

DESC APPROVED LOW DROPOUT NEGATIVE



Three Terminal, Fixed Voltage,
Low Dropout Negative Voltage Regulator
In Hermetic Packages

FEATURES

- Approved To DESC Standardized Military Drawings
- Low Dropout Voltage, 0.6 V @ $I_o = 1\text{ A}$
- Output Current in Excess of 1 A [LCC 20 (N2) package limited to 0.3A]
- Reverse Battery Protection
- Internal Short Circuit Protection
- Isolated and Non-Isolated Hermetic Package Types
- Output Voltages: - 5V, -5.2V, -12V, & -15V

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DESCRIPTION

The OM2990 series of fixed voltage regulators are designed to provide up to 1.5A with high efficiency. It has the ability to source 1A of output current with a typical dropout voltage of 0.6V and a maximum of 1V over the entire operating temperature range. It is supplied in hermetic packages and is ideally suited for all applications where small size and high reliability are required.

ABSOLUTE MAXIMUM RATINGS, $T_c = 25^\circ\text{C}$

Input Voltage	-26 V to +0.3V
Output Voltage	-5V, -5.2 V, -12 V, -15 V dc
Operating Junction Temperature Range	- 55°C to + 125°C
Storage Temperature Range	- 65°C to + 150°C
Lead Temperature (Soldering 10 seconds)	300°C
Thermal Resistance: Junction to Case	
Case 2, LCC20	15.5°C/W
Case U&M, TO-257 (isolated) & SMD-3	3.8°C/W
Case T&N, TO-257 (non-isolated) & SMD-1	3.0°C/W
Case Y, TO-3	2.7°C/W
Maximum Output Current	
Case 2	0.3A
Case U&M	1.2A
Case T, N & Y	1.5A

APPROVED DESC DRAWING	OMNIREL P/N
5962-9571101MUA	OM2990 - 5 STM
5962-9571002MUA	OM2990 - 5.2 STM
5962-9571001MUA	OM2990 - 12 STM

ELECTRICAL CHARACTERISTICS, OM2990-5NK, NM, NT (-5 VOLTS)

Test Conditions are -55°C T_A , 125°C , $V_N = -10\text{V}$, $C_{OUT} = 47\ \mu\text{F}$ (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V_{OUT}	$5\ \text{mA} \leq I_O \leq 1.0\ \text{A}$	1	-5.10	-4.90	V
			2	-5.25	-4.75	
Quiescent Current	I_Q	$I_O \leq 1.0\ \text{A}$	1		5	mA
			2		12	
Line Regulation	V_{RLN}	$I_O = 1.0\ \text{A}$, $V_N = -5\ \text{V}$	1,2		50	
Line Regulation	V_{RLN}	$-6\ \text{V} \leq V_N \leq -26\ \text{V}$, $I_{OUT} = 5\ \text{mA}$	1		± 40	mV
			2		± 50	
Load Regulation	V_{RLD}	$50\ \text{mA} \leq I_{OUT} \leq 1.0\ \text{A}$	1		± 50	mV
			2		± 100	
Dropout Voltage	V_{DO}	$I_O = 0.1\ \text{A}$	1		3	V
			2			
Dropout Voltage	V_{DO}	$DV_O = 100\ \text{mV}$	1		1	
			2			
Output Noise Voltage	V_{ON}	$I_O = 5\ \text{mA}$, 10 Hz - 100 kHz	3		750	μV
Short Circuit Current	I_{SC}	$R_L = 1$	1	1.5		A
			2	1.3		
Maximum Output Current	I_{MAX}		1	1.5		A
Ripple Rejection	R_R	$V_{ripple} = 1\ \text{V}_{rms}$ $I_{OUT} = 5\ \text{mA}$, $f = 1\ \text{kHz}$	1	50		dB

Notes: 1. $T_A = 25^{\circ}\text{C}$.
2. Over full operating temperature range.
3. Guaranteed, not tested.

ELECTRICAL CHARACTERISTICS, OM2990-12NK, NM, NT (-12 VOLTS)

Test Conditions are -55°C T_A , 125°C , $V_N = -17\text{V}$, $C_{OUT} = 47\ \mu\text{F}$ (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V_{OUT}	$5\ \text{mA} \leq I_O \leq 1.0\ \text{A}$	1	-12.24	-11.76	V
			2	-12.60	-11.40	
Quiescent Current	I_Q	$I_O \leq 1.0\ \text{A}$	1		5	mA
			2		12	
Line Regulation	V_{RLN}	$I_O = 1\ \text{A}$, $V_N = -12\ \text{V}$	1,2		50	
Line Regulation	V_{RLN}	$-13\ \text{V} \leq V_N \leq -26\ \text{V}$, $I_{OUT} = 5\ \text{mA}$	1		± 65	mV
			2		± 80	
Load Regulation	V_{RLD}	$50\ \text{mA} \leq I_{OUT} \leq 1.0\ \text{A}$	1		± 80	mV
			2		± 120	
Dropout Voltage	V_{DO}	$I_O = 0.1\ \text{A}$	1		3	V
			2			
Dropout Voltage	V_{DO}	$DV_O = 100\ \text{mV}$	1		1	
			2			
Output Noise Voltage	V_{ON}	$I_O = 5\ \text{mA}$, 10 Hz - 100 kHz	3		1500	μV
Short Circuit Current	I_{SC}	$R_L = 1$	1	.90		A
			2	.75		
Maximum Output Current	I_{MAX}		1	1.4		A
Ripple Rejection	R_R	$V_{ripple} = 1\ \text{V}_{rms}$ $I_{OUT} = 5\ \text{mA}$, $f = 1\ \text{kHz}$	1	42		dB

Notes: 1. $T_A = 25^{\circ}\text{C}$.
2. Over full operating temperature range.
3. Guaranteed, not tested.
4. The short circuit current is less than the maximum output current due to internal foldback current limiting. The -9V and -5.2V versions do not reach the foldback current limit and therefore conducts a higher short.

ELECTRICAL CHARACTERISTICS, OM2990-15NK, NM, NT (-15 VOLTS)

Test Conditions are -55°C T_A , 125°C , $V_N = -20\text{V}$, $C_{OUT} = 47\ \mu\text{F}$ (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V_{OUT}	$5\ \text{mA} \leq I_O \leq 1.0\ \text{A}$	1	-15.30	-14.70	V
			2	-15.75	-14.25	
Quiescent Current	I_Q	$I_O \leq 1.0\ \text{A}$	1		15	mA
			2		20	
Line Regulation	V_{RLN}	$I_O = 1.0\ \text{A}$, $V_N = -15\ \text{V}$	1,2		50	
Line Regulation	V_{RLN}	$-16\ \text{V} \leq V_N \leq -26\ \text{V}$, $I_{OUT} = 5\ \text{mA}$	1		± 75	mV
			2		± 120	
Load Regulation	V_{RLD}	$50\ \text{mA} \leq I_{OUT} \leq 1.0\ \text{A}$	1		± 120	mV
			2		± 190	
Dropout Voltage	V_{DO}	$I_O = 0.1\ \text{A}$	1		3	V
			2			
Dropout Voltage	V_{DO}	$DV_O = 100\ \text{mV}$	1		1	
			2			
Output Noise Voltage	V_{ON}	$I_O = 5\ \text{mA}$, 10 Hz - 100 kHz	3		1800	μV
Short Circuit Current	I_{SC}	$R_L = 1$	1	.75		A
			2	.62		
Maximum Output Current	I_{MAX}		1	1.4		A
Ripple Rejection	R_R	$V_{ripple} = 1\ \text{V}_{rms}$ $I_{OUT} = 5\ \text{mA}$, $f = 1\ \text{kHz}$	1	42		dB

Notes: 1. $T_A = 25^{\circ}\text{C}$.
2. Over full operating temperature range.
3. Guaranteed, not tested.
4. The short circuit current is less than the maximum output current due to internal foldback current limiting. The -9V and -5.2V versions do not reach the foldback current limit and therefore conducts a higher short circuit level.

ELECTRICAL CHARACTERISTICS, OM2990-5SM, ST (-5 VOLTS)

Test Conditions are -55°C T_A , 125°C , $V_N = -10\text{V}$, $C_{OUT} = 47\mu\text{F}$ (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V_{OUT}	$5\text{ mA} \leq I_O \leq 1.0\text{ A}$	1	-5.10	-4.90	V
			2	-5.25	-4.75	
Quiescent Current	I_Q	$I_O \leq 1.0\text{ A}$	1		5	m A
			2		12	
Line Regulation	V_{RLN}	$I_O = 1.0\text{ A}$, $V_N = -5\text{ V}$ $I_{OUT} = 5\text{ mA}$	1,2		50	m V
			1		± 45	
Load Regulation	V_{RLD}	50 mA $I_{OUT} = 1.0\text{ A}$	1		± 70	m V
			2		± 110	
Dropout Voltage	V_{DO}	$I_O = 0.1\text{ A}$ $DV_O = 100\text{ mV}$	1		3	V
			2			
			1		1	
			2			
Output Noise Voltage	V_{ON}	$I_O = 5\text{ mA}$, 10 Hz - 100 kHz	3		750	μV
Short Circuit Current	I_{SC}	$R_L = 1$	1,2	1.27		A
Maximum Output Current	I_{MAX}		1	1.27		A
Ripple Rejection	R_R	$V_{ripple} = 1\text{ V}_{rms}$ $I_{OUT} = 5\text{ mA}$, $f = 1\text{ kHz}$	1	50		dB

Notes: 1. $T_A = 25^{\circ}\text{C}$.
2. Over full operating temperature range.
3. Guaranteed, not tested.

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ELECTRICAL CHARACTERISTICS, OM2990-12SM, ST (-12 VOLTS)

Test Conditions are -55°C T_A , 125°C , $V_N = -17\text{V}$, $C_{OUT} = 47\mu\text{F}$ (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V_{OUT}	$5\text{ mA} \leq I_O \leq 1.0\text{ A}$	1	-12.24	-11.76	V
			2	-12.60	-11.40	
Quiescent Current	I_Q	$I_O \leq 1.0\text{ A}$	1		5	m A
			2		12	
Line Regulation	V_{RLN}	$I_O = 1\text{ A}$, $V_N = -12\text{ V}$ $I_{OUT} = 5\text{ mA}$	1,2		50	m V
			1		± 65	
Load Regulation	V_{RLD}	50 mA $I_{OUT} = 1.0\text{ A}$	1		± 80	m V
			2		± 120	
Dropout Voltage	V_{DO}	$I_O = 0.1\text{ A}$ $DV_O = 100\text{ mV}$	1		3	V
			2			
			1		1	
			2			
Output Noise Voltage	V_{ON}	$I_O = 5\text{ mA}$, 10 Hz - 100 kHz	3		1500	μV
Short Circuit Current	I_{SC}	$R_L = 1$	1,2	.75		A
Maximum Output Current	I_{MAX}		1	1.18		A
Ripple Rejection	R_R	$V_{ripple} = 1\text{ V}_{rms}$ $I_{OUT} = 5\text{ mA}$, $f = 1\text{ kHz}$	1	42		dB

Notes: 1. $T_A = 25^{\circ}\text{C}$.
2. Over full operating temperature range.
3. Guaranteed, not tested.
4. The short circuit current is less than the maximum output current due to internal foldback current limiting. The -5V and -5.2V versions do not reach the foldback current limit and therefore conducts a higher short circuit level.

ELECTRICAL CHARACTERISTICS, OM2990-15SM, ST (-15 VOLTS)

Test Conditions are -55°C T_A , 125°C , $V_N = -20\text{V}$, $C_{OUT} = 47\mu\text{F}$ (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V_{OUT}	$5\text{ mA} \leq I_O \leq 1.0\text{ A}$	1	-15.30	-14.70	V
			2	-15.75	-14.25	
Quiescent Current	I_Q	$I_O \leq 1.0\text{ A}$	1		15	m A
			2		20	
Line Regulation	V_{RLN}	$I_O = 1.0\text{ A}$, $V_N = -15\text{ V}$ $I_{OUT} = 5\text{ mA}$	1,2		50	m V
			1		± 75	
Load Regulation	V_{RLD}	50 mA $I_{OUT} = 1.0\text{ A}$	1		± 120	m V
			2		± 190	
Dropout Voltage	V_{DO}	$I_O = 0.1\text{ A}$ $DV_O = 100\text{ mV}$	1		3	V
			2			
			1		1	
			2			
Output Noise Voltage	V_{ON}	$I_O = 5\text{ mA}$, 10 Hz - 100 kHz	3		1800	μV
Short Circuit Current	I_{SC}	$R_L = 1$	1	.60		A
			2	.50		
Maximum Output Current	I_{MAX}		1	1.4		A
			4			
Ripple Rejection	R_R	$V_{ripple} = 1\text{ V}_{rms}$ $I_{OUT} = 5\text{ mA}$, $f = 1\text{ kHz}$	1	42		dB

Notes: 1. $T_A = 25^{\circ}\text{C}$.
2. Over full operating temperature range.
3. Guaranteed, not tested.
4. The short circuit current is less than the maximum output current due to internal foldback current limiting. The -5V and -5.2V versions do not reach the foldback current limit and therefore conducts a higher short circuit level.

ELECTRICAL CHARACTERISTICS, OM2990- 5N2 (-5 VOLTS)

Test Conditions are -55°C T_A, 125°C, V_{IN} = -10V, C_{OUT} = 47 μF (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V _{OUT}	5 mA ≤ I _B ≤ 300 mA	1	-5.10	-4.90	V
			2	-5.25	-4.75	
Quiescent Current	I _Q	I _B ≤ 300 mA	1		7	mA
			2		14	
			1,2	I _B = 300 mA, V _{IN} = -5 V	55	
Line Regulation	V _{RLN}	-6 V V _{IN} -26 V, I _{OUT} = 5 mA	1		±45	mV
			2		±60	
Load Regulation	V _{RLD}	50 mA I _{OUT} 300 mA	1		±80	mV
			2		±120	
Dropout Voltage	V _{DO}	I _B = 100 mA DV _O 100 mV	1		3	V
			2			
			1	I _B = 300 mA DV _O 100 mV	1	
			2			
Output Noise Voltage	V _{ON}	I _B = 5 mA, 10 Hz - 100 kHz	3		800	μV
Short Circuit Current	I _{SC}	R _L = 1	1	300		mA
			2	250		
Maximum Output Current	I _{MAX}		1	300		mA
Ripple Rejection	R _R	V _{ripple} = 1 V _{ms} I _{OUT} = 5 mA, f = 1 kHz	1	50		dB

Notes: 1. T_A = 25°C.
2. Over full operating temperature range.
3. Guaranteed, not tested.

ELECTRICAL CHARACTERISTICS, OM2990-12N2 (-12 VOLTS)

Test Conditions are -55°C T_A, 125°C, V_{IN} = -17V, C_{OUT} = 47 μF (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V _{OUT}	5 mA ≤ I _B ≤ 300 mA	1	-12.24	-11.76	V
			2	-12.60	-11.40	
Quiescent Current	I _Q	I _B ≤ 300 mA	1		7	mA
			2		14	
			1,2	I _B = 300 mA, V _{IN} = -12 V	60	
Line Regulation	V _{RLN}	-13 V V _{IN} -26 V, I _{OUT} = 5 mA	1		±75	mV
			2		±110	
Load Regulation	V _{RLD}	50 mA I _{OUT} 300 mA	1		±120	mV
			2		±190	
Dropout Voltage	V _{DO}	I _B = 100 mA DV _O 100 mV	1		3	V
			2			
			1	I _B = 300 mA DV _O 100 mV	1	
			2			
Output Noise Voltage	V _{ON}	I _B = 5 mA, 10 Hz - 100 kHz	3		1650	μV
Short Circuit Current	I _{SC}	R _L = 1	1	200		mA
			2	175		
Maximum Output Current	I _{MAX}		1	280		mA
Ripple Rejection	R _R	V _{ripple} = 1 V _{ms} I _{OUT} = 5 mA, f = 1 kHz	1	42		dB

Notes: 1. T_A = 25°C.
2. Over full operating temperature range.
3. Guaranteed, not tested.
4. The short circuit current is less than the maximum output current due to internal foldback current limiting. The -5V and -5.2V versions do not reach the foldback current limit and therefore conducts a higher short circuit level.

ELECTRICAL CHARACTERISTICS, OM2990-15 N2 (-15 VOLTS)

Test Conditions are -55°C T_A, 125°C, V_{IN} = -20V, C_{OUT} = 47 μF (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V _{OUT}	5 mA ≤ I _B ≤ 300 mA	1	-15.30	-14.70	V
			2	-15.75	-14.25	
Quiescent Current	I _Q	I _B ≤ 300 mA	1		20	mA
			2		25	
			1,2	I _B = 300 mA, V _{IN} = -15 V	60	
Line Regulation	V _{RLN}	-16 V V _{IN} -26 V, I _{OUT} = 5 mA	1		±85	mV
			2		±130	
Load Regulation	V _{RLD}	50 mA I _{OUT} 300 mA	1		±135	mV
			2		±205	
Dropout Voltage	V _{DO}	I _B = 100 mA DV _O 100 mV	1		3	V
			2			
			1	I _B = 300 mA DV _O 100 mV	1	
			2			
Output Noise Voltage	V _{ON}	I _B = 5 mA, 10 Hz - 100 kHz	3		1900	μV
Short Circuit Current	I _{SC}	R _L = 1	1	150		mA
			2	140		
Maximum Output Current	I _{MAX}		1	280		mA
Ripple Rejection	R _R	V _{ripple} = 1 V _{ms} I _{OUT} = 5 mA, f = 1 kHz	1	42		dB

Notes: 1. T_A = 25°C.
2. Over full operating temperature range.
3. Guaranteed, not tested.
4. The short circuit current is less than the maximum output current due to internal foldback current limiting. The -5V and -5.2V versions do not reach the foldback current limit and therefore conducts a higher short circuit level.

ELECTRICAL CHARACTERISTICS, OM2990-5.2NK, NM, NT (-5.2 VOLTS)

Test Conditions are -55°C , T_A , 125°C , $V_{IN} = -10.2\text{V}$, $C_{OUT} = 47\mu\text{F}$ (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V_{OUT}	$5\text{ mA} \leq I_O \leq 1.0\text{ A}$	1	-5.30	-5.10	V
			2	-5.46	-4.94	
Quiescent Current	I_Q	$I_O \leq 1.0\text{ A}$	1		5	m A
			2		12	
Line Regulation	V_{RLN}	$I_O = 1.0\text{ A}$, $V_{IN} = -5.2\text{ V}$ $-6.2\text{ V} \leq V_{IN} \leq -26\text{ V}$, $I_{OUT} = 5\text{ mA}$	1,2		50	
			1		± 40	m V
Load Regulation	V_{RLD}	$50\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$	1		± 50	m V
			2		± 100	
Dropout Voltage	V_{DO}	$I_O = 0.1\text{ A}$ $DV_O = 100\text{ mV}$	1		3	V
			2			
			1		1	
			2			
Output Noise Voltage	V_{ON}	$I_O = 5\text{ mA}$, 10 Hz - 100 kHz	3		750	μV
Short Circuit Current	I_{SC}	$R_L = 1$	1	1.5		A
			2	1.3		
Maximum Output Current	I_{MAX}		1	1.5		A
Ripple Rejection	R_R	$V_{ripple} = 1 V_{rms}$ $I_{OUT} = 5\text{ mA}$, $f = 1\text{ kHz}$	1	50		dB

Notes: 1. $T_A = 25^{\circ}\text{C}$.
2. Over full operating temperature range.
3. Guaranteed, not tested.

ELECTRICAL CHARACTERISTICS, OM2990-5.2SM, ST (-5.2 VOLTS)

Test Conditions are -55°C , T_A , 125°C , $V_{IN} = -10.2\text{V}$, $C_{OUT} = 47\mu\text{F}$ (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V_{OUT}	$5\text{ mA} \leq I_O \leq 1.0\text{ A}$	1	-5.30	-5.10	V
			2	-5.46	-4.94	
Quiescent Current	I_Q	$I_O \leq 1.0\text{ A}$	1		5	m A
			2		12	
Line Regulation	V_{RLN}	$I_O = 1.0\text{ A}$, $V_{IN} = -5.2\text{ V}$ $-6.2\text{ V} \leq V_{IN} \leq -26\text{ V}$, $I_{OUT} = 5\text{ mA}$	1,2		50	
			1		± 45	m V
Load Regulation	V_{RLD}	$50\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$	1		± 70	m V
			2		± 110	
Dropout Voltage	V_{DO}	$I_O = 0.1\text{ A}$ $DV_O = 100\text{ mV}$	1		3	V
			2			
			1		1	
			2			
Output Noise Voltage	V_{ON}	$I_O = 5\text{ mA}$, 10 Hz - 100 kHz	3		750	μV
Short Circuit Current	I_{SC}	$R_L = 1$	1,2	1.27		A
Maximum Output Current	I_{MAX}		1	1.27		A
Ripple Rejection	R_R	$V_{ripple} = 1 V_{rms}$ $I_{OUT} = 5\text{ mA}$, $f = 1\text{ kHz}$	1	50		dB

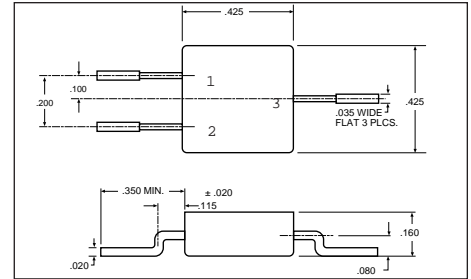
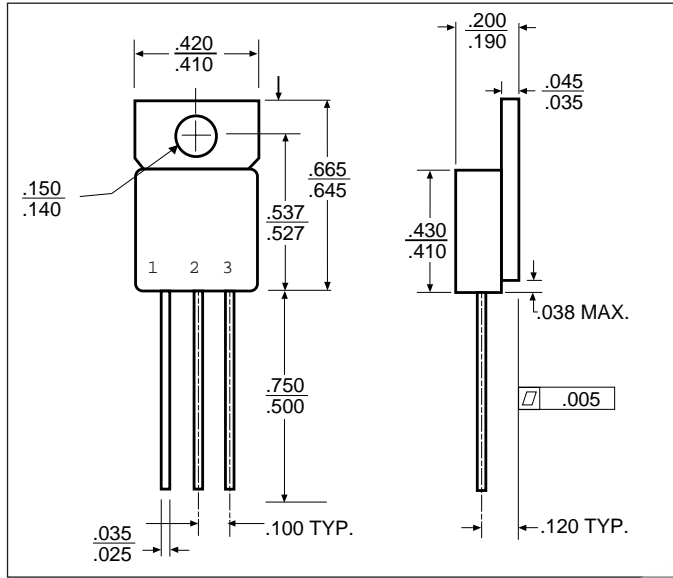
Notes: 1. $T_A = 25^{\circ}\text{C}$.
2. Over full operating temperature range.
3. Guaranteed, not tested.

ELECTRICAL CHARACTERISTICS, OM2990-5.2N2 (-5.2 VOLTS)

Test Conditions are -55°C , T_A , 125°C , $V_{IN} = -10.2\text{V}$, $C_{OUT} = 47\mu\text{F}$ (unless otherwise specified).

Parameter	Symbol	Test Conditions	Notes	Min.	Max.	Unit
Output Voltage	V_{OUT}	$5\text{ mA} \leq I_O \leq 300\text{ mA}$	1	-5.30	-5.10	V
			2	-5.46	-4.94	
Quiescent Current	I_Q	$I_O \leq 300\text{ mA}$	1		7	m A
			2		14	
			1,2		55	
Line Regulation	V_{RLN}	$I_O = 300\text{ mA}$, $V_{IN} = -5.2\text{ V}$ $-6.2\text{ V} \leq V_{IN} \leq -26\text{ V}$, $I_{OUT} = 5\text{ mA}$	1		± 45	m V
			2		± 60	
Load Regulation	V_{RLD}	$50\text{ mA} \leq I_{OUT} \leq 300\text{ mA}$	1		± 80	m V
			2		± 120	
Dropout Voltage	V_{DO}	$I_O = 100\text{ mA}$ $DV_O = 100\text{ mV}$	1		3	V
			2			
			1		1	
			2			
Output Noise Voltage	V_{ON}	$I_O = 5\text{ mA}$, 10 Hz - 100 kHz	3		800	μV
Short Circuit Current	I_{SC}	$R_L = 1$	1	300		m A
			2	250		
Maximum Output Current	I_{MAX}		1	300		m A
Ripple Rejection	R_R	$V_{ripple} = 1 V_{rms}$ $I_{OUT} = 5\text{ mA}$, $f = 1\text{ kHz}$	1	50		dB

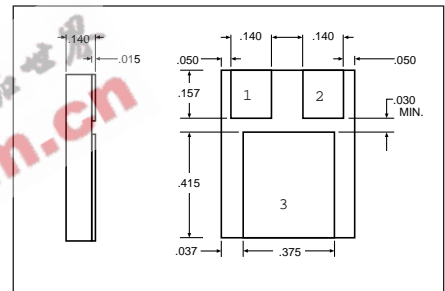
Notes: 1. $T_A = 25^{\circ}\text{C}$.
2. Over full operating temperature range.
3. Guaranteed, not tested.



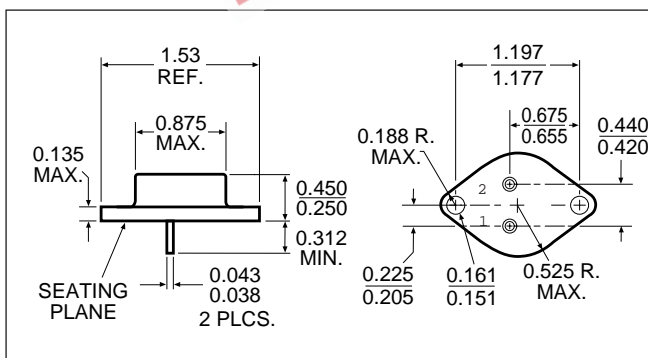
SMD-3 OM2990SMM
 Front View
 Pin 1 - Ground
 Pin 2 - Output
 Pin 3 - Input
 Case - Isolated

OM2990STM Isolated Front View
 Pin 1 - Ground
 Pin 2 - Input
 Pin 3 - Output
 Tab - Isolated

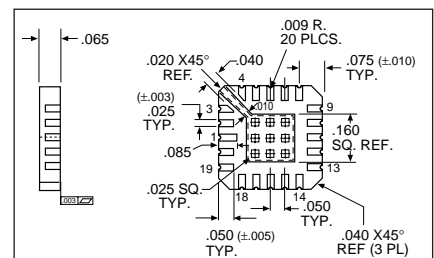
OM2990NTM Non-Isolated Front View
 Pin 1 - Ground
 Pin 2 - Input
 Pin 3 - Output
 Tab - Input



SMD 1 "N" PACKAGE OM2990NMM
 Pin 1 - Ground
 Pin 2 - Output
 Pin 3 - Input



OM2990NKM
 Pin 1 - Ground
 Pin 2 - Output



LCC 20 OM2990N2M

Pin 1 NC	Pin 11 V_{OUT}
Pin 2 NC	Pin 12 V_{OUT}
Pin 3 NC	Pin 13 NC
Pin 4 NC	Pin 14 NC
Pin 5 NC	Pin 15 V_{IN}
Pin 6 Ground	Pin 16 V_{IN}
Pin 7 NC	Pin 17 V_{IN}
Pin 8 NC	Pin 18 NC
Pin 9 V_{OUT} (Sense)	Pin 19 NC