \frac{R_2}{R_1 + R_2} \right) + I_o R_2$$

#### Adjustable Output Regulator, 7 To 30 Volts



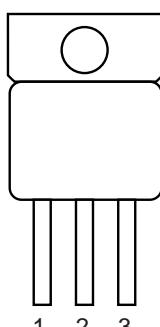
### MECHANICAL OUTLINE



#### NOTES:

- Case is metal/hermetically sealed
- Isolated Tab

### PIN CONNECTION



Front View

- Pin 1: Ground  
Pin 2: Output  
Pin 3: Input

This device is also available in a TO-257AA package. Call the factory for test conditions and limits.