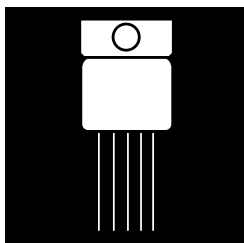


OM3901SC OM3903SC OM3905SC OM3907SC OM3909SC
 OM3902SC OM3904SC OM3906SC OM3908SC

DUAL POSITIVE AND NEGATIVE FIXED VOLTAGE REGULATORS APPROVED TO DESC DRAWING



Dual 5V, 12V and 15V, 1.5 Amp Fixed Voltage Regulators In Single Hermetic MO-078AA Package

FEATURES

- Positive And Negative Regulators In One Package
- Isolated Hermetic Package, JEDEC MO-078AA
- Output Voltages 5V, 12V and 15V
- Output Voltages Set Internally To $\pm 1.0\%$
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Similar to Industry Standards 7800 & 7900 Series

DESCRIPTION

This series of products offers a positive and a negative fixed voltage regulator in one hermetically sealed, 5 pin package whose outline is similar to the industry standard TO-247 package. With heat sinking, they can regulate over 1.5 Amp of output current per device. Standard voltages are + or - 5V, 12V and 15V. Output voltages are internally trimmed to $\pm 1.0\%$ of nominal voltage. These devices are ideally suited for Military applications where small size and high reliability are required.

To order, use the following Omnirel part numbers to determine the required output voltage of each regulator within one package.

PART NUMBER DESIGNATOR

Standard Military Drawing Number	Omnirel Part Number	Output Voltages	
		Positive	Negative
5962-8949002 XX	OM3901SC	+5V	-5V
5962-8949003 XX	OM3902SC	+5V	-12V
5962-8949004 XX	OM3903SC	+5V	-15V
5962-8949005 XX	OM3904SC	+12V	-5V
5962-8949006 XX	OM3905SC	+12V	-12V
5962-8949007 XX	OM3906SC	+12V	-15V
5962-8949008 XX	OM3907SC	+15V	-5V
5962-8949009 XX	OM3908SC	+15V	-12V
5962-8949001 XX	OM3909SC	+15V	-15V

3.3

INDIVIDUAL POSITIVE REGULATORS

ELECTRICAL CHARACTERISTICS +5 Volt $V_{IN} = 10V, I_o = 500mA, -55^{\circ}C$ $T_A = 125^{\circ}C$ (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Output Voltage	V_{OUT}	$T_A = 25^{\circ}C$	4.92	5.08	V
		$V_{IN} = 7.5V$ to 20V	• 4.85	5.15	V
Line Regulation (Note 1)	V_{RLINE}	$V_{IN} = 7.5V$ to 20V	•	5	mV
		$V_{IN} = 8.0V$ to 12V	•	12	mV
Load Regulation (Note 1)	V_{RLOAD}	$I_o = 5mA$ to 1.5 Amp	•	4	mV
		$I_o = 250mA$ to 750 mA	•	10	mV
Standby Current Drain	I_{SCD}		•	12	mV
			•	25	mV
Standby Current Drain Change With Line	$D I_{SCD}$ (Line)	$V_{IN} = 7.5V$ to 20V	•	6	mV
			•	15	mV
Standby Current Drain Change With Load	$D I_{SCD}$ (Load)	$I_o = 5mA$ to 1000mA	•	0.8	mA
			•	0.5	mA
Dropout Voltage	V_{DO}	$T_A = 25^{\circ}C, D V_{OUT} = 100mV, I_o = 1.0A$		2.5	V
Peak Output Current	$I_{O(pk)}$	$T_A = 25^{\circ}C$	1.5	3.3	A
Short Circuit Current (Note 2)	I_{DS}	$V_{IN} = 35V$	•	1.2	A
			•	2.8	A
Ripple Rejection	$\frac{D V_{IN}}{D V_{OUT}}$	$f = 120$ Hz, $D V_{IN} = 10V$	•	66	dB
		(Note 3)	•	60	dB
Output Noise Voltage (Note 3)	N_O	$T_A = 25^{\circ}C, f = 10$ Hz to 100KHz		40	$\mu V/V$ RMS
				75	mV
Long Term Stability (Note 3)	$\frac{D V_{OUT}}{Dt}$	$T_A = 25^{\circ}C, t = 1000$ hrs.			

ELECTRICAL CHARACTERISTICS +12 Volt $V_{IN} = 19V, I_o = 500mA, -55^{\circ}C$ $T_A = 125^{\circ}C$ (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Output Voltage	V_{OUT}	$T_A = 25^{\circ}C$	11.88	12.12	V
		$V_{IN} = 14.5V$ to 27V	• 11.64	12.36	V
Line Regulation (Note 1)	V_{RLINE}	$V_{IN} = 14.5V$ to 27V	•	18	mV
		$V_{IN} = 16V$ to 22V	•	50	mV
Load Regulation (Note 1)	V_{RLOAD}	$I_o = 5mA$ to 1.5 Amp	•	9	mV
		$I_o = 250mA$ to 750 mA	•	30	mV
Standby Current Drain	I_{SCD}		•	32	mV
			•	60	mV
Standby Current Drain Change With Line	$D I_{SCD}$ (Line)	$V_{IN} = 15V$ to 30V	•	20	mV
			•	40	mV
Standby Current Drain Change With Load	$D I_{SCD}$ (Load)	$I_o = 5mA$ to 1000mA	•	0.8	mA
			•	0.5	mA
Dropout Voltage	V_{DO}	$D V_{OUT} = 100mV, I_o = 1.0A$	•	2.5	V
Peak Output Current	$I_{O(pk)}$	$T_A = 25^{\circ}C$	1.5	3.3	A
Short Circuit Current (Note 2)	I_{DS}	$V_{IN} = 35V$	•	1.2	A
			•	2.8	A
Ripple Rejection	$\frac{D V_{IN}}{D V_{OUT}}$	$f = 120$ Hz, $D V_{IN} = 10V$	•	61	dB
		(Note 3)	•	54	dB
Output Noise Voltage (Note 3)	N_O	$T_A = 25^{\circ}C, f = 10$ Hz to 100KHz		40	$\mu V/V$ RMS
				120	mV
Long Term Stability (Note 3)	$\frac{D V_{OUT}}{Dt}$	$T_A = 25^{\circ}C, t = 1000$ hrs.			

Notes:

- Load and Line Regulation are specified at a constant junction temperature. Pulse testing with low duty cycle is used. Changes in output voltage due to heating effects must be taken into account separately.
- Short Circuit protection is only assured up to $V_{IN} = 35V$.
- If not tested, shall be guaranteed to the specified limits.
The • denotes the specifications which apply over the full operating temperature range.

3.3

ELECTRICAL CHARACTERISTICS +15 Volt $V_{IN} = 23V, I_O = 500mA, -55^{\circ}C \leq T_A \leq 125^{\circ}C$ (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Output Voltage	V_{OUT}	$T_A = 25^{\circ}C$	14.8	15.2	V
		$V_{IN} = 18.5V$ to $30V$	• 14.6	15.4	V
Line Regulation (Note 1)	V_{RLINE}	$V_{IN} = 17.5V$ to $30V$	•	20	mV
		$V_{IN} = 20V$ to $26V$	•	50	mV
			•	15	mV
Load Regulation (Note 1)	V_{RLOAD}	$I_O = 5mA$ to 1.5 Amp	•	35	mV
		$I_O = 5mA$ to 1.0 Amp	•	75	mV
		$I_O = 250mA$ to 750 mA	•	21	mV
Standby Current Drain	I_{SCD}		•	6.0	mA
			•	6.5	mA
Standby Current Drain Change With Line	$D I_{SCD}$ (Line)	$V_{IN} = 18.5V$ to $30V$	•	0.8	mA
Standby Current Drain Change With Load	$D I_{SCD}$ (Load)	$I_O = 5mA$ to $1000mA$	•	0.5	mA
Dropout Voltage	V_{DO}	$T_A = 25^{\circ}C, DV_{OUT} = 100mV, I_O = 1.0A$	•	2.5	V
Peak Output Current	$I_{O(pk)}$	$T_A = 25^{\circ}C$	1.5	3.3	A
Short Circuit Current (Note 2)	I_{DS}	$V_{IN} = 35V$	•	1.2	A
			•	2.8	A
Ripple Rejection	$\frac{DV_{IN}}{DV_{OUT}}$	$f = 120$ Hz, $DV_{IN} = 10V$	•	54	dB
		(Note 3)	•	52	dB
Output Noise Voltage (Note 3)	N_O	$T_A = 25^{\circ}C, f = 10$ Hz to $100KHz$		40	$\mu V/V$ RMS
Long Term Stability (Note 3)	$\frac{DV_{OUT}}{Dt}$	$T_A = 25^{\circ}C, t = 1000$ hrs.		150	mV

ELECTRICAL CHARACTERISTICS -5 Volt $V_{IN} = -10V, I_O = 500mA, -55^{\circ}C \leq T_A \leq 125^{\circ}C$ (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Output Voltage	V_{OUT}	$T_A = 25^{\circ}C$	-4.95	-5.05	V
		$V_{IN} = -7.5V$ to $-20V$	• -4.85	-5.15	V
Line Regulation (Note 1)	V_{RLINE}	$V_{IN} = -7.5V$ to $-20V$	•	12	mV
		$V_{IN} = -8.0V$ to $-12V$	•	25	mV
			•	5	mV
Load Regulation (Note 1)	V_{RLOAD}	$I_O = 5mA$ to 1.5 Amp	•	20	mV
		$I_O = 250mA$ to 750 mA	•	25	mV
			•	15	mV
Standby Current Drain	I_{SCD}		•	2.5	mA
			•	3.0	mA
Standby Current Drain Change With Line	$D I_{SCD}$ (Line)	$V_{IN} = -7.0V$ to $-20V$	•	0.4	mA
Standby Current Drain Change With Load	$D I_{SCD}$ (Load)	$I_O = 5mA$ to $1000mA$	•	0.4	mA
Dropout Voltage	V_{DO}	$DV_{OUT} = 100mV, I_O = 1.0A$	•	2.5	V
Peak Output Current	$I_{O(pk)}$	$T_A = 25^{\circ}C$	1.5	3.3	A
Short Circuit Current (Note 2)	I_{DS}	$V_{IN} = -35V$	•	1.2	A
			•	2.8	A
Ripple Rejection	$\frac{DV_{IN}}{DV_{OUT}}$	$f = 120$ Hz, $DV_{IN} = -10V$	•	63	dB
		(Note 3)	•	60	dB
Output Noise Voltage (Note 3)	N_O	$T_A = 25^{\circ}C, f = 10$ Hz to $100KHz$		40	$\mu V/V$ RMS
Long Term Stability (Note 3)	$\frac{DV_{OUT}}{Dt}$	$T_A = 25^{\circ}C, t = 1000$ hrs.		75	mV

Notes:

- Load and Line Regulation are specified at a constant junction temperature. Pulse testing with low duty cycle is used. Changes in output voltage due to heating effects must be taken into account separately.
- Short Circuit protection is only assured up to $V_{IN} = +35V$, positive regulator; $V_{IN} = -35V$, negative regulator.
- If not tested, shall be guaranteed to the specified limits.
The • denotes the specifications which apply over the full operating temperature range.

3.3

ELECTRICAL CHARACTERISTICS -12 Volt $V_{IN} = -19V, I_o = 500mA, -55^{\circ}C \ T_A \ 125^{\circ}C$ (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Output Voltage	V_{OUT}	$T_A = 25^{\circ}C$	-11.88	-12.12	V
		$V_{IN} = -14.5V \text{ to } -27V$	• -11.64	-12.36	V
Line Regulation (Note 1)	V_{RLINE}	$V_{IN} = -14.5V \text{ to } -27V$	•	20	mV
		$V_{IN} = -16V \text{ to } -22V$	•	50	mV
Load Regulation (Note 1)	V_{RLOAD}	$I_o = 5mA \text{ to } 1.5 \text{ Amp}$	•	10	mV
		$I_o = 250mA \text{ to } 750 \text{ mA}$	•	30	mV
Standby Current Drain	I_{SCD}		•	3.5	mA
			•	4.0	mA
Standby Current Drain Change With Line	$D I_{SCD}$ (Line)	$V_{IN} = -14.5V \text{ to } -27V$	•	0.8	mA
Standby Current Drain Change With Load	$D I_{SCD}$ (Load)	$I_o = 5mA \text{ to } 1000mA$	•	0.5	mA
Dropout Voltage	V_{DO}	$DV_{OUT} = 100mV, I_o = 1.0A$	•	1.8	V
Peak Output Current	$I_{O(pk)}$	$T_A = 25^{\circ}C, I_o = 5mA \text{ to } 1A$	1.5	3.3	A
Short Circuit Current (Note 2)	I_{DS}	$V_{IN} = -35V$	•	1.2	A
			•	2.8	A
Ripple Rejection	DV_{IN}	$f = 120 \text{ Hz}, DV_{IN} = -10V$	•	56	dB
	DV_{OUT}	(Note 3)	•	53	dB
Output Noise Voltage (Note 3)	N_O	$T_A = 25^{\circ}C, f = 10 \text{ Hz to } 100KHz$		40	$\mu V/V$ RMS
Long Term Stability (Note 3)	$\frac{DV_{OUT}}{Dt}$	$T_A = 25^{\circ}C, t = 1000 \text{ hrs.}$		120	mV

ELECTRICAL CHARACTERISTICS -15 Volt $V_{IN} = -23V, I_o = 500mA, -55^{\circ}C \ T_A \ 125^{\circ}C$ (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Output Voltage	V_{OUT}	$T_A = 25^{\circ}C$	-14.85	-15.15	V
		$V_{IN} = -17.5V \text{ to } -30V$	• -14.55	-15.45	V
Line Regulation (Note 1)	V_{RLINE}	$V_{IN} = -17.5V \text{ to } -30V$	•	25	mV
		$V_{IN} = -20V \text{ to } -26V$	•	50	mV
Load Regulation (Note 1)	V_{RLOAD}	$I_o = 5mA \text{ to } 1.5 \text{ Amp}$	•	15	mV
		$I_o = 250mA \text{ to } 750 \text{ mA}$	•	25	mV
Standby Current Drain	I_{SCD}		•	35	mV
			•	75	mV
Standby Current Drain Change With Line	$D I_{SCD}$ (Line)	$V_{IN} = -17.5V \text{ to } -30V$	•	21	mV
			•	45	mV
Standby Current Drain Change With Load	$D I_{SCD}$ (Load)	$I_o = 5mA \text{ to } 1000mA$	•	0.5	mA
Dropout Voltage	V_{DO}	$DV_{OUT} = 100mV, I_o = 1.0A$	•	6.0	mA
Peak Output Current	$I_{O(pk)}$	$T_A = 25^{\circ}C$	1.5	3.3	A
Short Circuit Current (Note 2)	I_{DS}	$V_{IN} = -35V$	•	6.5	mA
			•	0.8	mA
Ripple Rejection	DV_{IN}	$f = 120 \text{ Hz}, DV_{IN} = -10V$	•	0.8	mA
	DV_{OUT}	(Note 3)	•	50	dB
Output Noise Voltage (Note 3)	N_O	$T_A = 25^{\circ}C, f = 10 \text{ Hz to } 100KHz$		40	$\mu V/V$ RMS
Long Term Stability (Note 3)	$\frac{DV_{OUT}}{Dt}$	$T_A = 25^{\circ}C, t = 1000 \text{ hrs.}$		150	mV

Notes:

- Load and Line Regulation are specified at a constant junction temperature. Pulse testing with low duty cycle is used. Changes in output voltage due to heating effects must be taken into account separately.
 - Short Circuit protection is only assured up to $V_{IN} = -35V$.
 - If not tested, shall be guaranteed to the specified limits.
- The • denotes the specifications which apply over the full operating temperature range.

3.3