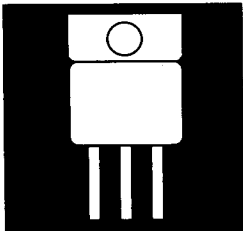


ISOLATED HERMETIC TO-258AA FIXED VOLTAGE REGULATORS



Three Terminal, Fixed 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
- Output Voltages Set Internally To $\pm 2\%$ ($\pm 1\%$ Available)
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Product Is Available Screened To OM803

3

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, 0.3% load regulation and .01% line regulation.

ABSOLUTE MAXIMUM RATINGS

Input Voltage	+35V
Operating Junction Temperature Range	-55°C to +150°C
Storage Temperature Range	-65°C to +150°C
Typical Power/Thermal Characteristics:	
Rated Power @ 25°C	
T_C	25W
T_A	3W
Thermal Resistance:	
θ_{JC}	3.5°C/W
θ_{JA}	42°C/W

Note: For $\pm 1\%$ device, add letter "A" in front of part number
(e. g. OMA 7605SC)

ELECTRICAL CHARACTERISTICS: 5 VOLT OUTPUT (OM7605SC)

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

ELECTRICAL CHARACTERISTICS: 12 VOLT OUTPUT (OM7606SC)

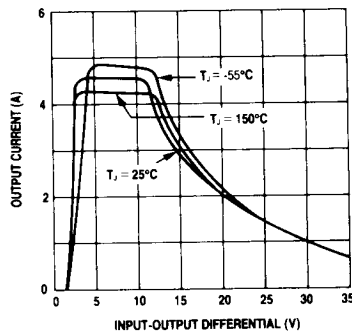
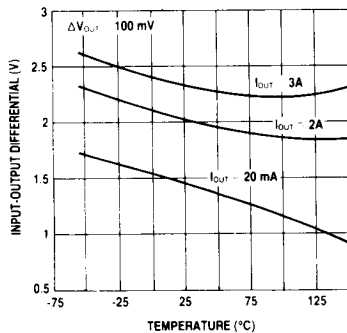
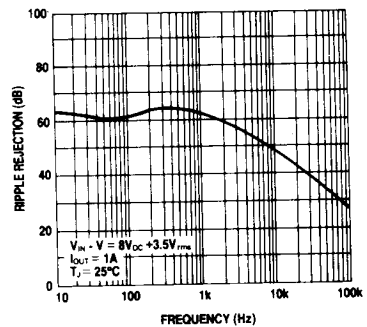
Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{OUT}	$T_J = 25^{\circ}\text{C}$, $V_{IN} = 18\text{ V}$, $I_O = 10\text{ mA}$	11.76	12.00	12.24	V
	$15\text{ V} \leq V_{IN} \leq 35\text{ V}$, $10\text{ mA} \leq I_O \leq 3\text{ A}$; $P \leq 25\text{ W}$	11.53	12.00	12.48	
Line Regulation (Note 1)	$15\text{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

ELECTRICAL CHARACTERISTICS: 15 VOLT OUTPUT (OM7607SC)

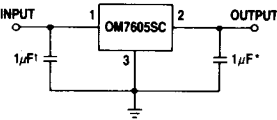
Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{OUT}	$T_J = 25^\circ\text{C}$, $V_{IN} = 23\text{ V}$, $I_O = 10\text{ mA}$	14.70	15.00	15.3	V
	$18\text{ V} \leq V_{IN} \leq 35\text{ V}$, $10\text{ mA} \leq I_O \leq 3\text{ A}$; $P \leq 25\text{ W}$	14.41	15.00	15.60	
Line Regulation (Note 1)	$18\text{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

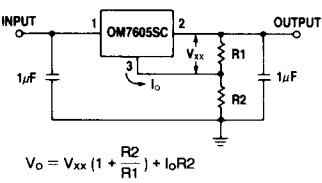
TYPICAL APPLICATIONS

FIXED OUTPUT REGULATOR

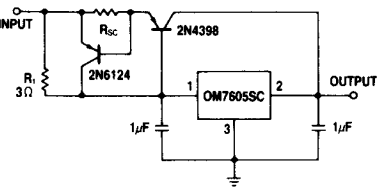


*Increasing value of output capacitor improves system transient response
†Required only if regulator is located an appreciable distance from power supply filter

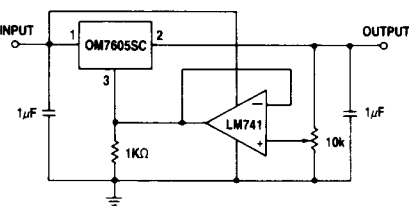
CIRCUIT FOR INCREASING OUTPUT VOLTAGE



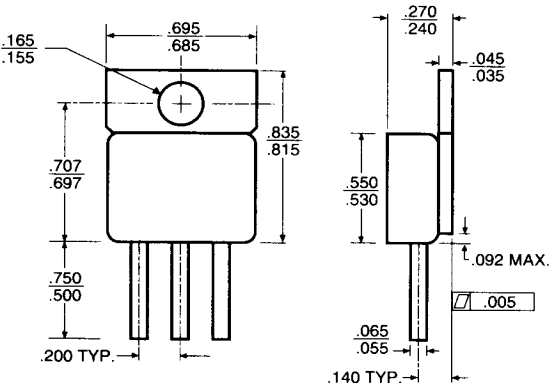
HIGH OUTPUT CURRENT, SHORT CIRCUIT PROTECTED



ADJUSTABLE OUTPUT REGULATOR, 7 TO 30 VOLTS



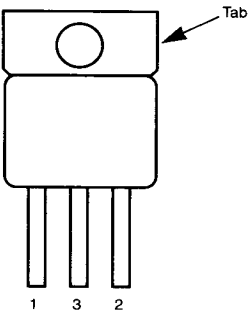
MECHANICAL OUTLINE



NOTES:

- Case is metal/hermetically sealed
- Isolated Tab

PIN CONNECTION



Front View
Pin 1: Input
Pin 2: Output
Pin 3: Ground
Tab: Isolated