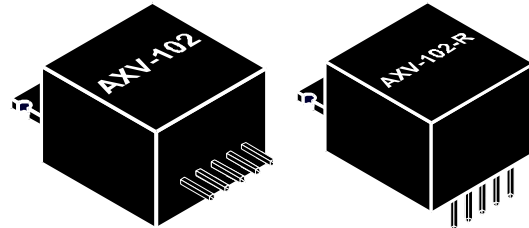


Features :

- 2mV dc dropout at 0.1A load
- 60mV dc dropout at 5A load
- 120mV dc dropout at 10A load
- AC output impedance better than 2mΩ.
- DC output impedance less than 1mΩ.
- Adjustable output from 1.2 up to 5.5V
- Output voltage tracks input voltage for $V_{in} < V_{out}$.
- Internally protected against input crowbar.
- High noise attenuation at dropout Voltage as low as 3mV ($I_{out}=100mA$).



AXV-102	AXV-102-R
Ordering Information	

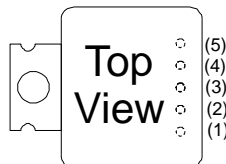
Product Description

The AXV is a family of “Zero” Dropout Voltage regulators (dropout voltage less than 3 mV at 0.1A load) provides high attenuation (48dB at 1KHz) at a dropout Voltage as low as 3mV. When the input voltage is less than the specified output voltage, the output voltage tracks the input voltage with 2mV voltage dropout at 0.1A load, this feature is a unique advantage for battery powered applications.

The AXV102 is designed for supply voltage of 2V up to 6V and up to 20A load. A low level voltage (less than 0.3V), at shut down input, shuts the output voltage and the quiescent current drops. This feature fits power management, as well as battery power saving applications. In addition the AXV102 has a reference input to control the output voltage in the range of 1.2 up to 5.5V.

Applications

- **Battery power**
- **Power management**
- **Mixed signal**
- **Conducted noise filter**
- **GPS Systems**
- **5V to 3.3 Logic Regulator**



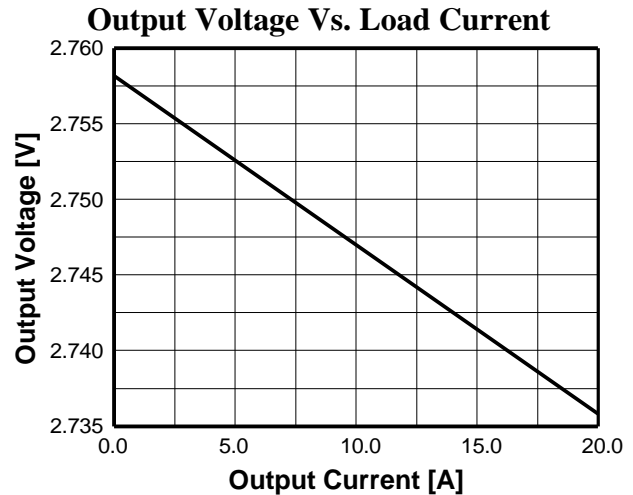
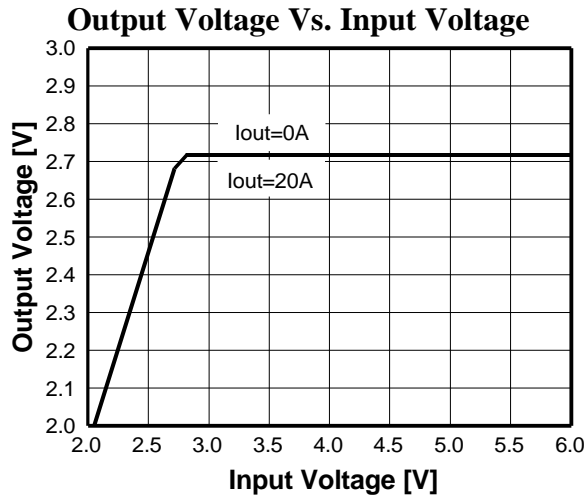
Pin Description		
PIN	NAME	Description
1	SD	Shutdown
2	REFF	Reference input
3	IN	Input Voltage
4	OUT	Output Voltage
5	GND	Ground

Absolute Maximum Ratings

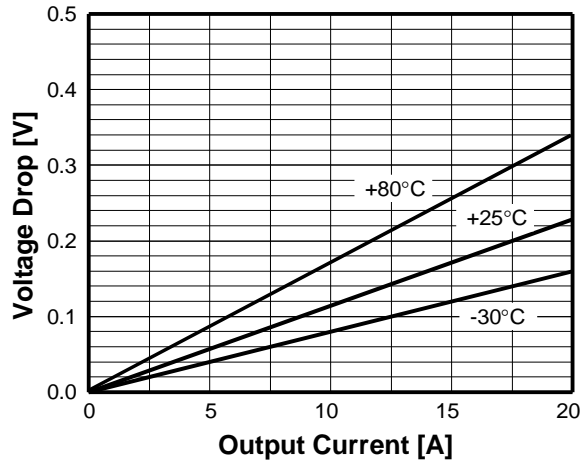
Parameter	Conditions	Min	Max	Units
Supply Voltage		-0.5	+6.5	Vdc
Maximum Output Current		-120	30	A
REFF Pin Current	To ground	0	500	μA
SD Pin current	To ground	0	20	μA
SD Pin Voltage		0	Vin+0.3V	V
Storage Temperature		-30	110	°C
Operating Temperature		-30	85	°C

DC Electrical Specification (-30°C ≤ T_A ≤ +85°C)

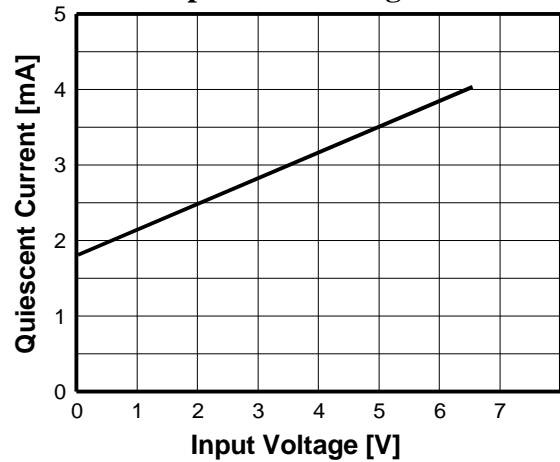
Parameter	Conditions	Min	Typ	Max	Units
Operating Voltage		2		6	Vdc
Output load Current		0		20	A
Quiescent Current	SD open Vin=2.7V	2	2.2	2.5	mA
	SD open Vin=3.3V	2.2	2.4	2.7	
	SD open Vin=5V	3	3.3	3.6	
	SD connected to ground Vin=2.7V	100	120	150	μA
	SD connected to ground Vin=3.3V	120	160	200	
	SD connected to ground Vin=5V	1200	1300	1400	
Regulated Output Voltage	R1-infinite 2.75V<Vin<6V	2.700		2.750	V
Line Regulation	R1-infinite 2.75V<Vin<6V Iout=0.1A		2	3	mV
Load Regulation	R1-infinite 2.75V<Vin<6V Iout=0..10A		20	30	mV
SD Current	SD connected to ground			30	μA
SD Threshold Voltage		0.3		0.5	V



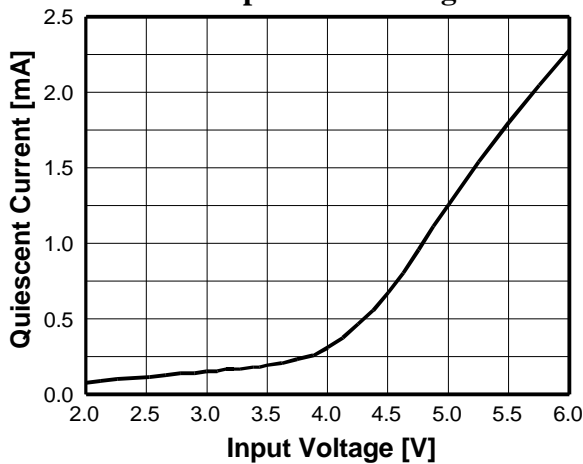
Voltage Drop Vs. Output Current



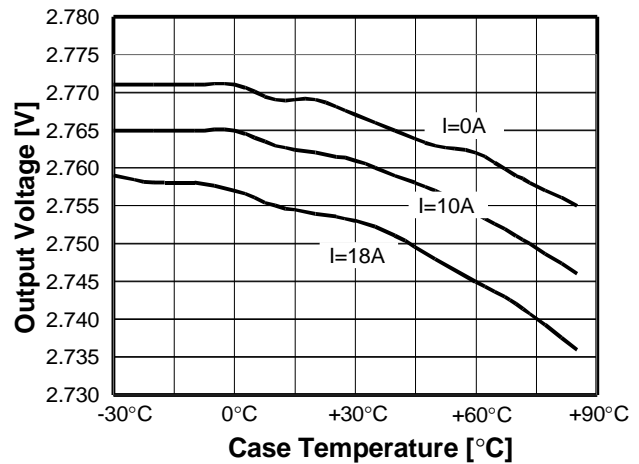
Quiescent Current (Ground Current) Vs. Operation Voltage



Shut Down Quiescent Current Vs. Operation Voltage



Output Voltage Vs. Temperature

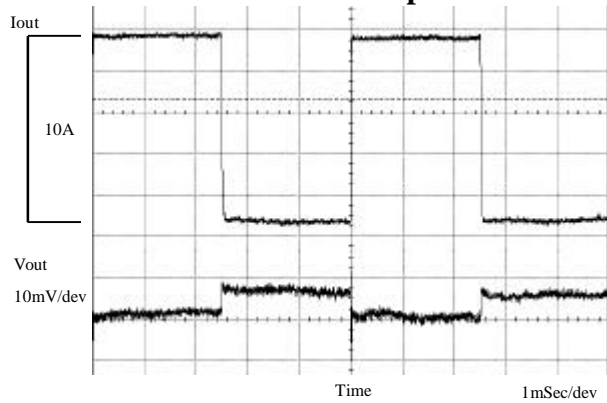


AC Electrical Specification (-30°C ≤ T_A ≤ +85°C)

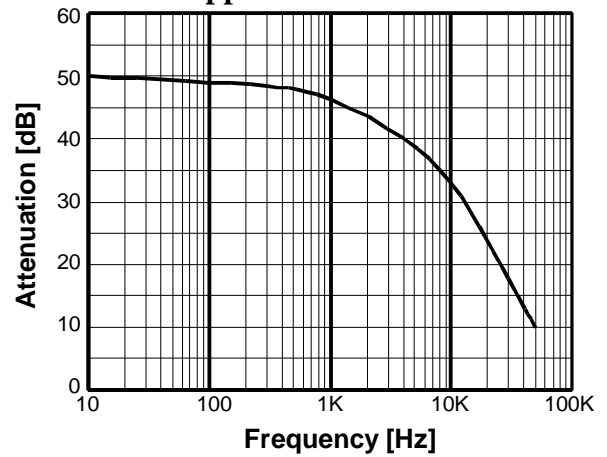
Parameter	Conditions	Min	Typ	Max	Units
Attenuation* @ 0 ≤ I _{LOAD} ≤ 0.1A	V _{drop} > 5mV 0-3KHz	45	50	60	dB
Insertion Loss	20Hz ÷ 10KHz @ 50Ω	55	60		dB
Output Impedance	10Hz ÷ 10KHz	60	80	100	mΩ
Line Transient Attenuation	Transient voltage less than 0.75V	35	40		dB
Transient Output Impedance	I _{dc} =2A; ΔI=1A		70	110	mΩ

* Maximum Input Noise Level [p-p]= 1.8*V_{drop}

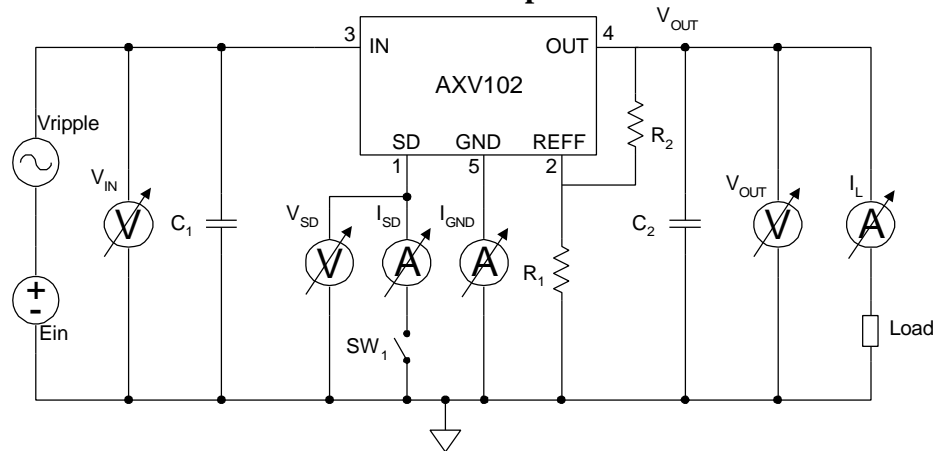
Load Transient Response



Ripple Attenuation



Test Setup



Output Voltage Determination

$V_{out} < 2.7V$	$V_{out} > 2.7V$
$V_{OUT}[V](\pm 50mV) = \frac{3.6 + 2.7R_2[K\Omega]}{3 + R_2[K\Omega]}$	$V_{OUT}[V](\pm 50mV) = 2.7V + \frac{3.6}{R_1[K\Omega]}$

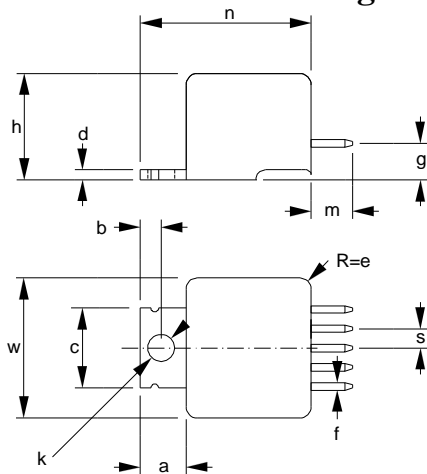
General Specifications

Parameter		Units
Weight	8.2±0.5	gr.

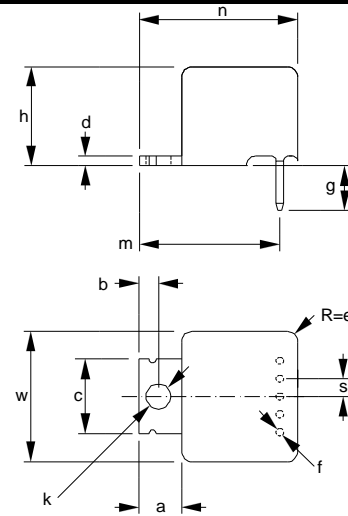
Thermal Resistance

Parameter	Typ	Max	Units
Junction-to-Case [R_{qJC}]		1.0	°C/W
Case-to-Sink [R_{qCS}]	0.50		°C/W
Junction-to-Ambient [R_{qJA}]	62		°C/W

Mechanical Drawings



	mm		inch	
	min	max	min	max
a	4.90	5.90	0.193	0.232
b	2.62	2.87	0.103	0.113
c	10.29	10.54	0.405	0.415
d	1.22	1.32	0.048	0.052
e	1.40	1.50	0.055	0.059
f	0.97	1.01	0.038	0.040
g	4.40	5.40	0.173	0.213
h	13.80	14.20	0.543	0.559
k	3.54	3.78	0.139	0.149
m	5.50	6.50	0.217	0.256
n	21.00	22.40	0.827	0.882
s	2.39	2.69	0.094	0.106
w	18.10	18.60	0.713	0.732



	mm		inch	
	min	max	min	max
a	4.90	5.90	0.193	0.232
b	2.62	2.87	0.103	0.113
c	10.29	10.54	0.405	0.415
d	1.22	1.32	0.048	0.052
e	1.40	1.50	0.055	0.059
f	0.97	1.01	0.038	0.040
g	6.11	6.36	0.241	0.250
h	13.80	14.20	0.543	0.559
k	3.54	3.78	0.139	0.149
m	19.91	20.16	0.784	0.794
n	21.00	22.40	0.827	0.882
s	2.39	2.69	0.094	0.106
w	18.10	18.60	0.713	0.732

