

AN1V PB31

Absolute maximum ratings(not operating)

Parameter	Symbol	Unit	Value
Supply voltage	V_C	V	6.5
ESD rating, Human Body Model (HBM)	V_{ESD}	V	8000

- ✘ Stresses above these ratings may cause permanent damage.
- ✘ Exposure to absolute maximum ratings for extended periods may degrade reliability

Environmental and mechanical characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Ambient operating temperature	T_A	°C	-40		150	AN1V 50 PB31
			-40		150	AN1V 100 PB31
			-40		125	AN1V 150 PB31
			-40		85	AN1V 200 PB31
Ambient storage temperature	T_S	°C	-55		150	
Primary resistance value	R_P	$\mu\Omega$		100		
Mass	m	g		5		

Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test@ 50Hz,1min	V_d	kV	4.8	According to IEC 60664-1
Plastic case	-	-	UL94-V0	
Comparative tracking index	CTI	PLC	2	
Application example	-	-	475V _{RMS}	Reinforced insulation,According to IEC 61800-5-1, IEC 62109-1CATⅢ, PD2
Application example	-	-	960V _{RMS}	Basic insulation,According to IEC 61800-5-1, IEC 62109-1CATⅢ, PD2

Electrical data

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※ With $T_A = 25^\circ\text{C}$, $V_C = 3.3\text{V}$, $R_L = 10\text{k}\Omega$, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal rms current	I_{PN}	A	-50		50	
Supply voltage	V_C	V	3	3.3	3.6	
Output voltage	V_{OUT}	V	$V_{OUT} = V_{O0V} + G_{th} \times I_P \times (V_C/3.3)$			
Electrical offset voltage	V_{O0V}	V		$V_{CC}/2$		
Theoretical sensitivity	G_{th}	mV/A		26.4		
Current consumption	I_C	mA		8	11	
Load resistance	R_L	k Ω	5.1			
Load capacitor	C_1	nF		1	10	
Power filter capacitor	C_2	nF		100		
Performance data						
Sensitivity error	ε_G	%	-1		1	
Temperature of G	TCG	%	-1.5		1.5	@ $T_A = -40^\circ\text{C} \sim 150^\circ\text{C}$
Electrical offset current	V_{OE}	mV	-10	± 5	10	@ $V_C = 3.3\text{V}$ also $I_P = 0\text{A}$
Electrical offset error of temperature drift	TCV_{OE}	mV	-10		10	@ $T_A = -40^\circ\text{C} \sim 150^\circ\text{C}$
Hysteresis offset voltage	V_{OM}	mV		4		@ $V_C = 3.3\text{V}$, after $\pm I_{PN}$
Linearity error	ε_L	% of I_{PN}	-1		1	Exclusive of V_{OE}
Accuracy @ I_{PN}	X	% of I_{PN}	-2		2	@ $T_A = -40^\circ\text{C} \sim 150^\circ\text{C}$
Response time@ 90% of I_{PN}	t_r	μs		2.5	5	@ $C_1 = 1\text{nF}$
Frequency bandwidth(-3dB)	BW	kHz		250		@ $C_1 = 1\text{nF}$
Output noise	V_{no}	mV		2.1		@ $C_1 = 1\text{nF}$

Electrical data

AN1V 100 PB31

※ With $T_A = 25^\circ\text{C}$, $V_C = 3.3\text{V}$, $R_L = 10\text{k}\Omega$, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal rms current	I_{PN}	A	-100		100	
Supply voltage	V_C	V	3	3.3	3.6	
Output voltage	V_{OUT}	V	$V_{OUT} = V_{OV} + G_{th} \times I_P \times (V_C/3.3)$			
Electrical offset voltage	V_{OV}	V		$V_{CC}/2$		
Theoretical sensitivity	G_{th}	mV/A		13.2		
Current consumption	I_C	mA		8	11	
Load resistance	R_L	k Ω	5.1			
Load capacitor	C_1	nF		1	10	
Power filter capacitor	C_2	nF		100		
Performance data						
Sensitivity error	ε_G	%	-1		1	
Temperature of G	TCG	%	-1.5		1.5	@ $T_A = -40^\circ\text{C} \sim 150^\circ\text{C}$
Electrical offset current	V_{OE}	mV	-10	± 5	10	@ $V_C = 3.3\text{V}$ also $I_P = 0\text{A}$
Electrical offset error of temperature drift	TCV_{OE}	mV	-10		10	@ $T_A = -40^\circ\text{C} \sim 150^\circ\text{C}$
Hysteresis offset voltage	V_{OM}	mV		4		@ $V_C = 3.3\text{V}$, after $\pm I_{PN}$
Linearity error	ε_L	% of I_{PN}	-1		1	Exclusive of V_{OE}
Accuracy @ I_{PN}	X	% of I_{PN}	-2		2	@ $T_A = -40^\circ\text{C} \sim 150^\circ\text{C}$
Response time@ 90% of I_{PN}	t_r	μs		2.5	5	@ $C_1 = 1\text{nF}$
Frequency bandwidth(-3dB)	BW	kHz		250		@ $C_1 = 1\text{nF}$
Output noise	V_{no}	mV		1.8		@ $C_1 = 1\text{nF}$

Electrical data

AN1V 150 PB31

※ With $T_A = 25^\circ\text{C}$, $V_C = 3.3\text{V}$, $R_L = 10\text{k}\Omega$, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal rms current	I_{PN}	A	-150		150	
Supply voltage	V_C	V	3	3.3	3.6	
Output voltage	V_{OUT}	V	$V_{OUT} = V_{OV} + G_{th} \times I_P \times (V_C/3.3)$			
Electrical offset voltage	V_{OV}	V		$V_{CC}/2$		
Theoretical sensitivity	G_{th}	mV/A		8.8		
Current consumption	I_C	mA		8	11	
Load resistance	R_L	k Ω	5.1			
Load capacitor	C_1	nF		1	10	
Power filter capacitor	C_2	nF		100		
Performance data						
Sensitivity error	ε_G	%	-1		1	
Temperature of G	TCG	%	-1.5		1.5	@ $T_A = -40^\circ\text{C} \sim 125^\circ\text{C}$
Electrical offset current	V_{OE}	mV	-10	± 5	10	@ $V_C = 3.3\text{V}$ also $I_P = 0\text{A}$
Electrical offset error of temperature drift	TCV_{OE}	mV	-10		10	@ $T_A = -40^\circ\text{C} \sim 125^\circ\text{C}$
Hysteresis offset voltage	V_{OM}	mV		4		@ $V_C = 3.3\text{V}$, after $\pm I_{PN}$
Linearity error	ε_L	% of I_{PN}	-1		1	Exclusive of V_{OE}
Accuracy @ I_{PN}	X	% of I_{PN}	-2		2	@ $T_A = -40^\circ\text{C} \sim 125^\circ\text{C}$
Response time@ 90% of I_{PN}	t_r	μs		2.5	5	@ $C_1 = 1\text{nF}$
Frequency bandwidth(-3dB)	BW	kHz		250		@ $C_1 = 1\text{nF}$
Output noise	V_{no}	mV		1		@ $C_1 = 1\text{nF}$

Electrical data

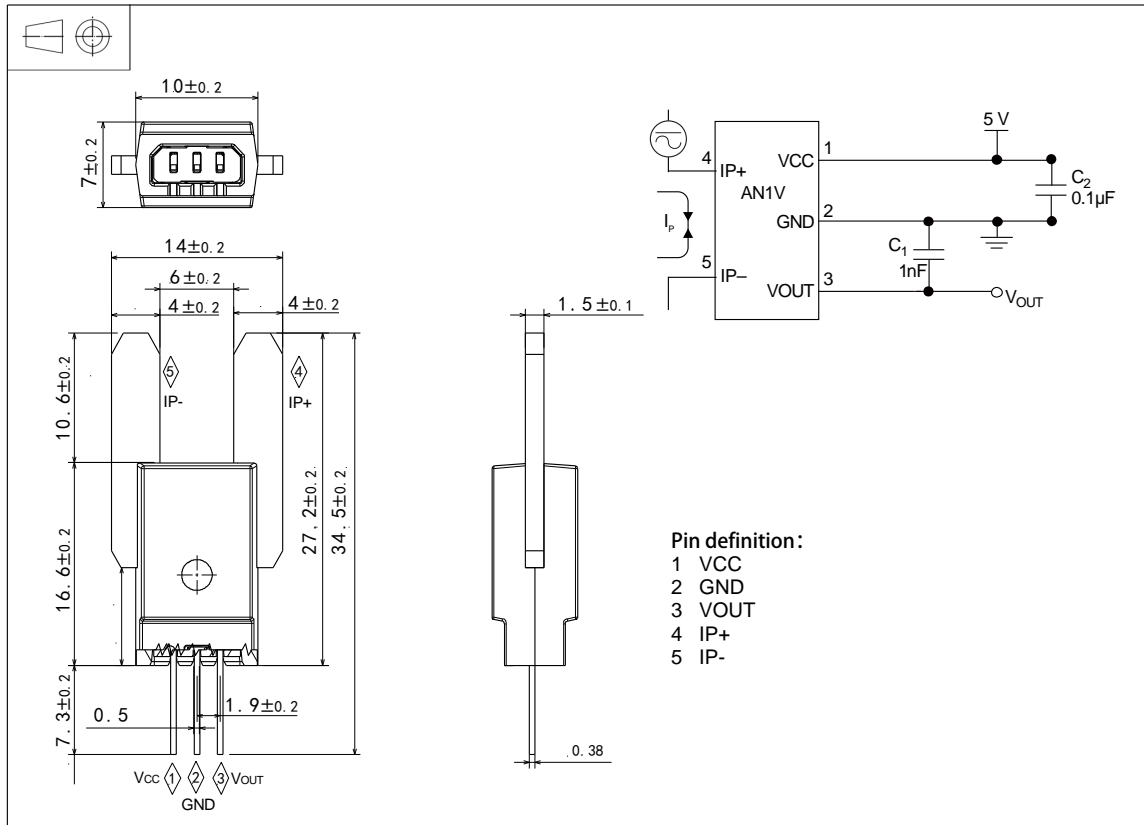
AN1V 200 PB31

※ With $T_A = 25^\circ\text{C}$, $V_C = 3.3\text{V}$, $R_L = 10\text{k}\Omega$, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal rms current	I_{PN}	A	-200		200	
Supply voltage	V_C	V	3	3.3	3.6	
Output voltage	V_{OUT}	V	$V_{OUT} = V_{OV} + G_{th} \times I_P \times (V_C/3.3)$			
Electrical offset voltage	V_{OV}	V		$V_{CC}/2$		
Theoretical sensitivity	G_{th}	mV/A		6.6		
Current consumption	I_C	mA		8	11	
Load resistance	R_L	k Ω	5.1			
Load capacitor	C_1	nF		1	10	
Power filter capacitor	C_2	nF		100		
Performance data						
Sensitivity error	ε_G	%	-1		1	
Temperature of G	TCG	%	-1.5		1.5	@ $T_A = -40^\circ\text{C} \sim 85^\circ\text{C}$
Electrical offset current	V_{OE}	mV	-10	± 5	10	@ $V_C = 3.3\text{V}$ also $I_P = 0\text{A}$
Electrical offset error of temperature drift	TCV_{OE}	mV	-10		10	@ $T_A = -40^\circ\text{C} \sim 85^\circ\text{C}$
Hysteresis offset voltage	V_{OM}	mV		4		@ $V_C = 3.3\text{V}$, after $\pm I_{PN}$
Linearity error	ε_L	% of I_{PN}	-1		1	Exclusive of V_{OE}
Accuracy @ I_{PN}	X	% of I_{PN}	-2		2	@ $T_A = -40^\circ\text{C} \sim 85^\circ\text{C}$
Response time@ 90% of I_{PN}	t_r	μs		2.5	5	@ $C_1 = 1\text{nF}$
Frequency bandwidth(-3dB)	BW	kHz		250		@ $C_1 = 1\text{nF}$
Output noise	V_{no}	mV		0.9		@ $C_1 = 1\text{nF}$

AN1V PB31

Dimensions(Unit mm)



Mechanical characteristics

- ◇ General tolerance ± 0.3 mm
- ◇ Conductor and pin material Red copper with tin plating

Remarks

- ◇ When I_p flows in the direction of pin4 to pin5, V_{out} increase.