

Electrical Specifications (continued)

Parameter	Device	Symbol	Min	Typ	Max	Unit
Output Voltage Set-point ($V_{IN}=V_{IN,nom}$, $I_O=I_{O,nom}$, $T_{ref}=25^{\circ}C$)	All	$V_{O, set}$	-1.5	—	+1.5	% $V_{O, set}$
Output Voltage (Over all operating input voltage, resistive load, and temperature conditions until end of life)	All	$V_{O, set}$	-5.0	—	+3.0	% $V_{O, set}$
Adjustment Range Selected by an external resistor	ATS030 ATS020 ATH030*		0.8 0.8 0.8		2.75 3.63 3.63	Vdc Vdc Vdc
* $V_O \geq 3.3V$ only possible for $V_{IN} \geq 4.75V$						
Output Regulation Line ($V_{IN}=V_{IN, min}$ to $V_{IN, max}$) Load ($I_O=I_{O, min}$ to $I_{O, max}$) Temperature ($T_{ref}=T_{A, min}$ to $T_{A, max}$)	All All (-P version) All		— — — —	— — — 0.5	20 40 70 1	mV mV mV % $V_{O, set}$
Output Ripple and Noise on nominal output ($V_{IN}=V_{IN, nom}$ and $I_O=I_{O, min}$ to $I_{O, max}$ $C_{OUT} = 0.1\mu F // 10 \mu F$ ceramic capacitors) Peak-to-Peak (5Hz to 20MHz bandwidth) Peak-to-Peak (5Hz to 20MHz bandwidth) Peak-to-Peak (5Hz to 20MHz bandwidth)	$V_O \leq 2.5V$ $2.5V < V_O \leq 3.63V$ $V_O > 3.63V$		— — —		50 75 100	mV _{pk-pk} mV _{pk-pk} mV _{pk-pk}
External Capacitance ESR $\geq 1 m\Omega$ ESR $\geq 10 m\Omega$	All All	$C_{O, max}$ $C_{O, max}$	0 0	— —	2,000 10,000	μF μF
Output Current ($V_{IN} = 4.5$ to $5.5Vdc$) ($V_{IN} = 6$ to $14Vdc$) ($V_{IN} = 6$ to $14Vdc$)	ATH Series ATS030 Series ATS020 Series	I_O I_O I_O	0 0 0		30 30 20	Adc Adc Adc
Output Current Limit Inception (Hiccup Mode)	All	$I_{O, lim}$	—	140	—	% I_{Omax}
Output Short-Circuit Current ($V_O \leq 250mV$) (Hiccup Mode)	All	$I_{O, s/c}$	—	3.5	—	Adc
Efficiency ATH Series: $V_{IN}=5Vdc$, $T_A=25^{\circ}C$ $I_O=I_{O, max}$, $V_O=V_{O, set}$ ATS Series: $V_{IN}=12Vdc$, $T_A=25^{\circ}C$ $I_O=I_{O, max}$, $V_O=V_{O, set}$	$V_{O, set} = 0.8dc$ $V_{O, set} = 1.2Vdc$ $V_{O, set} = 1.5Vdc$ $V_{O, set} = 1.8Vdc$ $V_{O, set} = 2.5Vdc$ $V_{O, set} = 3.3Vdc$ $V_{O, set} = 0.8dc$ $V_{O, set} = 1.2Vdc$ $V_{O, set} = 1.8Vdc$ $V_{O, set} = 2.5Vdc$ $V_{O, set} = 3.3Vdc$	η η η η η η η η η η η		82.2 85.8 89.5 89.2 92.0 92.2 77.5 83.5 86.5 91.3 92.1		% % % % % % % % % % %
Switching Frequency, Fixed	All	f_{sw}	—	300	—	KHz

Electrical Specifications (continued)

Parameter	Device	Symbol	Min	Typ	Max	Unit
Dynamic Load Response						
(dI _O /dt=5A/μs; V _{IN} =12V, V _O =3.3V ; T _A =25°C)						
Load Change from I _O = 50% to 100% of I _{O,max} ; No external output capacitors						
Peak Deviation	All	V _{pk}	—	350	—	mV
Settling Time (V _O <10% peak deviation)	All	t _s	—	25	—	μs
(dI _O /dt=5A/μs; V _{IN} =V _{IN, nom} ; T _A =25°C)						
Load Change from I _O = 100% to 50% of I _{O, max} ; No external output capacitors						
Peak Deviation	All	V _{pk}	—	350	—	mV
Settling Time (V _O <10% peak deviation)	All	t _s	—	25	—	μs
(dI _O /dt=5A/μs; V _{IN} =V _{IN, nom} ; T _A =25°C)						
Load Change from I _O = 50% to 100% of I _{O,max} ; 2x150 μF polymer capacitor						
Peak Deviation	All	V _{pk}	—	250	—	mV
Settling Time (V _O <10% peak deviation)	All	t _s	—	40	—	μs
(dI _O /dt=5A/μs; V _{IN} =V _{IN, nom} ; T _A =25°C)						
Load Change from I _O = 100% to 50% of I _{O,max} ; 2x150 μF polymer capacitor						
Peak Deviation	All	V _{pk}	—	250	—	mV
Settling Time (V _O <10% peak deviation)	All	t _s	—	40	—	μs

General Specifications

Parameter	Min	Typ	Max	Unit
Calculated MTBF (V _{IN} =12V, V _O =3.3Vdc, I _O = 0.8I _{O, max} , T _A =40°C) Per Telecordia Method		3,016,040		Hours
Weight	—	6.2 (0.22)	—	g (oz.)