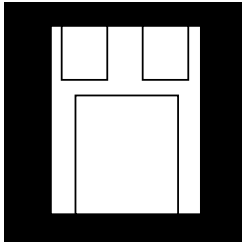


HERMETIC SURFACE MOUNT FIXED VOLTAGE POSITIVE REGULATORS APPROVED TO DESC DRAWINGS



Three Terminal, Fixed Voltage, 1.5 Amp Precision Positive Regulators In Hermetic Surface Mount Package

FEATURES

- Hermetic Surface Mount Package
- Output Voltages: +5V, +12V, +15V
- Output Voltages Set Internally To $\pm 1\%$
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Hi-Rel Screening Available

DESCRIPTION

These three terminal positive regulators are supplied in a hermetically sealed surface mount 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 1.5 amps of output current. These units feature internally trimmed output voltages to $\pm 1\%$ of nominal voltage. Standard voltages are +5V, +12V, and +15V. These units are ideally suited for Military applications where a hermetic surface mount package is required.

PART NUMBER DESIGNATOR

Standard Military Drawing Number

5962-8778201 NX

5962-8777601 NX

5962-8855301 NX

Omnirel Part Number

OM1805NMM

OM1812NMM

OM1815NMM

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ABSOLUTE MAXIMUM RATINGS @ 25°C

Input Voltage +35 V
 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 15W
 T_A 3W
 Thermal Resistance θ_{JC} 3.5°C/W
 θ_{JA} 120°C/W

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}	$T_A = 25^\circ C$	4.92	5.08	V
		$V_{IN} = 7.5V$ to 20V $I_O = 5mA$ to 1.0A, $P \leq 15 W$	• 4.85	5.15	V
Line Regulation (Note 1) (Note 4)	V_{RLINE}	$V_{IN} = 7.5V$ to 20V	•	5 12	mV mV
		$V_{IN} = 8.0V$ to 12V	•	4 10	mV mV
Load Regulation (Note 1)	V_{RLOAD}	$I_O = 5mA$ to 1.5 Amp	•	12	mV
		$I_O = 5mA$ to 1.0Amp	•	25	mV
		$I_O = 250mA$ to 750 mA	•	6 15	mV mV
Standby Current Drain	I_{SCD}		•	6 6.5	mA mA
			•	0.8	mA
Standby Current Drain Change With Line	ΔI_{SCD} (Line)	$V_{IN} = 7.5V$ to 20V	•		mA
Standby Current Drain Change With Load	ΔI_{SCD} (Load)	$I_O = 5mA$ to 1000mA	•	0.5	mA
Dropout Voltage	V_{DO}	$T_A = 25^\circ C, \Delta V_{OUT} = 100mV, I_O = 1.0A$		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 2.8	A A
			•		
Ripple Rejection	$\frac{\Delta V_{IN}}{\Delta V_{OUT}}$	$f = 120 Hz, \Delta V_{IN} = 10V$	•	68	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)	$\frac{\Delta V_{OUT}}{\Delta t}$	$T_A = 25^\circ C, t = 1000 hrs.$		75	mV

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Notes:

1. 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.
2. Short Circuit protection is only assured up to $V_{IN} = 35V$.
3. If not tested, shall be guaranteed to the specified limits.
The • denotes the specifications which apply over the full operating temperature range.
4. Minimum load current for full line regulation = 5.0 mA.



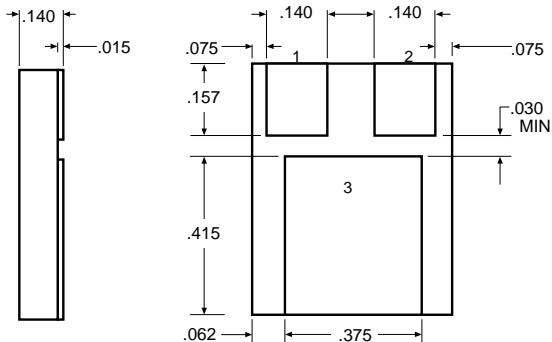
ELECTRICAL CHARACTERISTICS 12 Volt $V_{IN} = 19V, I_O = 500mA, -55^{\circ}C \leq T_A \leq 125^{\circ}C$ (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Output Voltage	V_{OUT}	$T_A = 25^{\circ}C$	11.88	12.12	V
		$V_{IN} = 14.5V$ to $27V$ $I_O = 5mA$ to $1.0A, P \leq 15W$	• 11.64	12.36	V
Line Regulation (Note 1) (Note 4)	V_{RLINE}	$V_{IN} = 14.5V$ to $27V$	•	18 50	mV mV
		$V_{IN} = 16V$ to $22V$	•	9 30	mV mV
Load Regulation (Note 1)	V_{RLOAD}	$I_O = 5mA$ to $1.5A$ Amp $I_O = 5mA$ to $1.0A$ Amp	•	32 60	mV mV
		$I_O = 250mA$ to $750mA$	•	20 40	mV mV
Standby Current Drain	I_{SCD}		•	6.0 6.5	mA mA
Standby Current Drain Change With Line	ΔI_{SCD} (Line)	$V_{IN} = 15V$ to $30V$	•	0.8	mA
Standby Current Drain Change With Load	ΔI_{SCD} (Load)	$I_O = 5mA$ to $1000mA$	•	0.5	mA
Dropout Voltage	V_{DO}	$\Delta V_{OUT} = 100mV, I_O = 1.0A$	•	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 2.8	A A
Ripple Rejection	$\frac{\Delta V_{IN}}{\Delta V_{OUT}}$	$f = 120Hz, \Delta V_{IN} = 10V$ (Note 3)	•	61 54	dB dB
	N_O	$T_A = 25^{\circ}C, f = 10Hz$ to $100KHz$		40	$\mu V/V$ RMS
Long Term Stability (Note 3)	$\frac{\Delta V_{OUT}}{\Delta t}$	$T_A = 25^{\circ}C, t = 1000hrs.$		120	mV

Notes:

1. 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.
2. Short Circuit protection is only assured up to $V_{IN} = 35V$.
3. If not tested, shall be guaranteed to the specified limits.
The • denotes the specifications which apply over the full operating temperature range.
4. Minimum load current for full line regulation = 5.0 mA.

MECHANICAL OUTLINE



CONNECTION

Pin 1 Input
Pin 2 Output
Pin 3 Ground

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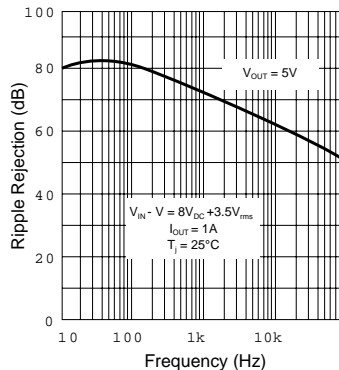
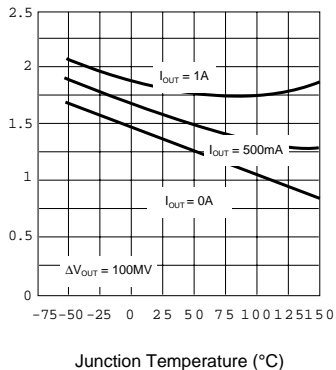
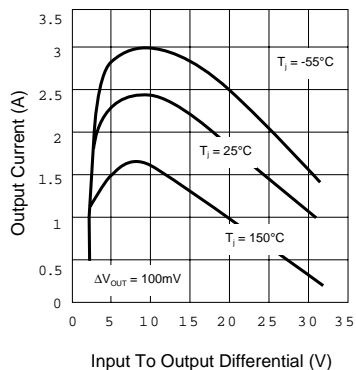
ELECTRICAL CHARACTERISTICS 15 Volt $V_{IN} = 23V, I_o = 500mA, -55^{\circ}C \leq T_A \leq 125^{\circ}C$ (unless otherwise specified)

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 $30V$ $I_O = 5mA$ to $1.0A, P \leq 15W$	• 14.6	15.4	V
Line Regulation (Note 1) (Note 4)	V_{RLINE}	$V_{IN} = 17.5V$ to $30V$	•	20	mV
		$V_{IN} = 20V$ to $26V$	•	50	mV
Load Regulation (Note 1)	V_{RLOAD}	$I_O = 5mA$ to $1.5A$ Amp	•	15	mV
		$I_O = 5mA$ to $1.0A$ Amp	•	25	mV
		$I_O = 250mA$ to $750mA$	•	35	mV
Standby Current Drain	I_{SCD}		•	75	mV
			•	21	mV
Standby Current Drain Change With Line	ΔI_{SCD} (Line)	$V_{IN} = 18.5V$ to $30V$	•	45	mV
			•	6.0	mA
Standby Current Drain Change With Load	ΔI_{SCD} (Load)	$I_O = 5mA$ to $1000mA$	•	6.5	mA
			•	0.8	mA
Dropout Voltage	V_{DO}	$T_A = 25^{\circ}C, \Delta V_{OUT} = 100mV, I_O = 1.0A$		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	$\frac{\Delta V_{IN}}{\Delta V_{OUT}}$	$f = 120Hz, \Delta V_{IN} = 10V$		54	dB
		(Note 3)	•	52	dB
Output Noise Voltage (Note 3)	N_O	$T_A = 25^{\circ}C, f = 10Hz$ to $100KHz$		40	$\mu V/V$ RMS
Long Term Stability (Note 3)	$\frac{\Delta V_{OUT}}{\Delta t}$	$T_A = 25^{\circ}C, t = 1000hrs.$		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.
- Minimum load current for full line regulation = 5.0 mA.

TYPICAL PERFORMANCE CHARACTERISTICS



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