优尚

YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

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General Description

The NK-AP2114 is CMOS process low dropout linear regulator with enable function, the regulator delivers a guaranteed 1A (Min) continuous load current.

The NK-AP2114 features low power consumption.

The NK-AP2114 is available in 1.2V, 1.5V, 1.8V, 2.5V and 3.3V regulator output and 0.8V to 5V adjustable output, and available in excellent output accuracy ±1.5%, it is also available in an excellent load regulation and line regulation performance.

The NK-AP2114 is available in standard packages of SOT-223, TO-252-2(1), TO-252-2(3), TO-252-2(4), TO-263-3, SOIC-8 and PSOP-8.

Features

- Output Voltage Accuracy: ±1.5%
- Output Current: 1A (Min)
- Fold-back Short Current Protection: 50mA
- Low Dropout Voltage (3.3V): 450mV (Typ) @I_{OUT}=1A
- Stable with 4.7μF Flexible Cap: Ceramic, Tantalum and Aluminum Electrolytic
- Excellent Line Regulation: 0.02%/V (Typ), 0.1%/V (Max) @ I_{OUT}=30mA
- Excellent Load Regulation: 0.2%A (Typ) @ I_{OUT}=1mA to 1A
- Low Quiescent Current: 60μA (1.2V/1.5V/1.8V /2.5V/ADJ)
- Low Output Noise: 30μV_{RMS}
- PSRR: 68dB @ Freq=1KHz(1.2V/1.5V/1.8V /ADJ)
- OTSD Protection
- Operating Temperature Range: -40°C to 85°C
- ESD: MM 400V, HBM 4000V

Applications

- LCD Monitor
- LCD TV
- STB

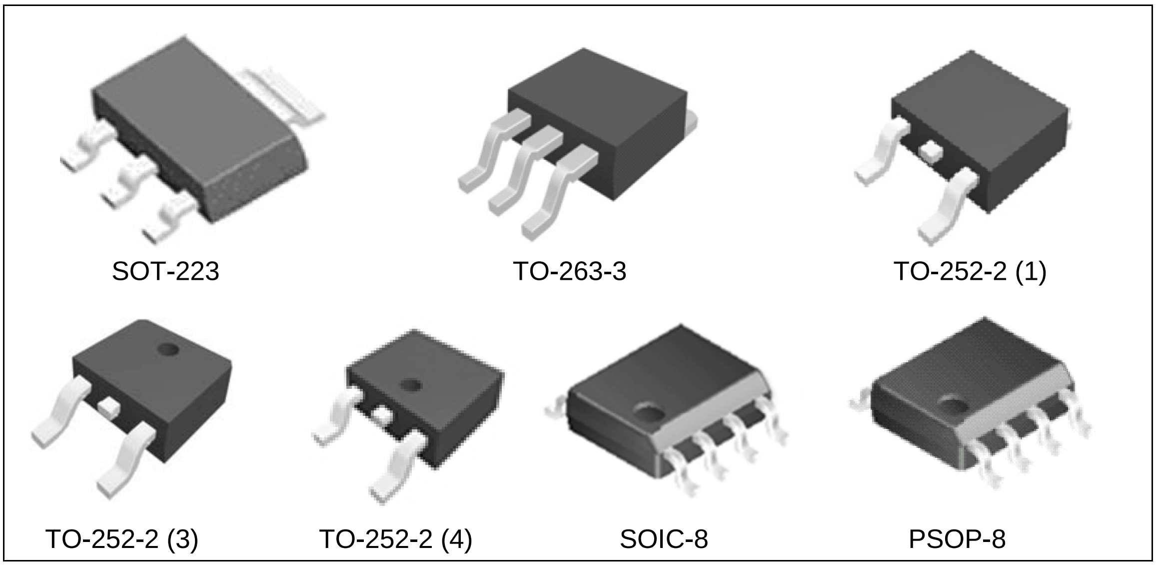


Figure 1. Package Types of NK-AP2114

Pin Configuration

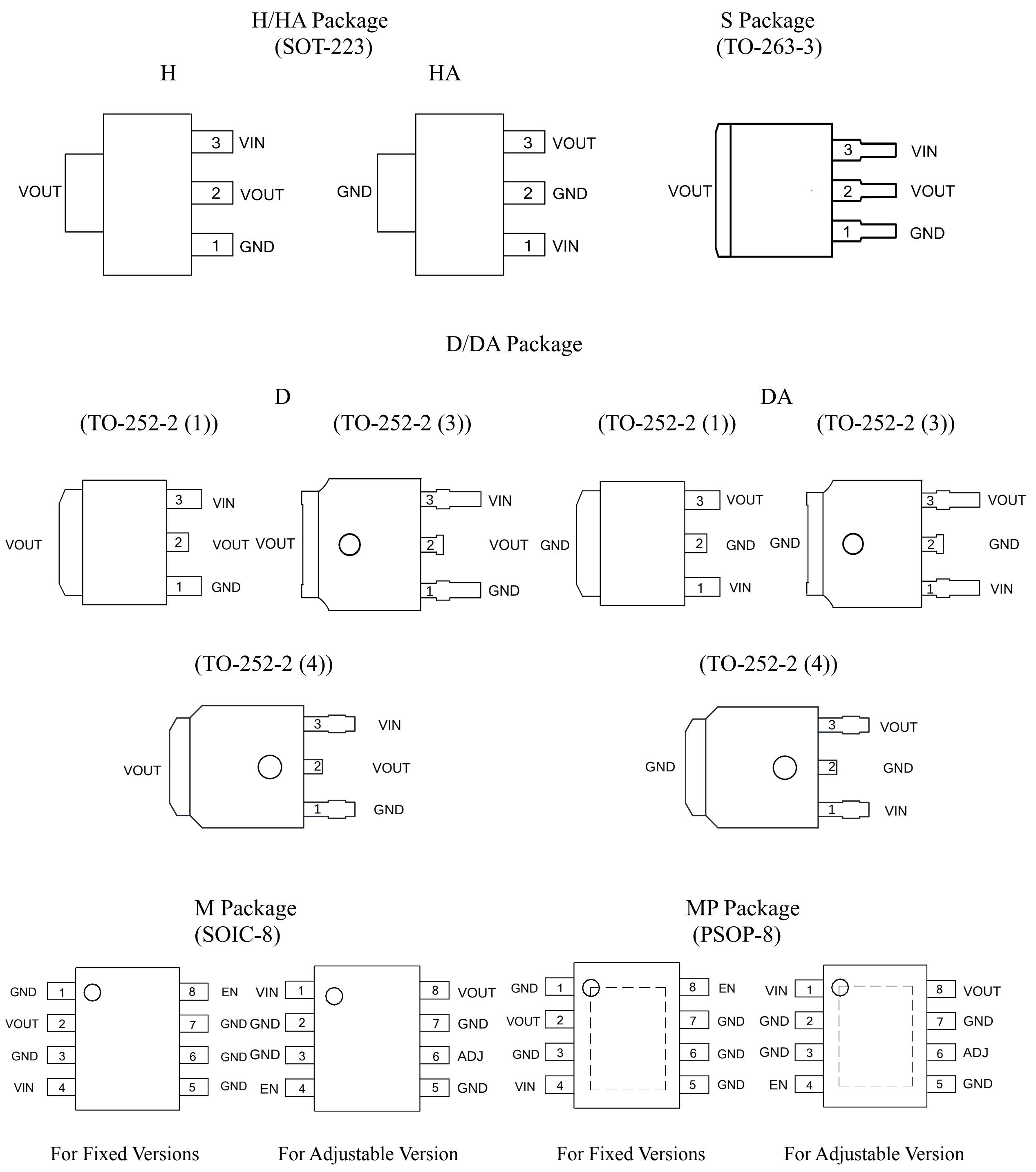
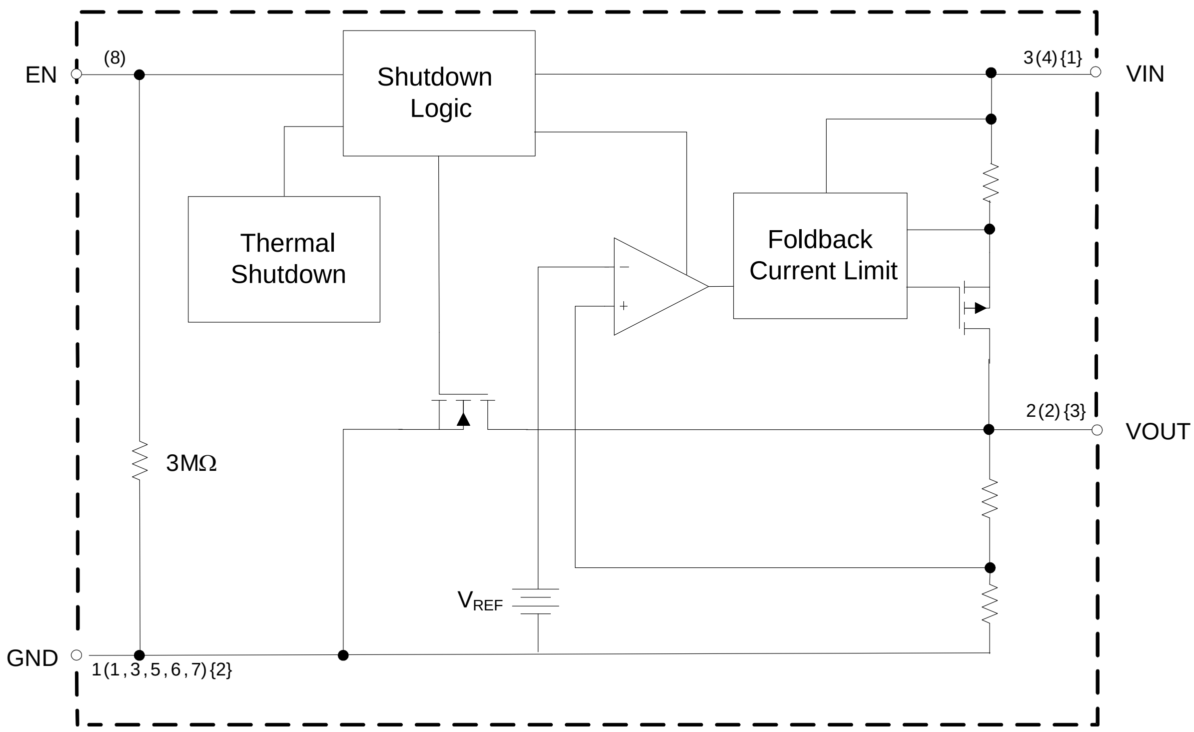


Figure 2. Pin Configuration of NK-AP2114 (Top View)

Pin Descriptions

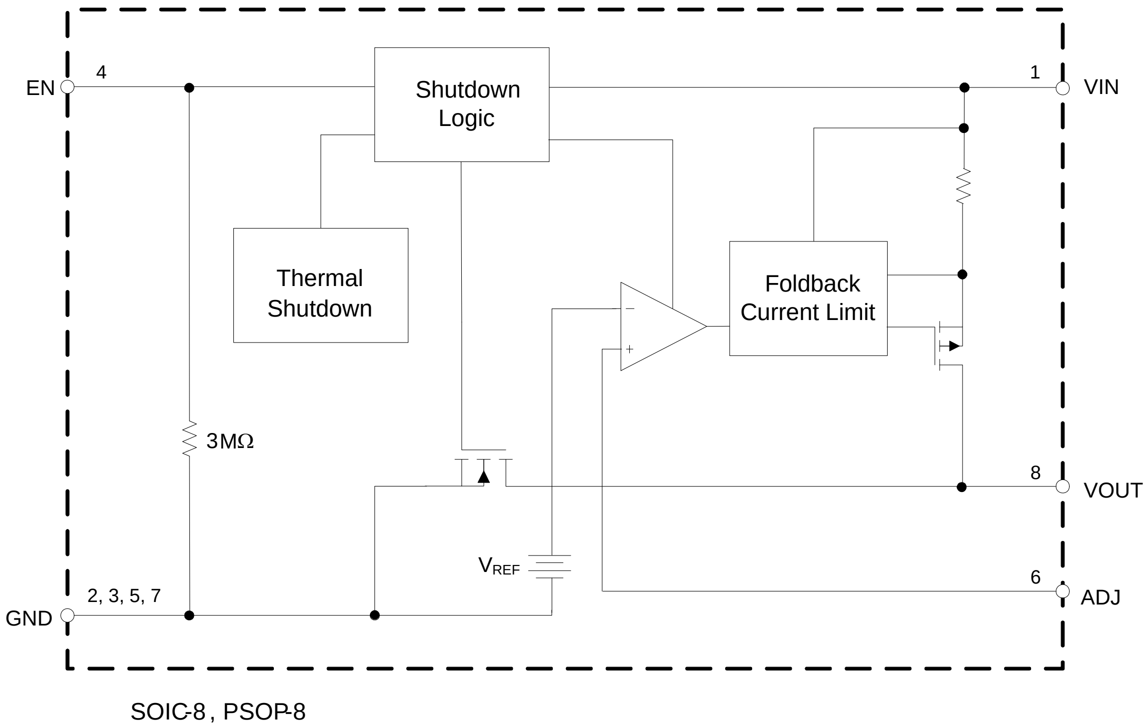
Pin Number				Pin Name	Function
SOT-223 (H), TO-263-3, TO-252-2 (1) (D) TO-252-2 (3) (D) TO-252-2 (4) (D)	SOT-223 (HA), TO-252-2 (1) (DA) TO-252-2 (3) (DA) TO-252-2 (4) (DA)	SOIC-8, PSOP-8 (Fixed)	SOIC-8, PSOP-8 (ADJ)		
1	2	1, 3, 5, 6, 7	2, 3, 5, 7	GND	Ground
2	3	2	8	VOUT	Regulated Output
3	1	4	1	VIN	Input Voltage Pin
		8	4	EN	Chip Enable, H–Normal Work, L– Shutdown Output
			6	ADJ	Adjust Output

Functional Block Diagram



A(B){C}
A: SOT-223(H), TO-263-3, TO-252-2(1)/(3)/(4)(D)
B: SOIC-8, PSOP-8
C: SOT-223 (HA), TO-252-2(1)/(3)/(4)(DA)

Functional Block Diagram (Continued)



For ADJ Version

Figure 3. Functional Block Diagram of NK-AP2114

Absolute Maximum Ratings (Note 1)

Parameter	Symbol	Value		Unit
Power Supply Voltage	V_{IN}	6.5		V
Operating Junction Temperature Range	T_J	150		ºC
Storage Temperature Range	T_{STG}	-65 to 150		ºC
Lead Temperature (Soldering, 10sec)	T_{LEAD}	260		ºC
Thermal Resistance （Junction to Ambient）(No Heatsink)	θ_{JA}	SOIC-8	144	°C/W
		PSOP-8	143	
		SOT-223	128	
		TO-252-2 (1)/ TO-252-2 (3)/ TO-252-2 (4)	90	
		TO-263-3	73	
ESD (Machine Model)		400		V
ESD (Human Body Model)		4000		V

Note 1: Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “Recommended Operating Conditions” is not implied. Exposure to “Absolute Maximum Ratings” for extended periods may affect device reliability.

Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
Supply Voltage	V_{IN}	2.5	6.0	V
Operating Ambient Temperature Range	T_A	-40	85	°C

Electrical Characteristics

NK-AP2114-1.2 Electrical Characteristics (Note 2)

(V_{IN}=2.5V, C_{IN}=4.7µF (Ceramic), C_{OUT}=4.7µF (Ceramic), Typical T_A= 25°C, **Bold** typeface applies over -40°C≤T_A≤85°C ranges, unless otherwise specified (Note 3))

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Voltage	V_{OUT}	V_{IN}=2.5V, 1mA ≤ I_{OUT} ≤ 30mA		V_{OUT} ×98.5%	1.2	V_{OUT} ×101.5%	V
Input Voltage	V_{IN}					6.0	V
Maximum Output Current	$I_{OUT(MAX)}$	V_{IN}=2.5V, V_{OUT}=1.182V to 1.218V		1			A
Load Regulation	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle I_{OUT}}$	V_{IN}=2.5V, 1mA ≤ I_{OUT} ≤1A			0.2	1	%/A
Line Regulation	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle V_{IN}}$	2.5V≤V_{IN}≤6V, I_{OUT}=30mA		-0.1	0.02	0.1	%/V
Dropout Voltage	V_{DROP}	I_{OUT}=1.0A			1200	1300	mV
Quiescent Current	I_Q	V_{IN}=2.5V, I_{OUT}=0mA			60	75	µA
Power Supply Rejection Ratio	PSRR	Ripple 1Vp-p V_{IN}=2.5V, I_{OUT}=100mA	f=100Hz		68		dB
			f=1KHz		68		
Output Voltage Temperature Coefficient	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle T}$	I_{OUT}=30mA, T_A =-40°C to 85°C			**±30**		ppm/°C
Short Current Limit	I_{SHORT}	V_{OUT}=0V			50		mA
RMS Output Noise	V_{NOISE}	10Hz ≤ f ≤100kHz (No Load)			30		µV_{RMS}
V_{EN} High Voltage	V_{IH}	Enable logic high, regulator on		1.5			V
V_{EN} Low Voltage	V_{IL}	Enable logic low, regulator off				0.4	
Standby Current	I_{STD}	V_{IN}=2.5V, V_{EN} in OFF mode			0.01	1.0	µA
Start-up Time	t_S	No Load			20		µs
EN Pull Down Resistor	R_{PD}				3.0		MΩ
V_{OUT} Discharge Resistor	R_{DCHG}	Set EN pin at Low			60		Ω
Thermal Shutdown Temperature	T_{OTSD}				160		°C
Thermal Shutdown Hysteresis	T_{HYOTSD}				25		
Thermal Resistance (Junction to Case)	θ_{JC}	SOIC-8			74.6		°C/W
		PSOP-8			43.7		
		SOT-223			50.9		
		TO-252-2 (1) /(3) /(4)			35		
		TO-263-3			22		

Note 2: To prevent the Short Circuit Current protection feature from being prematurely activated, the input voltage must be applied before a current source load is applied.
Note 3: Production testing at T_A=25°C. Over temperature specifications guaranteed by design only.

Electrical Characteristics (Continued)

NK-AP2114-1.5 Electrical Characteristics (Note 2)

(V_{IN}=2.5V, C_{IN}=4.7μF (Ceramic), C_{OUT}=4.7μF (Ceramic), Typical T_A= 25°C, **Bold** typeface applies over -40°C≤T_A≤85°C ranges, unless otherwise specified (Note 3))

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Voltage	V_{OUT}	V_{IN}=2.5V, 1mA ≤ I_{OUT} ≤ 30mA		V_{OUT} ×98.5%	1.5	V_{OUT} ×101.5%	V
Input Voltage	V_{IN}					6.0	V
Maximum Output Current	$I_{OUT(MAX)}$	V_{IN}=2.5V, V_{OUT}=1.478V to 1.523V		1			A
Load Regulation	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle I_{OUT}}$	V_{IN}=2.5V, 1mA ≤ I_{OUT} ≤1A			0.2	1	%/A
Line Regulation	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle V_{IN}}$	2.5V≤V_{IN}≤6V, I_{OUT}=30mA		-0.1	0.02	0.1	%/V
Dropout Voltage	V_{DROP}	I_{OUT}=1.0A			800	1000	mV
Quiescent Current	I_Q	V_{IN}=2.5V, I_{OUT}=0mA			60	75	μA
Power Supply Rejection Ratio	PSRR	Ripple 1Vp-p V_{IN}=2.5V, I_{OUT}=100mA	f=100Hz		68		dB
			f=1KHz		68		
Output Voltage Temperature Coefficient	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle T}$	I_{OUT}=30mA, T_A =-40°C to 85°C			**±30**		ppm/°C
Short Current Limit	I_{SHORT}	V_{OUT}=0V			50		mA
RMS Output Noise	V_{NOISE}	10Hz ≤ f ≤100kHz (No Load)			30		μV_{RMS}
V_{EN} High Voltage	V_{IH}	Enable logic high, regulator on		1.5			V
V_{EN} Low Voltage	V_{IL}	Enable logic low, regulator off				0.4	
Standby Current	I_{STD}	V_{IN}=2.5V, V_{EN} in OFF mode			0.01	1.0	μA
Start-up Time	t_S	No Load			20		μs
EN Pull Down Resistor	R_{PD}				3.0		MΩ
V_{OUT} Discharge Resistor	R_{DCHG}	Set EN pin at Low			60		Ω
Thermal Shutdown Temperature	T_{OTSD}				160		°C
Thermal Shutdown Hysteresis	T_{HYOTSD}				25		
Thermal Resistance (Junction to Case)	θ_{JC}	SOIC-8			74.6		°C/W
		PSOP-8			43.7		
		SOT-223			50.9		
		TO-252-2 (1) /(3) /(4)			35		
		TO-263-3			22		

Note 2: To prevent the Short Circuit Current protection feature from being prematurely activated, the input voltage must be applied before a current source load is applied.
Note 3: Production testing at T_A=25°C. Over temperature specifications guaranteed by design only.

Electrical Characteristics (Continued)

NK-AP2114-1.8 Electrical Characteristics (Note 2)

(V_{IN}=2.8V, C_{IN}=4.7µF (Ceramic), C_{OUT}=4.7µF (Ceramic), Typical T_A= 25°C, **Bold** typeface applies over -40°C≤T_A≤85°C ranges, unless otherwise specified (Note 3))

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Voltage	V_{OUT}	V_{IN}=2.8V, 1mA ≤ I_{OUT} ≤ 30mA		V_{OUT} ×98.5%	1.8	V_{OUT} ×101.5%	V
Maximum Output Current	$I_{OUT(MAX)}$	V_{IN}=2.8V, V_{OUT}=1.773V to 1.827V		1.0			A
Load Regulation	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle I_{OUT}}$	V_{IN}=2.8V, 1mA ≤ I_{OUT} ≤1A			0.2	1.0	%/A
Line Regulation	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle V_{IN}}$	2.8V≤V_{IN}≤6V, I_{OUT}=30mA		-0.1	0.02	0.1	%/V
Dropout Voltage	V_{DROP}	I_{OUT}=1.0A			500	700	mV
Quiescent Current	I_Q	V_{IN}=2.8V, I_{OUT}=0mA			60	75	µA
Power Supply Rejection Ratio	PSRR	Ripple 1Vp-p V_{IN}=2.8V, I_{OUT}=100mA	f=100Hz		68		dB
			f=1KHz		68		
Output Voltage Temperature Coefficient	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle T}$	I_{OUT}=30mA, T_A =-40°C to 85°C			**±30**		ppm/°C
Short Current Limit	I_{SHORT}	V_{OUT}=0V			50		mA
RMS Output Noise	V_{NOISE}	10Hz ≤ f ≤100kHz (No load)			30		µV_{RMS}
V_{EN} High Voltage	V_{IH}	Enable logic high, regulator on		1.5			V
V_{EN} Low Voltage	V_{IL}	Enable logic low, regulator off				0.4	
Standby Current	I_{STD}	V_{IN}=2.8V, V_{EN} in OFF mode			0.01	1.0	µA
Start-up Time	t_S	No Load			20		µs
EN Pull Down Resistor	R_{PD}				3.0		MΩ
V_{OUT} Discharge Resistor	R_{DCHG}	Set EN pin at Low			60		Ω
Thermal Shutdown Temperature	T_{OTSD}				160		°C
Thermal Shutdown Hysteresis	T_{HYOTSD}				25		
Thermal Resistance (Junction to Case)	θ_{JC}	SOIC-8			74.6		°C /W
		PSOP-8			43.7		
		SOT-223			50.9		
		TO-252-2 (1) /(3) /(4)			35		
		TO-263-3			22		

Note 2: To prevent the Short Circuit Current protection feature from being prematurely activated, the input voltage must be applied before a current source load is applied.
Note 3: Production testing at T_A=25°C. Over temperature specifications guaranteed by design only.

Electrical Characteristics (Continued)

NK-AP2114-2.5 Electrical Characteristics (Note 2)

(V_{IN}=3.5V, C_{IN}=4.7μF (Ceramic), C_{OUT}=4.7μF (Ceramic), Typical T_A= 25°C, **Bold** typeface applies over -40°C≤T_A≤85°C ranges, unless otherwise specified (Note 3))

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Voltage	V_{OUT}	V_{IN}=3.5V, 1mA ≤ I_{OUT} ≤ 30mA		V_{OUT} ×98.5%	2.5	V_{OUT} ×101.5%	V
Maximum Output Current	$I_{OUT(MAX)}$	V_{IN}=3.5V, V_{OUT}=2.463V to 2.537V		1.0			A
Load Regulation	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle I_{OUT}}$	Vout=2.5V, V_{IN}=Vout+1V 1mA ≤ I_{OUT} ≤1A			0.2	1.0	%/A
Line Regulation	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle V_{IN}}$	3.5V≤V_{IN}≤6V, I_{OUT}=30mA		-0.1	0.02	0.1	%/V
Dropout Voltage	V_{DROP}	I_{OUT} =1A			450	750	mV
Quiescent Current	I_Q	V_{IN}=3.5V, I_{OUT}=0mA			60	80	μA
Power Supply Rejection Ratio	PSRR	Ripple 1Vp-p V_{IN}=3.5V, I_{OUT}=100mA	f=100Hz		65		dB
			f=1KHz		65		
Output Voltage Temperature Coefficient	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle T}$	I_{OUT}=30mA			**±30**		ppm/°C
Short Current Limit	I_{SHORT}	V_{OUT}=0V			50		mA
RMS Output Noise	V_{NOISE}	10Hz ≤ f ≤100kHz			30		μV_{RMS}
V_{EN} High Voltage	V_{IH}	Enable logic high, regulator on		1.5			V
V_{EN} Low Voltage	V_{IL}	Enable logic low, regulator off				0.4	
Standby Current	I_{STD}	V_{IN}=3.5V, V_{EN} in OFF mode			0.01	1.0	μA
Start-up Time	t_S	No Load			20		μs
EN Pull Down Resistor	R_{PD}				3.0		MΩ
V_{OUT} Discharge Resistor	R_{DCHG}	Set EN pin at Low			60		Ω
Thermal Shutdown Temperature	T_{OTSD}				160		°C
Thermal Shutdown Hysteresis	T_{HYOTSD}				25		
Thermal Resistance (Junction to Case)	θ_{JC}	SOIC-8			74.6		°C /W
		PSOP-8			43.7		
		SOT-223			50.9		
		TO-252-2 (1) /(3) /(4)			35		
		TO-263-3			22		

Note 2: To prevent the Short Circuit Current protection feature from being prematurely activated, the input voltage must be applied before a current source load is applied.
Note 3: Production testing at T_A=25°C. Over temperature specifications guaranteed by design only.

Electrical Characteristics (Continued)

NK-AP2114-3.3 Electrical Characteristics (Note 2)

(V_{IN}=4.3V, C_{IN}=4.7µF (Ceramic), C_{OUT}=4.7µF (Ceramic), Typical T_A= 25°C, **Bold** typeface applies over -40°C≤T_A≤85°C ranges, unless otherwise specified (Note 3))

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Voltage	V_{OUT}	V_{IN} =4.3V, 1mA ≤ I_{OUT} ≤ 30mA		V_{OUT} ×98.5%	3.3	V_{OUT} ×101.5%	V
Maximum Output Current	$I_{OUT(MAX)}$	V_{IN} =4.3V, V_{OUT}=3.25V to 3.35V		1.0			A
Load Regulation	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle I_{OUT}}$	V_{IN}=4.3V, 1mA ≤ I_{OUT} ≤1A			0.2	1.0	%/A
Line Regulation	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle V_{IN}}$	4.3V≤V_{IN}≤6V, I_{OUT}=30mA		-0.1	0.02	0.1	%/V
Dropout Voltage	V_{DROP}	I_{OUT}=1A			450	750	mV
Quiescent Current	I_Q	V_{IN}=4.3V, I_{OUT}=0mA			65	90	µA
Power Supply Rejection Ratio	PSRR	Ripple 1Vp-p V_{IN}=4.3V, I_{OUT}=100mA	f=100Hz		65		dB
			f=1KHz		65		
Output Voltage Temperature Coefficient	$\frac{\triangle V_{OUT}/V_{OUT}}{\triangle T}$	I_{OUT}=30mA			**±30**		ppm/°C
Short Current Limit	I_{SHORT}	V_{OUT}=0V			50		mA
RMS Output Noise	V_{NOISE}	10Hz ≤ f ≤100kHz (No load)			30		$µV_{RMS}$
V_{EN} High Voltage	V_{IH}	Enable logic high, regulator on		1.5			V
V_{EN} Low Voltage	V_{IL}	Enable logic low, regulator off				0.4	
Standby Current	I_{STD}	V_{IN}=4.3V, V_{EN} in OFF mode			0.01	1.0	µA
Start-up Time	t_S	No Load			20		µs
EN Pull Down Resistor	R_{PD}				3.0		MΩ
V_{OUT} Discharge Resistor	R_{DCHG}	Set EN pin at Low			60		Ω
Thermal Shutdown Temperature	T_{OTSD}				160		°C
Thermal Shutdown Hysteresis	T_{HYOTSD}				25		
Thermal Resistance (Junction to Case)	θ_{JC}	SOIC-8			74.6		°C/W
		PSOP-8			43.7		
		SOT-223			50.9		
		TO-252-2 (1) /(3) /(4)			35		
		TO-263-3			22		

Note 2: To prevent the Short Circuit Current protection feature from being prematurely activated, the input voltage must be applied before a current source load is applied.

Note 3: Production testing at T_A=25°C. Over temperature specifications guaranteed by design only.

Electrical Characteristics (Continued)

NK-AP2114-ADJ Electrical Characteristics (Note 2)

(V_{IN}=2.5V, C_{IN}=4.7μF (Ceramic), C_{OUT}=4.7μF (Ceramic), Typical T_A= 25°C, **Bold** typeface applies over -40°C≤T_A≤85°C ranges, unless otherwise specified (Note 3))

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Reference Voltage	V_{REF}	V_{IN}=2.5V, 1mA ≤ I_{OUT} ≤ 30mA		V_{REF} ×98.5%	0.8	V_{REF} ×101.5%	V
Input Voltage	V_{IN}					6.0	V
Maximum Output Current	$I_{OUT(MAX)}$	V_{IN}=2.5V, V_{OUT}= 0.788V to 0.812V		1			A
Load Regulation	$\frac{\Delta V_{OUT}/V_{OUT}}{\Delta I_{OUT}}$	V_{IN}=2.5V, 1mA ≤ I_{OUT} ≤1A			0.2	1	%/A
Line Regulation	$\frac{\Delta V_{OUT}/V_{OUT}}{\Delta V_{IN}}$	2.5V≤V_{IN}≤6V, I_{OUT}=30mA		-0.1	0.02	0.1	%/V
Quiescent Current	I_Q	V_{IN}=2.5V, I_{OUT}=0mA			60	75	μA
Power Supply Rejection Ratio	PSRR	Ripple 1Vp-p V_{IN}=2.5V, I_{OUT}=100mA	f=100Hz		68		dB
			f=1KHz		68		
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT}/V_{OUT}}{\Delta T}$	I_{OUT}=30mA, T_A =-40°C to 85°C			**±30**		ppm/°C
Short Current Limit	I_{SHORT}	V_{OUT}=0V			50		mA
RMS Output Noise	V_{NOISE}	10Hz ≤ f ≤100kHz (No Load)			30		μV_{RMS}
V_{EN} High Voltage	V_{IH}	Enable logic high, regulator on		1.5			V
V_{EN} Low Voltage	V_{IL}	Enable logic low, regulator off				0.4	
Standby Current	I_{STD}	V_{IN}=2.5V, V_{EN} in OFF mode			0.01	1.0	μA
Start-up Time	t_S	No Load			20		μs
EN Pull Down Resistor	R_{PD}				3.0		MΩ
V_{OUT} Discharge Resistor	R_{DCHG}	Set EN pin at Low			60		Ω
Thermal Shutdown Temperature	T_{OTSD}				160		°C
Thermal Shutdown Hysteresis	T_{HYOTSD}				25		
Thermal Resistance (Junction to Case)	θ_{JC}	SOIC-8			74.6		°C/W
		PSOP-8			43.7		

Note 2: To prevent the Short Circuit Current protection feature from being prematurely activated, the input voltage must be applied before a current source load is applied.
Note 3: Production testing at T_A=25°C. Over temperature specifications guaranteed by design only.

Typical Performance Characteristics

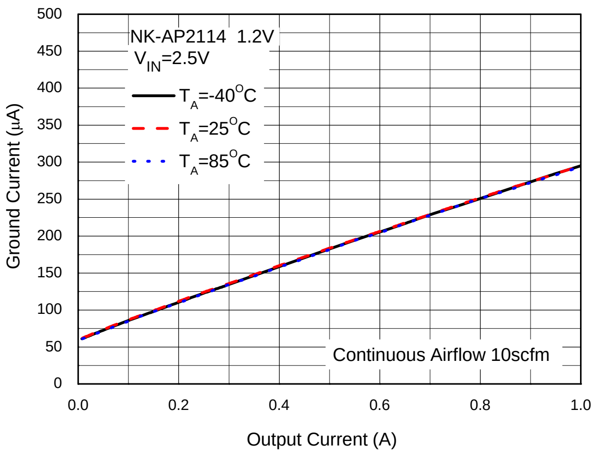


Figure 4. Ground Current vs. Output Current

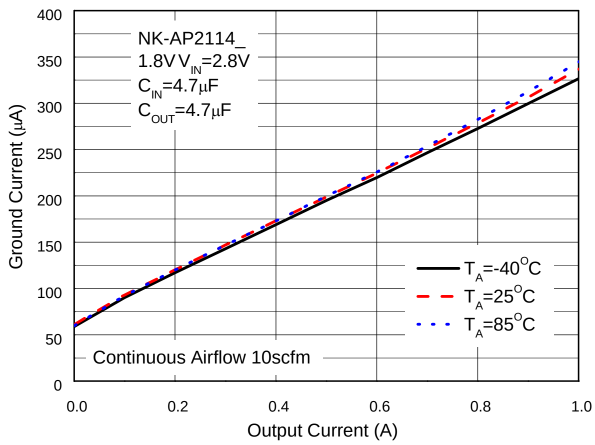


Figure 5. Ground Current vs. Output Current

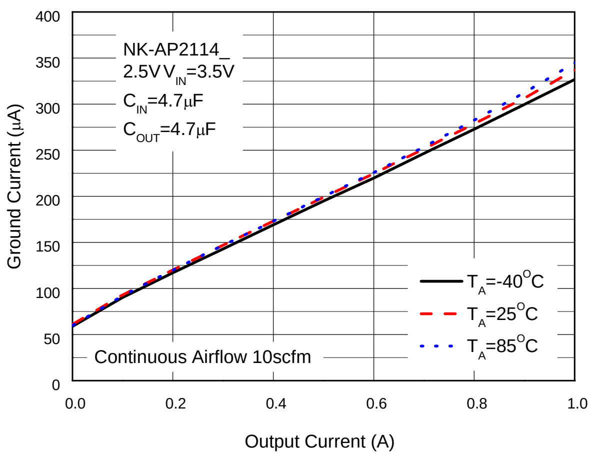


Figure 6. Ground Current vs. Output Current

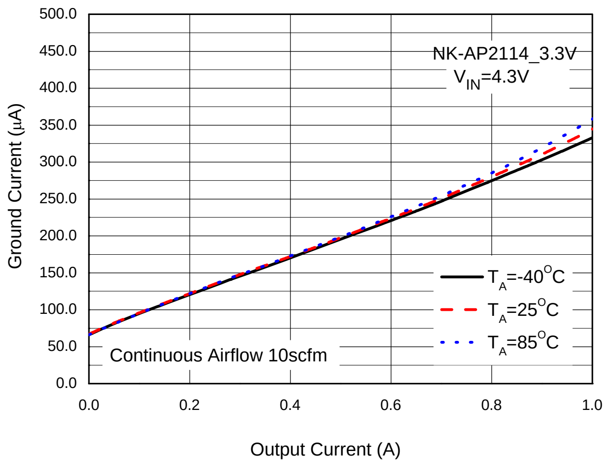


Figure 7. Ground Current vs. Output Current

Typical Performance Characteristics (Continued)

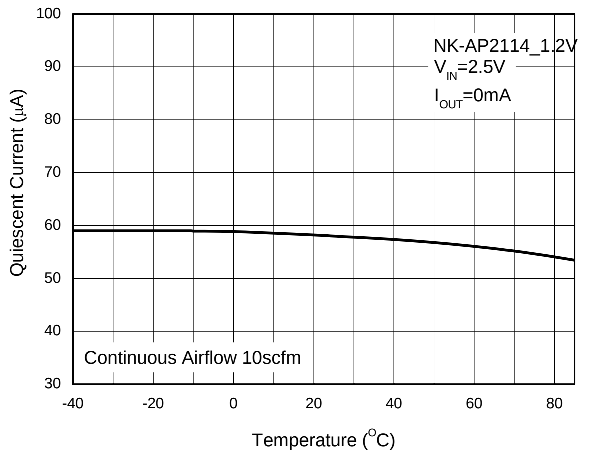


Figure 8. Quiescent Current vs. Temperature

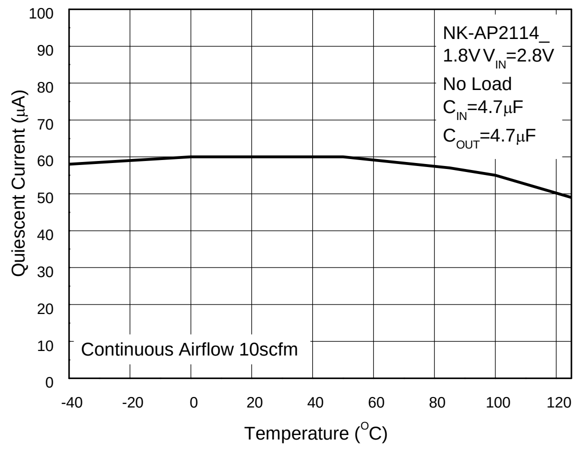


Figure 9. Quiescent Current vs. Temperature

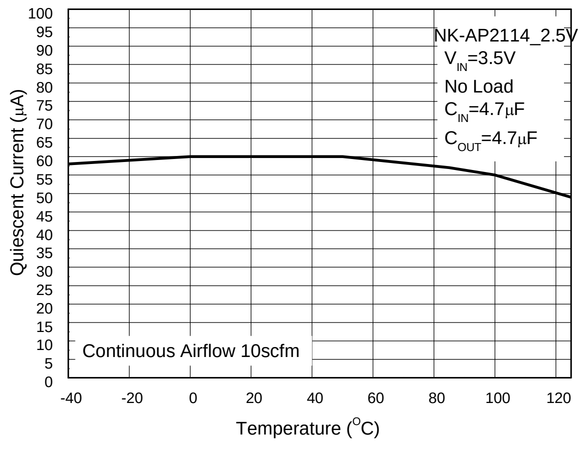


Figure 10. Quiescent Current vs. Temperature

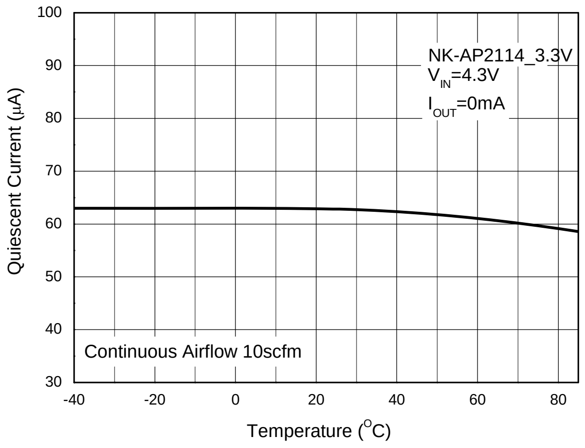


Figure 11. Quiescent Current vs. Temperature

Typical Performance Characteristics (Continued)

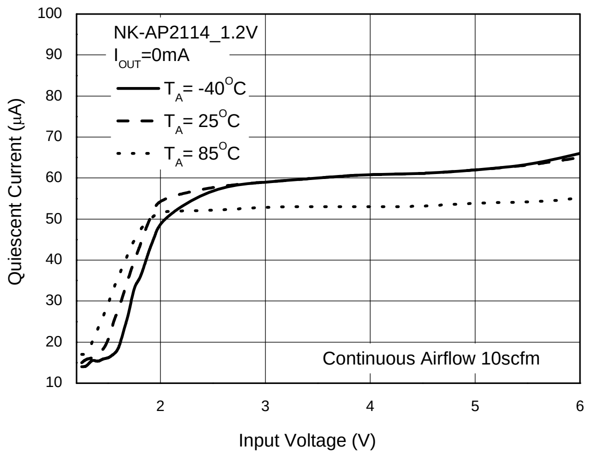


Figure 12. Quiescent Current vs. Input Voltage

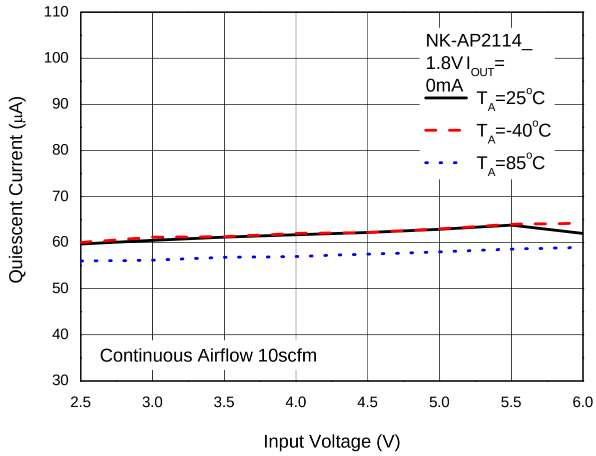


Figure 13. Quiescent Current vs. Input Voltage

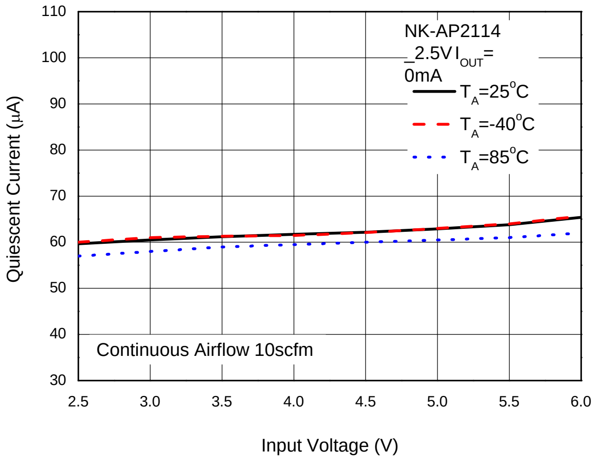


Figure 14. Quiescent Current vs. Input Voltage

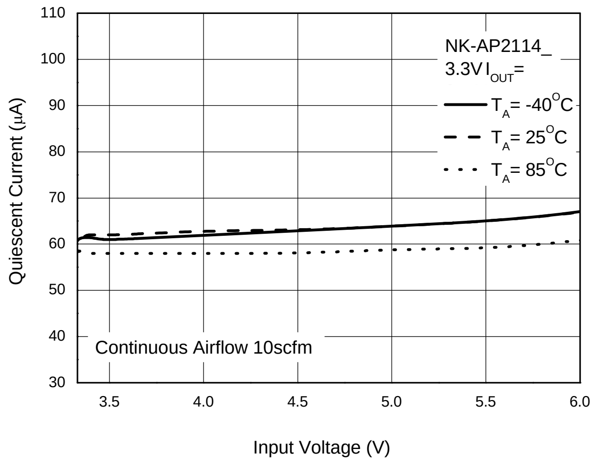


Figure 15. Quiescent Current vs. Input Voltage

Typical Performance Characteristics (Continued)

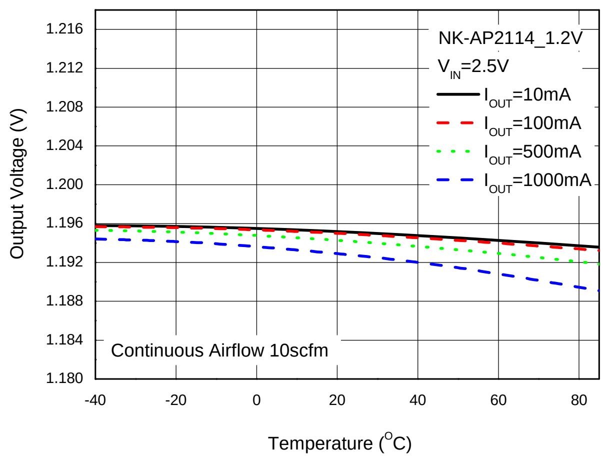


Figure 16. Output Voltage vs. Temperature

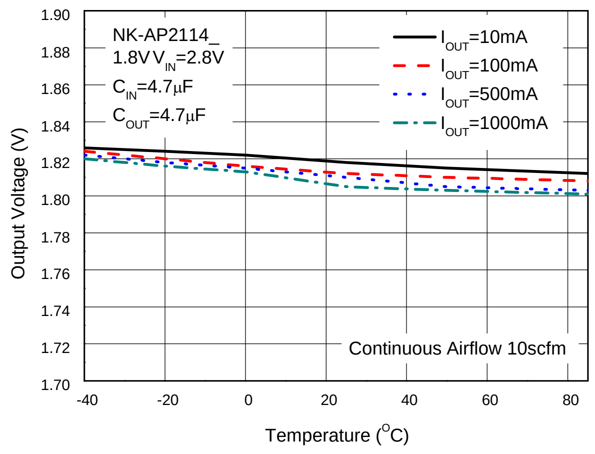


Figure 17. Output Voltage vs. Temperature

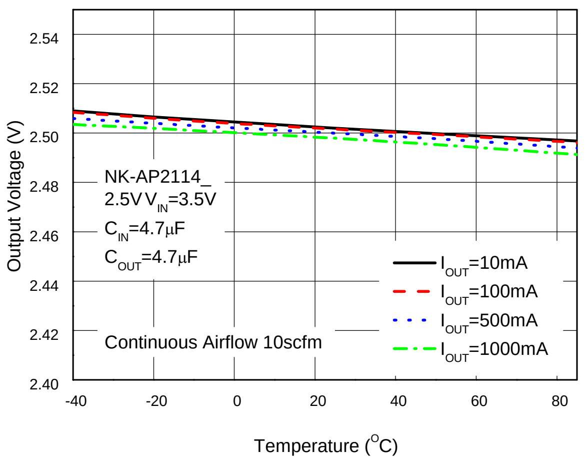


Figure 18. Output Voltage vs. Temperature

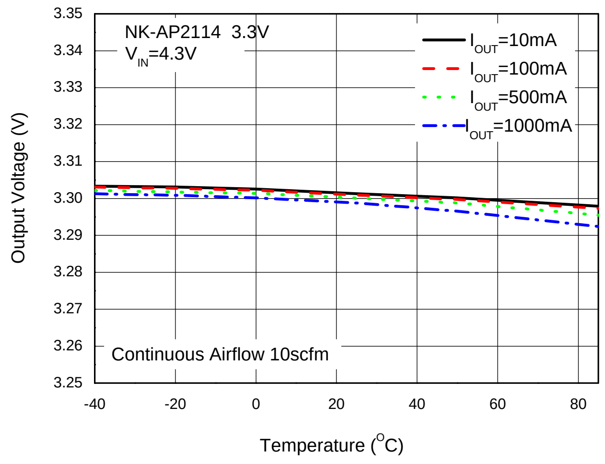


Figure 19. Output Voltage vs. Temperature

Typical Performance Characteristics (Continued)

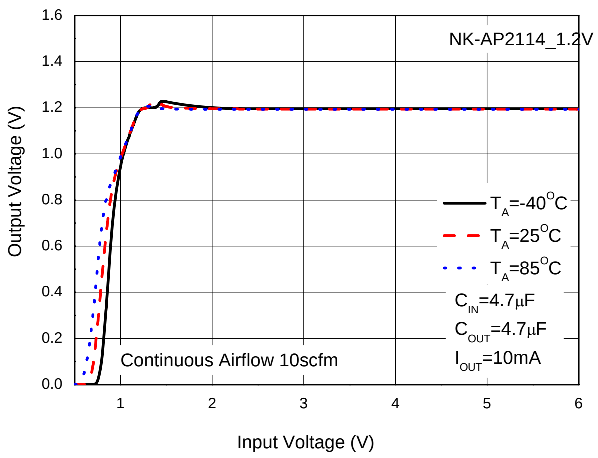


Figure 20. Output Voltage vs. Input Voltage

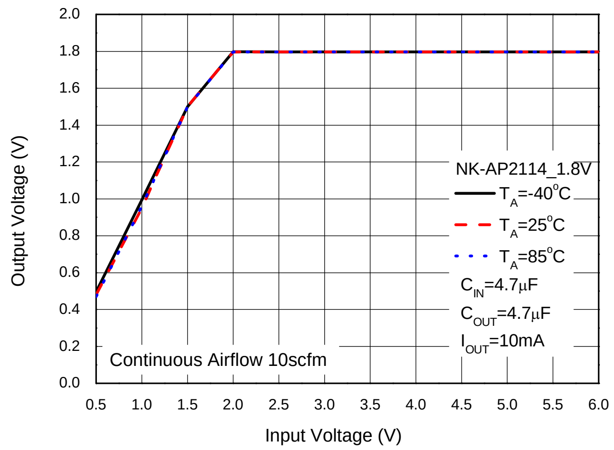


Figure 21. Output Voltage vs. Input Voltage

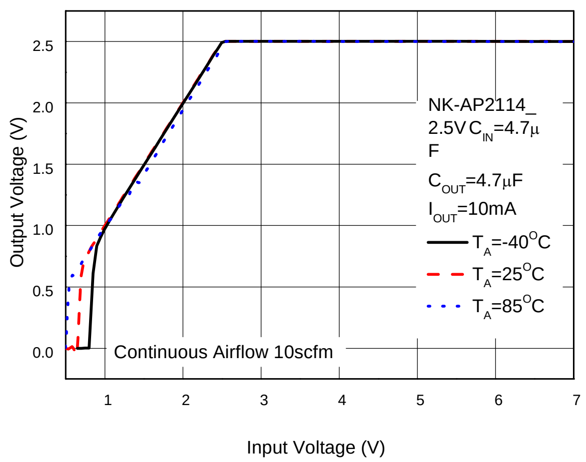


Figure 22. Output Voltage vs. Input Voltage

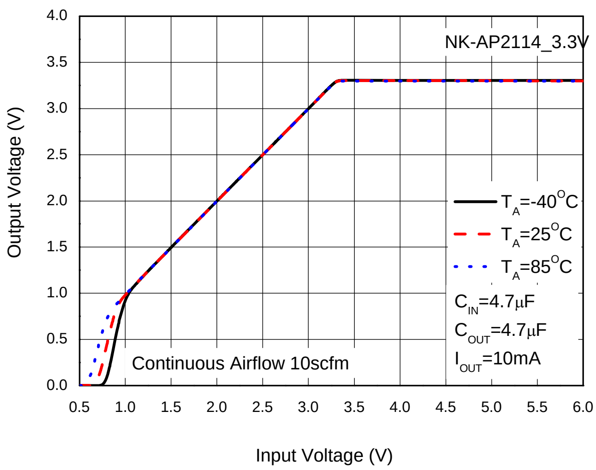


Figure 23. Output Voltage vs. Input Voltage

Typical Performance Characteristics (Continued)

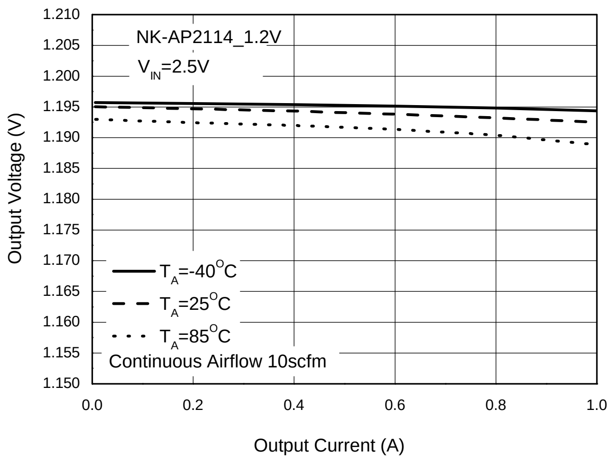


Figure 24. Output Voltage vs. Output Current

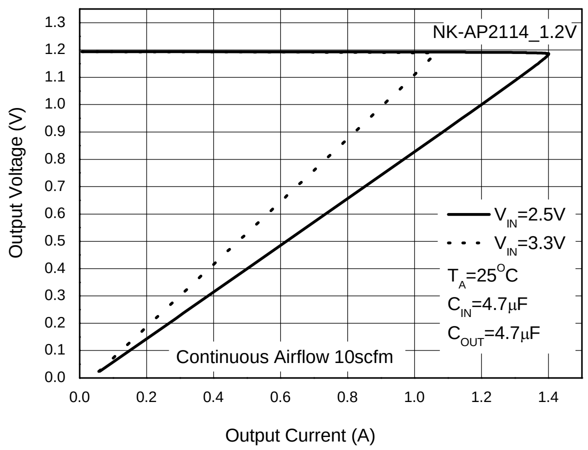


Figure 25. Output Voltage vs. Output Current

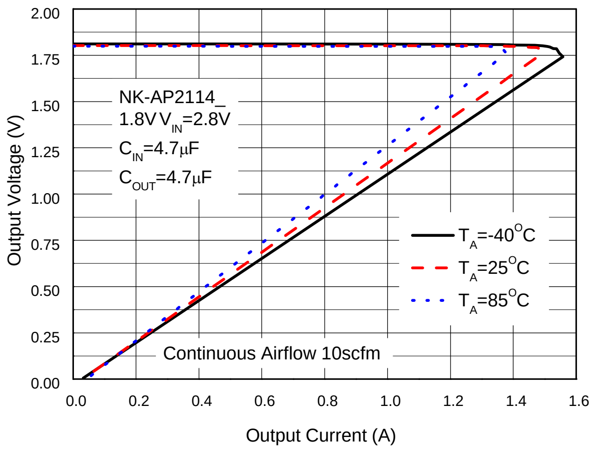


Figure 26. Output Voltage vs. Output Current

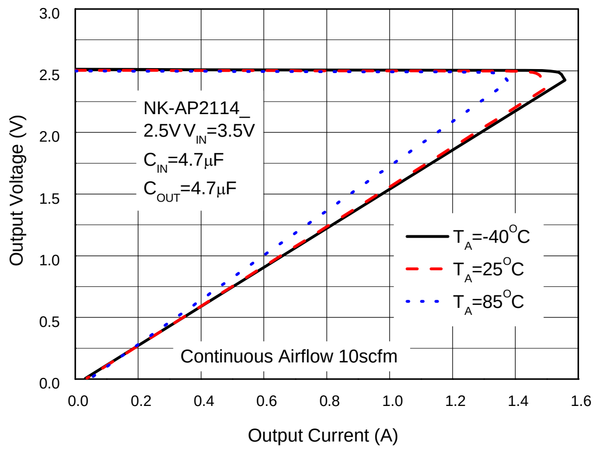


Figure 27. Output Voltage vs. Output Current

Typical Performance Characteristics (Continued)

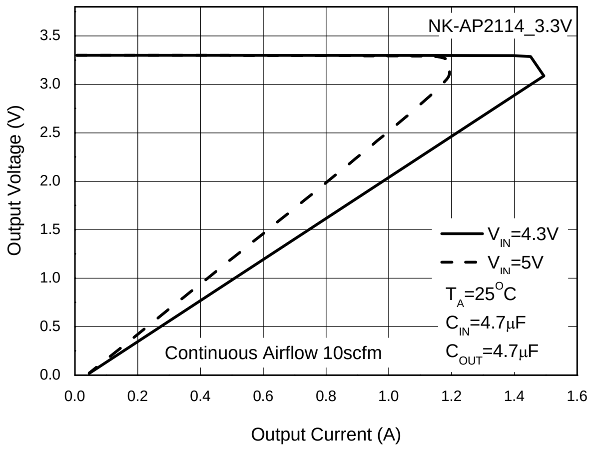


Figure 28. Output Voltage vs. Output Current

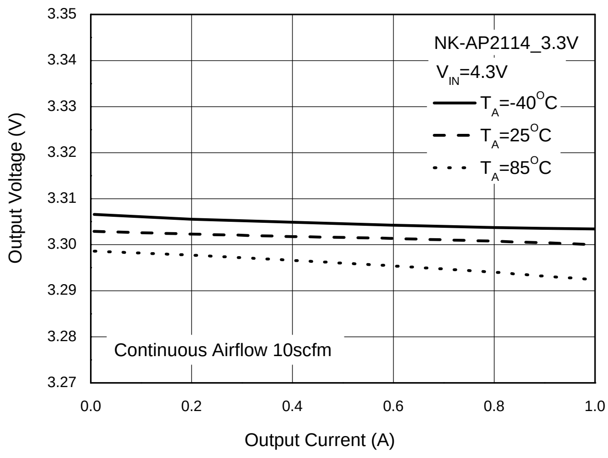


Figure 29. Output Voltage vs. Output Current

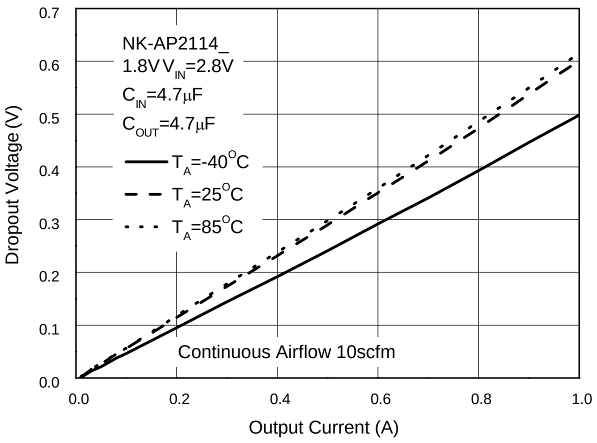


Figure 30. Dropout Voltage vs. Output Current

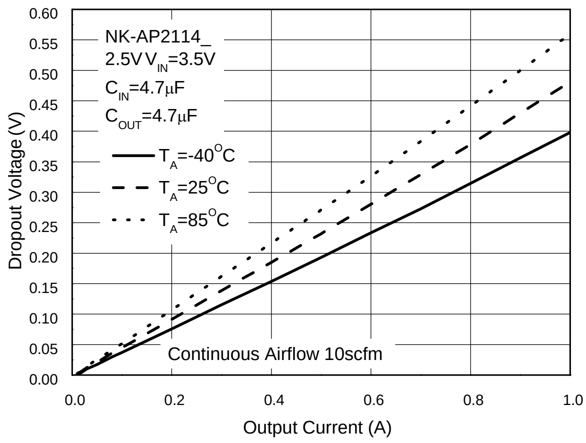


Figure 31. Dropout Voltage vs. Output Current

Typical Performance Characteristics (Continued)

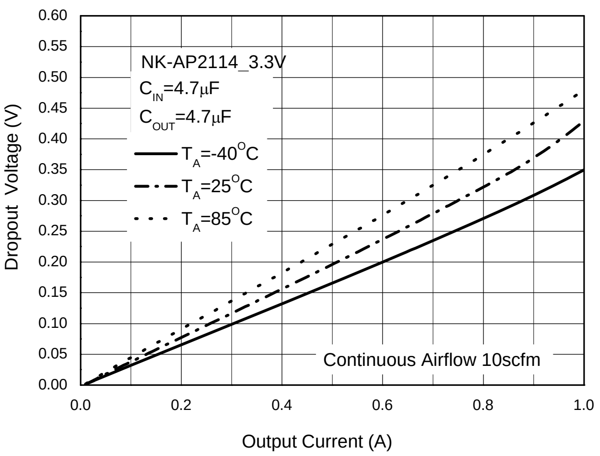


Figure 32. Dropout Voltage vs. Output Current

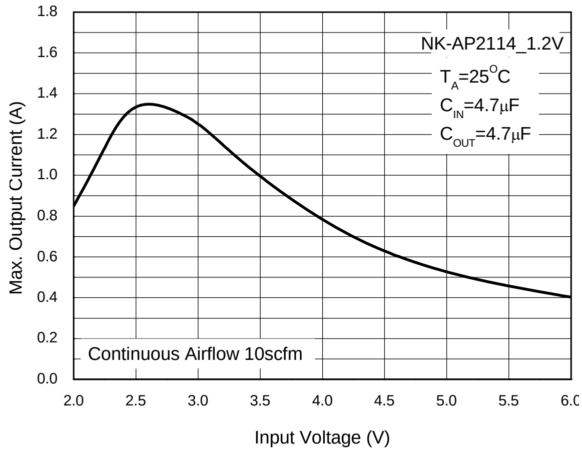


Figure 33. Max. Output Current vs. Input Voltage

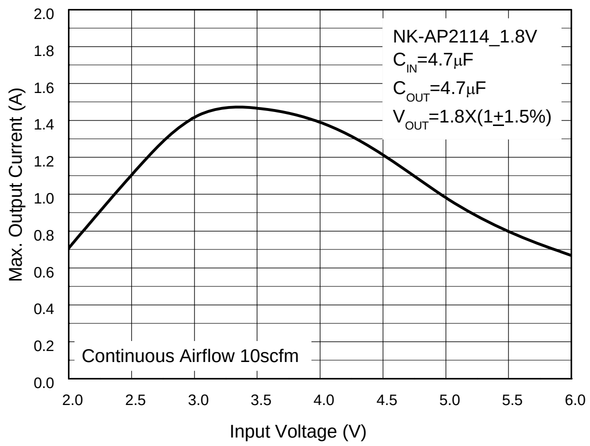


Figure 34. Max. Output Current vs. Input Voltage

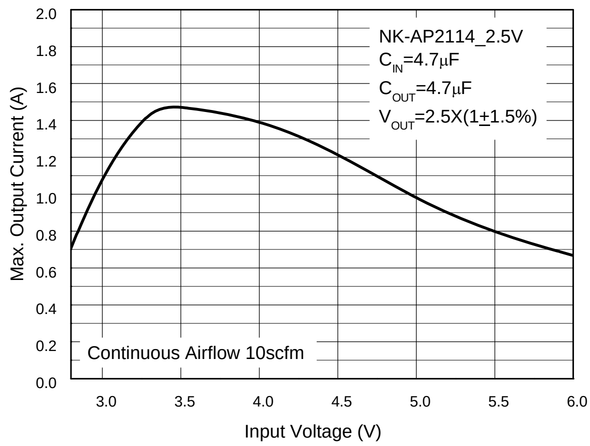


Figure 35. Max. Output Current vs. Input Voltage

Typical Performance Characteristics (Continued)

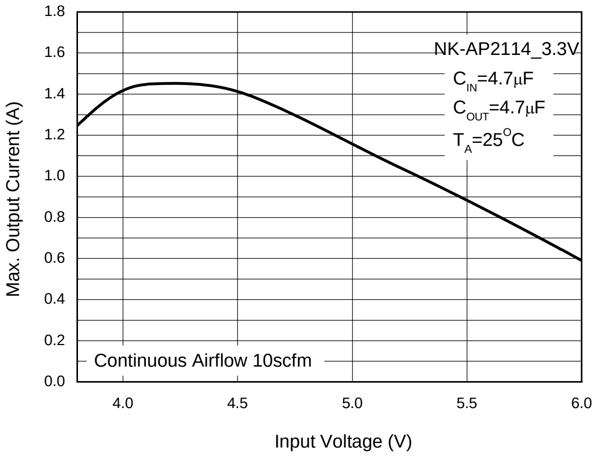


Figure 36. Max. Output Current vs. Input Voltage

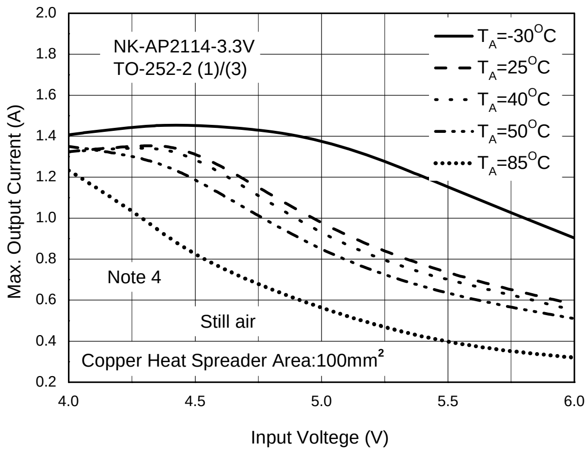


Figure 37. Max. Output Current vs. Input Voltage

Note 4: Considering power dissipation and thermal behavior, we suggest provide enough design margins in application design which are no less than 30% at least.

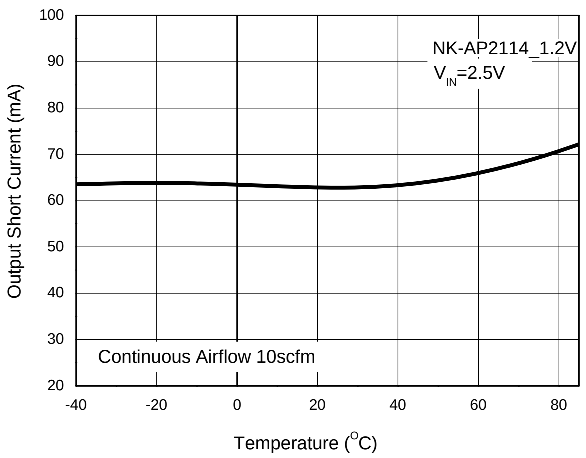


Figure 38. Output Short Current vs. Temperature

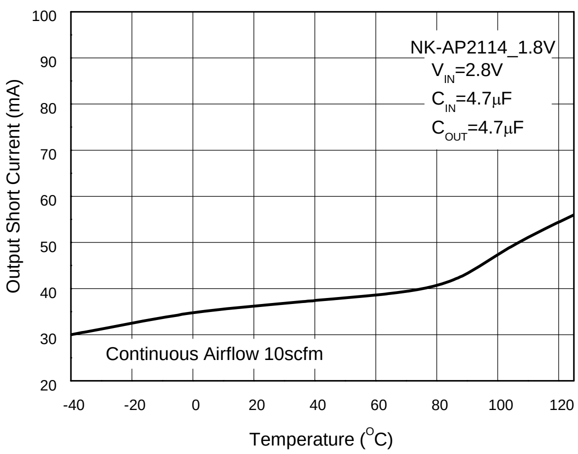


Figure 39. Output Short Current vs. Temperature

Typical Performance Characteristics (Continued)

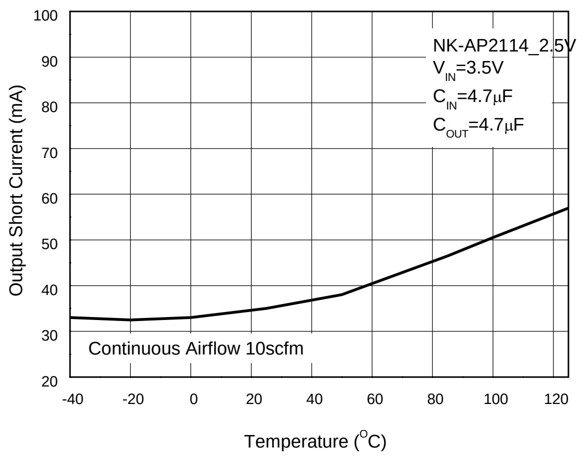


Figure 40. Output Short Current vs. Temperature

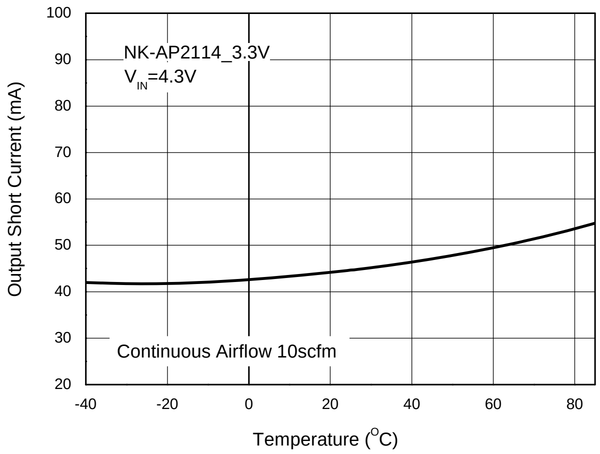


Figure 41. Output Short Current vs. Temperature

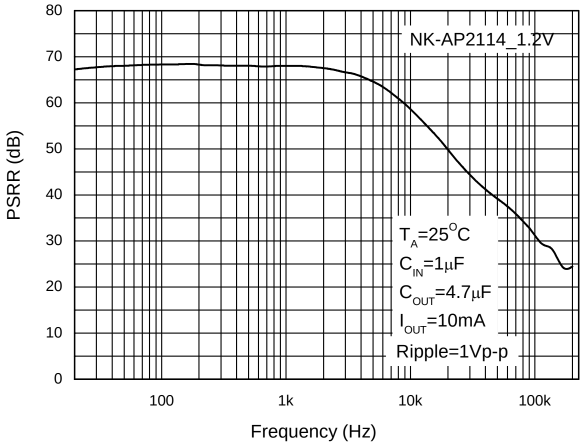


Figure 42. PSRR vs. Frequency

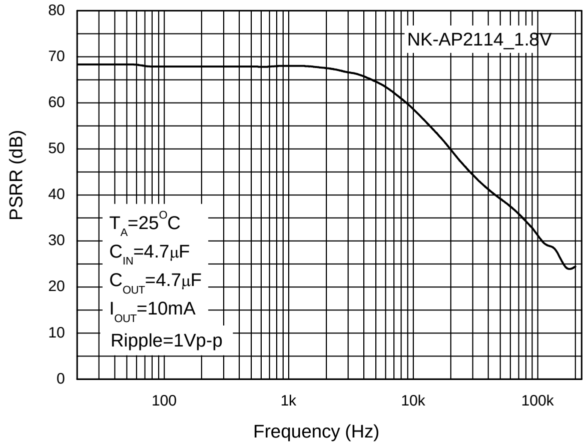


Figure 43. PSRR vs. Frequency

Typical Performance Characteristics (Continued)

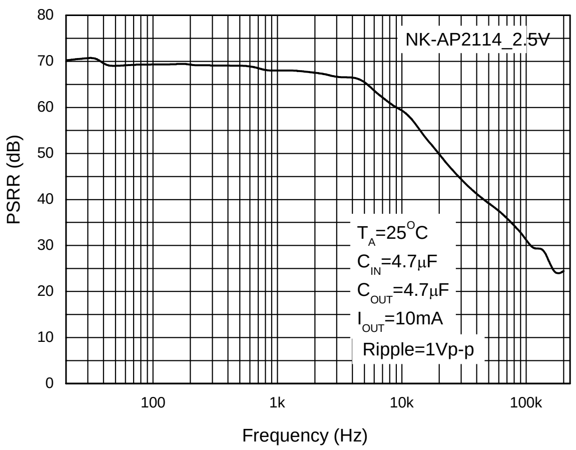


Figure 44. PSRR vs. Frequency

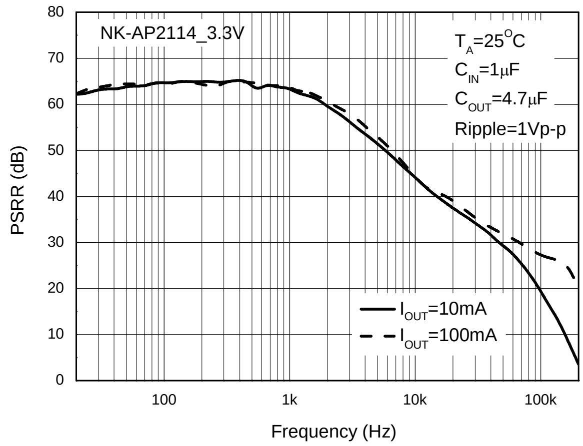


Figure 45. PSRR vs. Frequency

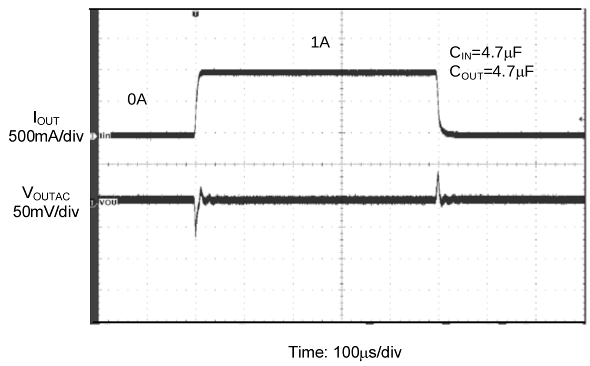
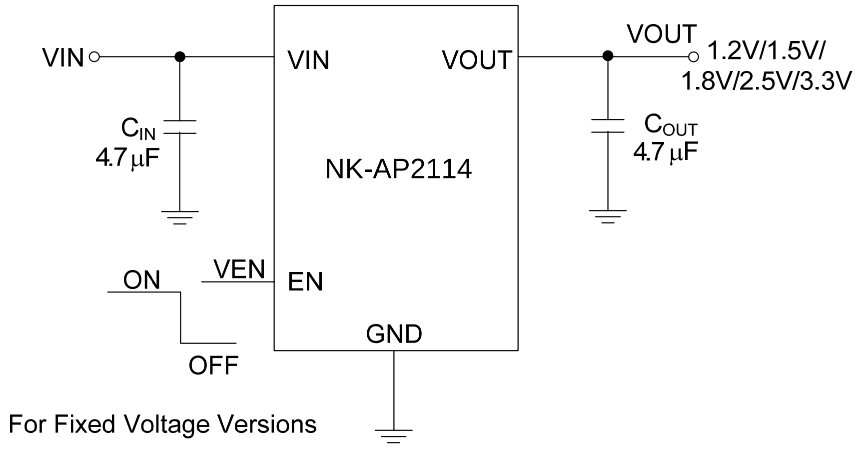


Figure 46. Load Transient

Typical Application



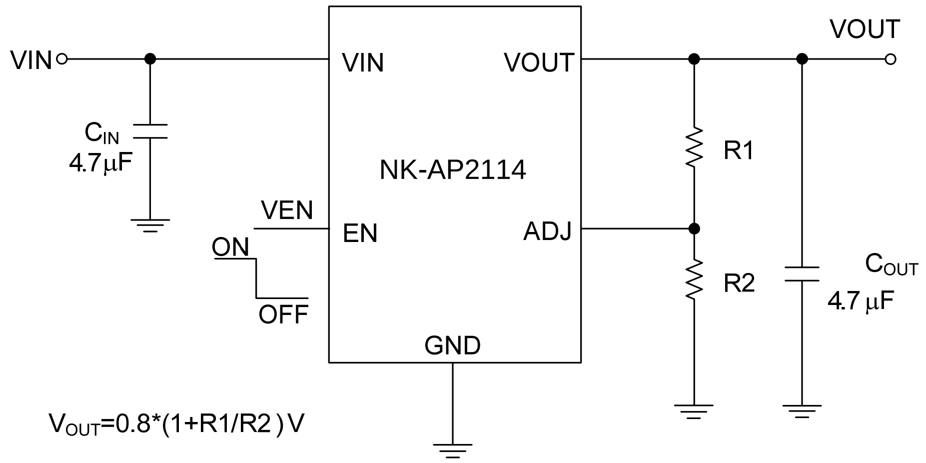
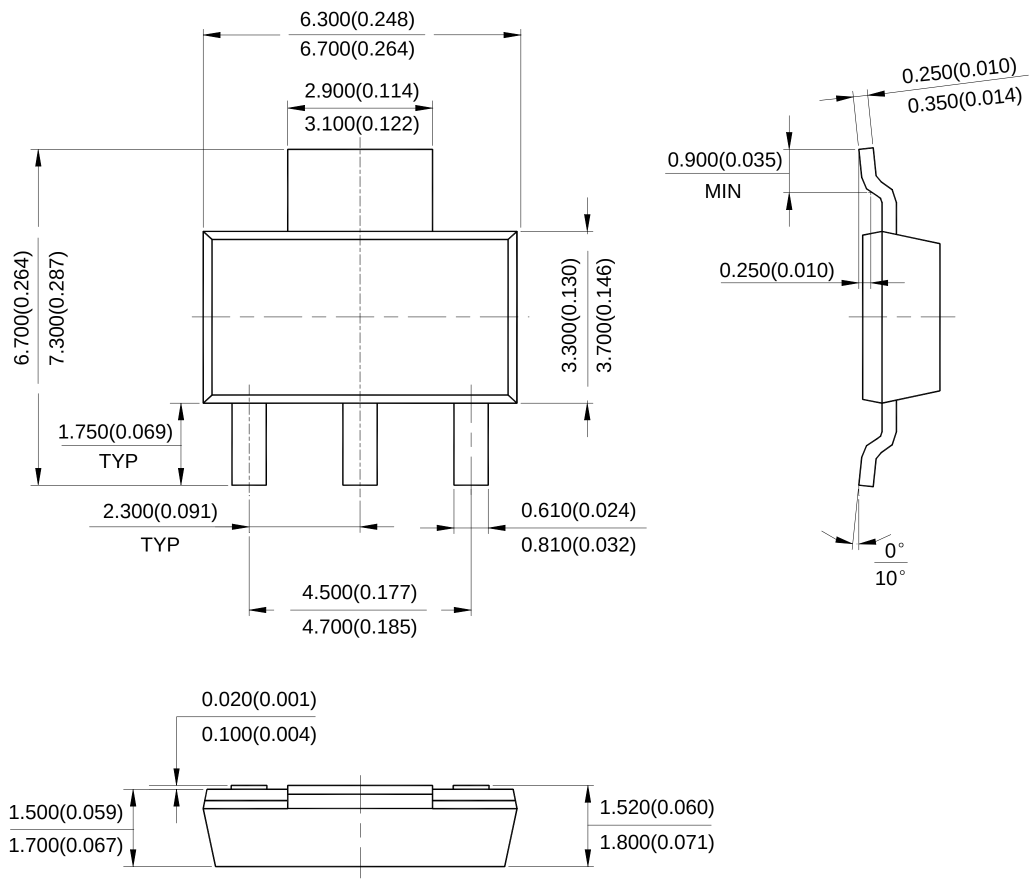


Figure 47. Typical Application of NK-AP2114

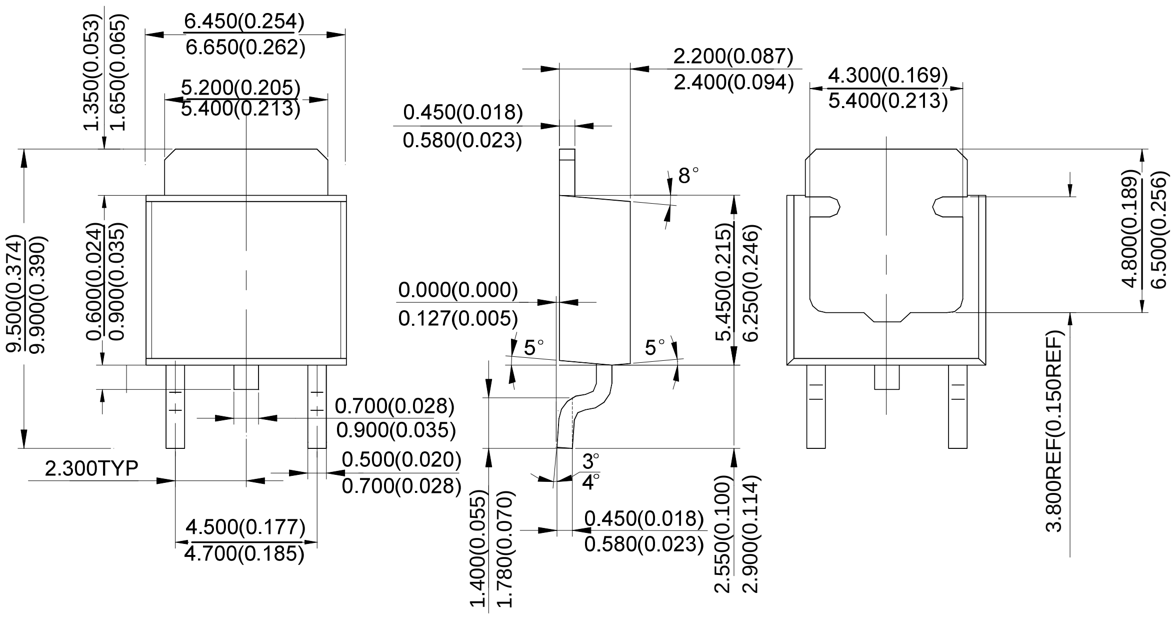
Mechanical Dimensions

SOT-223 **Unit: mm(inch)**



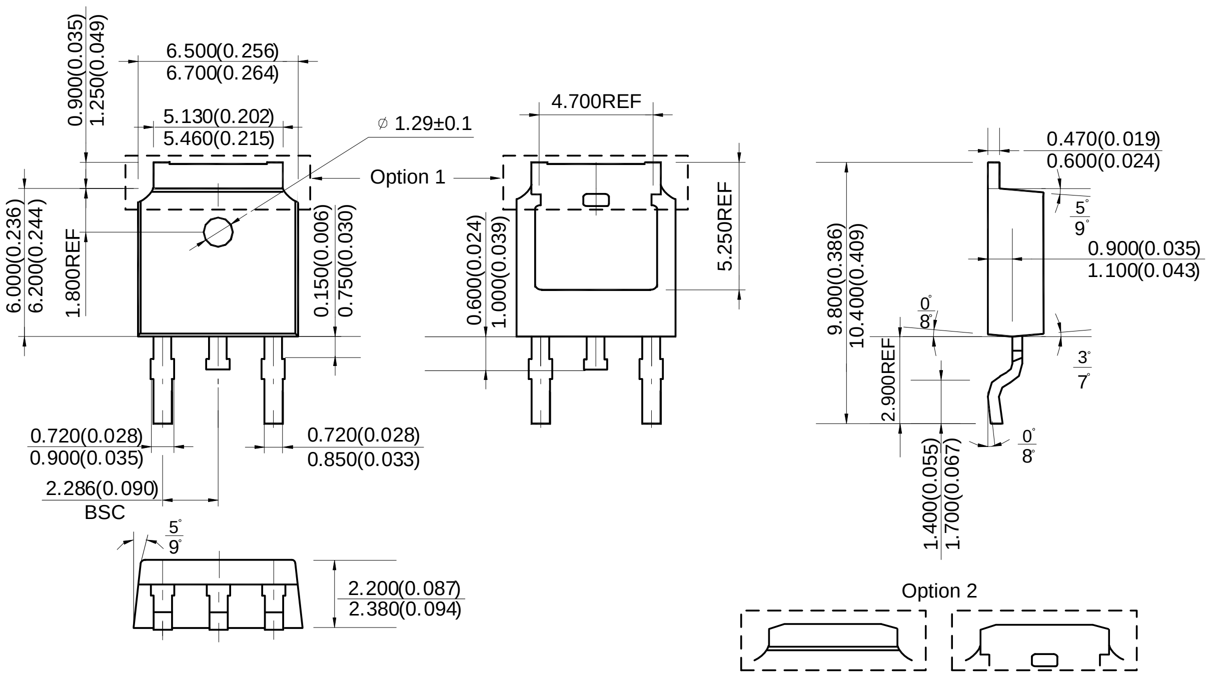
Mechanical Dimensions (Continued)

TO-252-2 (1) **Unit: mm(inch)**



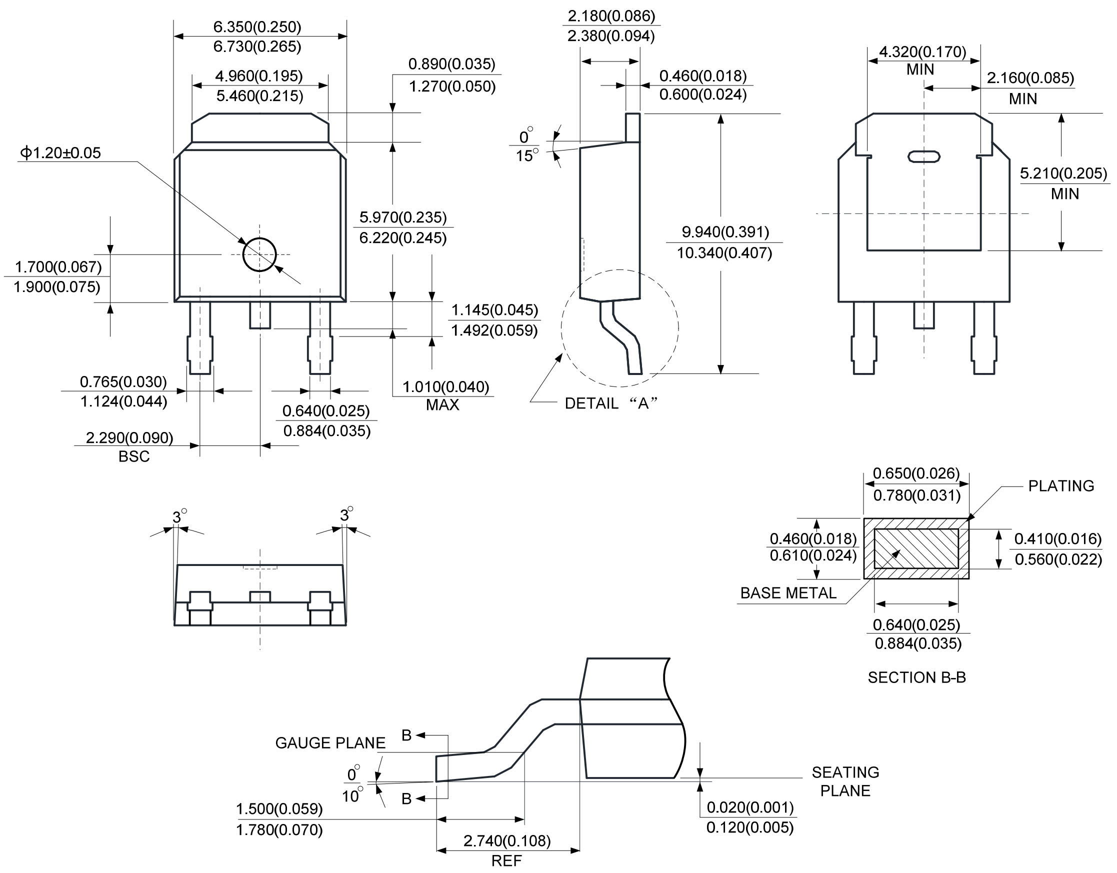
Mechanical Dimensions (Continued)

TO-252-2 (3) **Unit: mm(inch)**



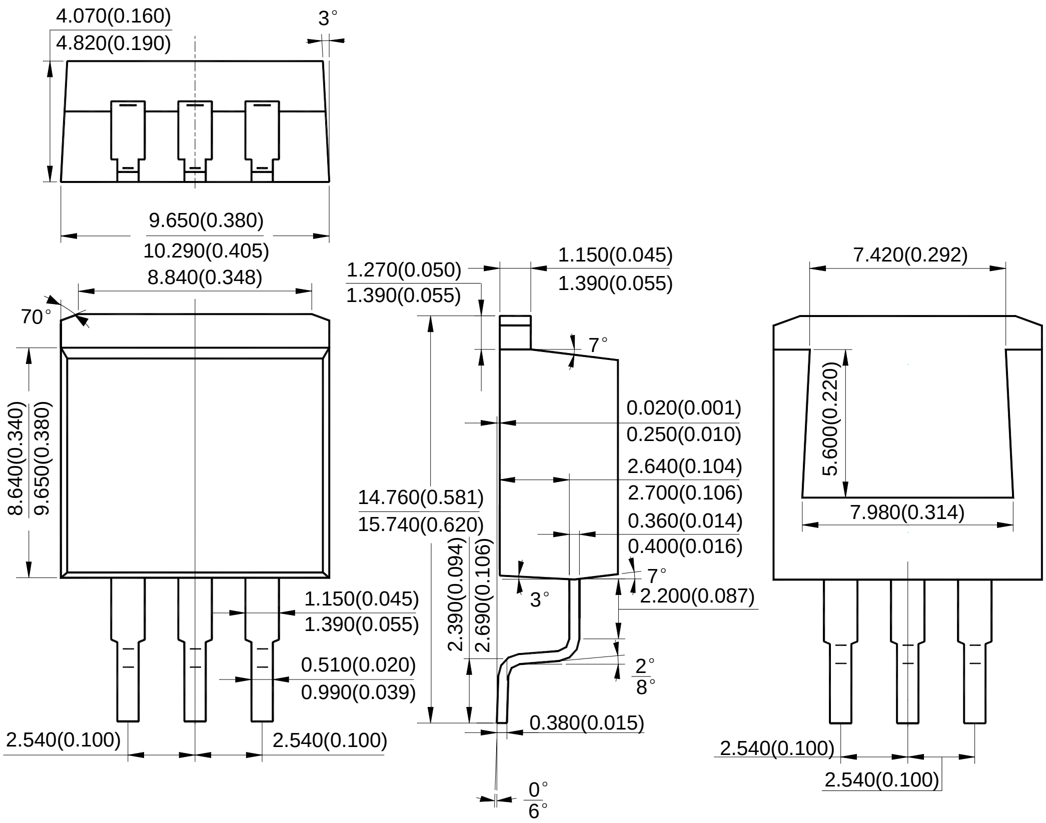
Mechanical Dimensions (Continued)

TO-252-2 (4) **Unit: mm(inch)**



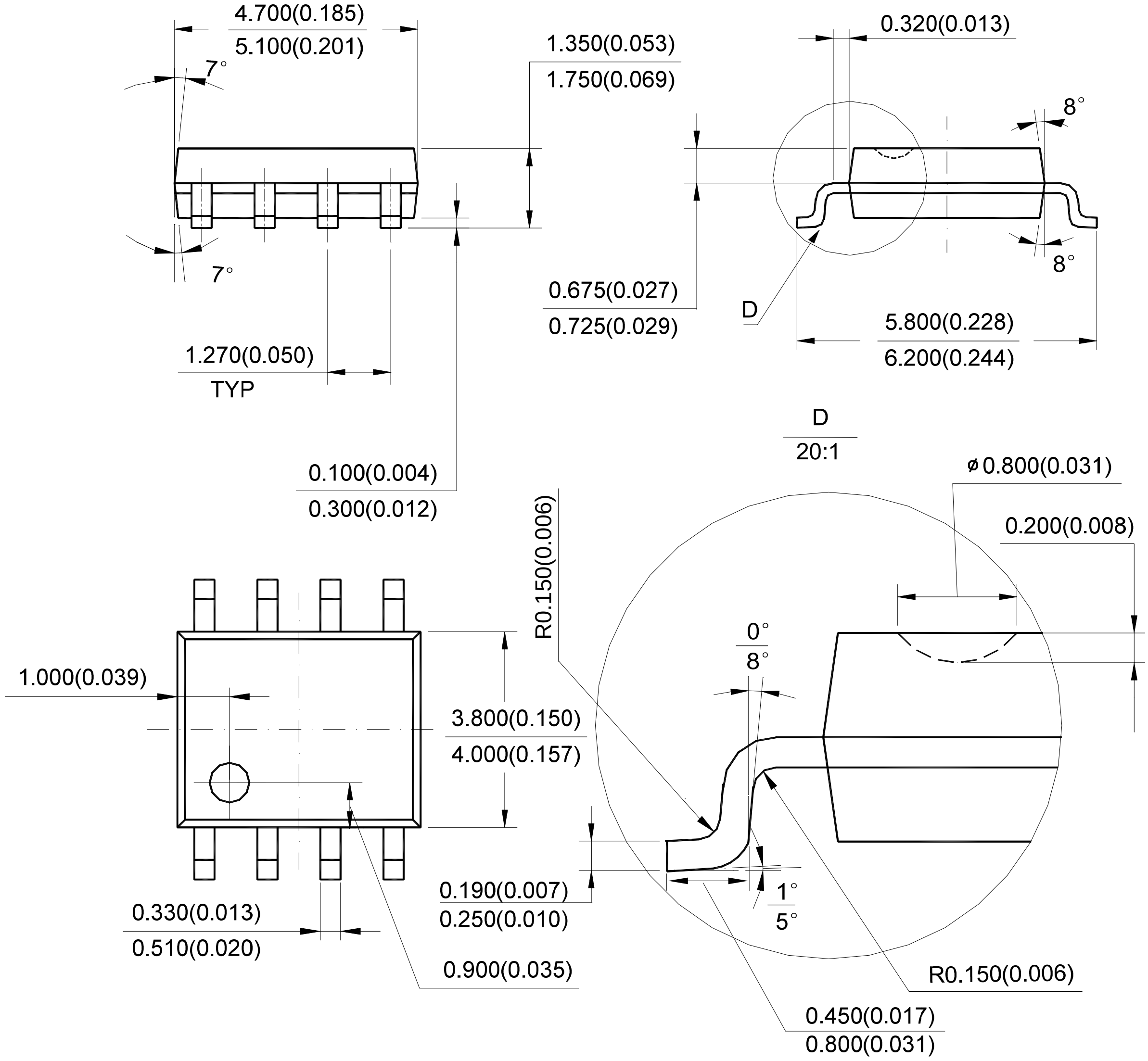
Mechanical Dimensions (Continued)

TO-263-3 **Unit: mm(inch)**



Mechanical Dimensions (Continued)

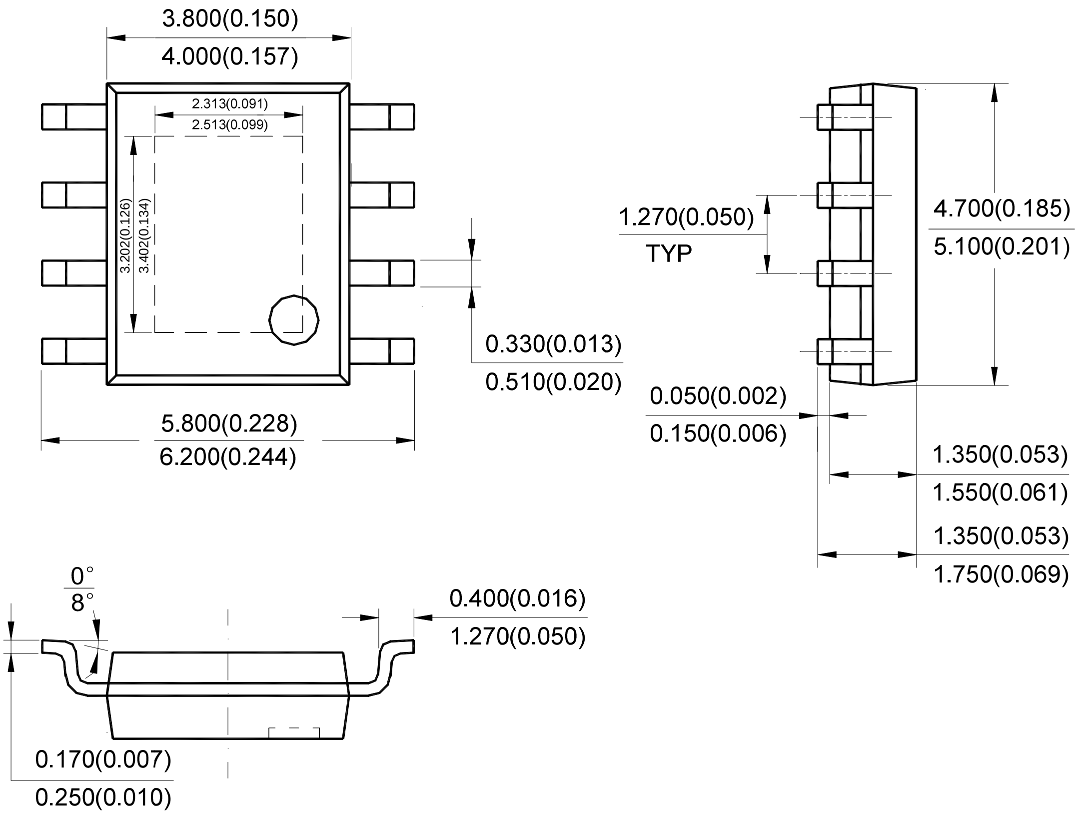
SOIC-8 **Unit: mm(inch)**



Note: Eject hole, oriented hole and mold mark is optional.

Mechanical Dimensions (Continued)

PSOP-8 **Unit: mm(inch)**



Note: Eject hole, oriented hole and mold mark is optional.