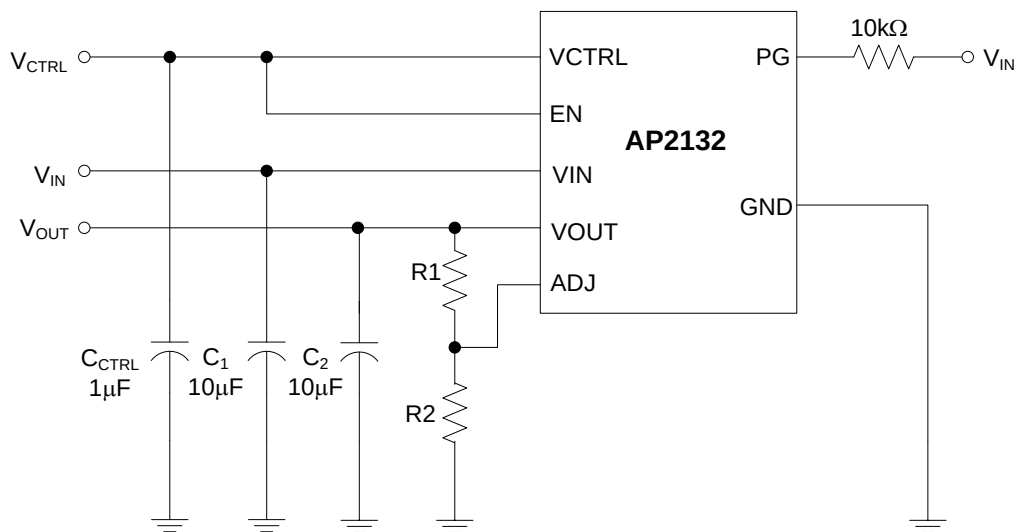


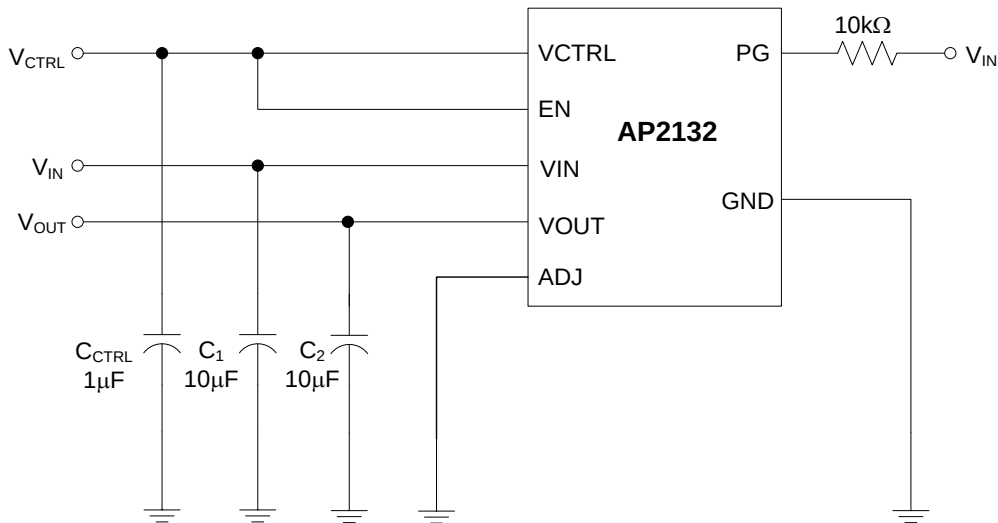
Typical Applications Circuit



$$V_{OUT} = \frac{0.6 (R1 + R2)}{R2}$$

Do not program below 0.6V

Typical Application of AP2132 for Adjustable Version

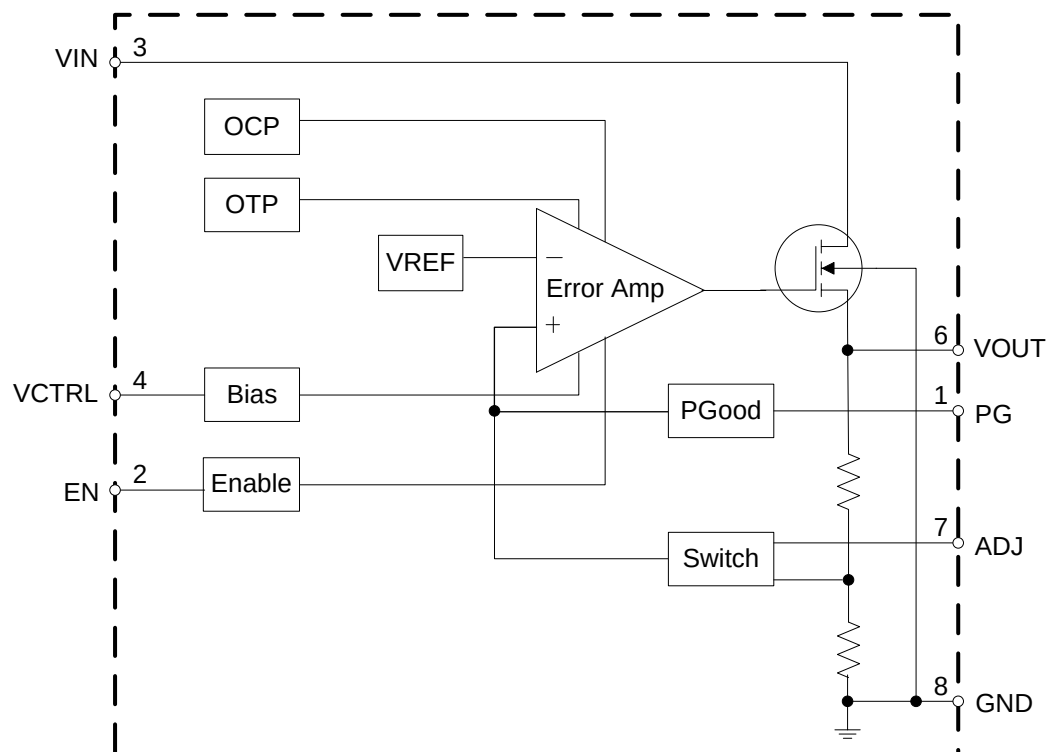


Typical Application of AP2132 for Fixed Version

Pin Description

Pin Number	Pin Name	Function
1	PG	Assert high once V _{OUT} reaches 92% of its rating voltage
2	EN	Enable input
3	VIN	Input voltage
4	VCTRL	Input voltage for controlling circuit
5	NC	Not connected
6	VOUT	Regulated output voltage
7	ADJ	Internal Mode ADJ is connected to ground. The output voltage is set by internal resistors External Mode ADJ is connected to external feedback resistors. The output voltage will be $V_{OUT} = 0.6 (R1+R2)/R2$. Do not program below 0.6V
8	GND	Ground
Thermal Pad	GND or Open	The pad may be grounded or left open. This does not replace the need for ground on Pin 8.

Functional Block Diagram



Absolute Maximum Ratings (Note 4)

Symbol	Parameter	Rating	Unit
V_{IN} V_{CTRL}	Input Voltage Input Voltage for Controlling Circuit	6.0	V
V_{EN}	Enable Input Voltage	-0.3 to 6.0	V
I_{OUT}	Output Current	2.5	A
θ_{JA}	Thermal Resistance (No Heatsink)	130	°C/W
T_J	Operating Junction Temperature	+150	°C
T_{STG}	Storage Temperature Range	-65 to +150	°C
T_{LEAD}	Lead Temperature (Soldering, 10sec)	+260	°C
—	ESD (Machine Model)	200	V
—	ESD (Human Body Model)	2000	V

Note 4: Stresses greater than those listed under “*Absolute Maximum Ratings*” can 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 can affect device reliability.

Recommended Operating Conditions

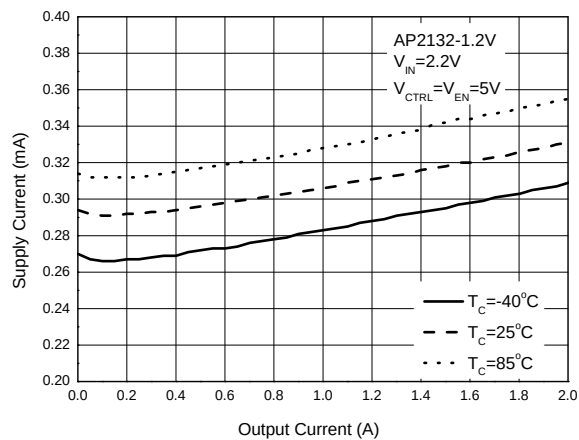
Symbol	Parameter	Min	Max	Unit
V_{IN}	Input Voltage	1.4	5.5	V
V_{CTRL}	Input Voltage for Controlling Circuit	4.5	5.5	V
T_A	Operating Ambient Temperature Range	-40	+85	°C

Electrical Characteristics (@ $V_{IN} = V_{OUT} + 0.5V$, $V_{CTRL} = V_{EN} = 5V$, $T_A = +25^\circ C$, $C_{IN} = C_{OUT} = 10\mu F$, $C_{CTRL} = 1\mu F$, $I_{OUT} = 10mA$, **Bold** typeface applies $-40^\circ C \leq T_A \leq +85^\circ C$ unless otherwise specified.)

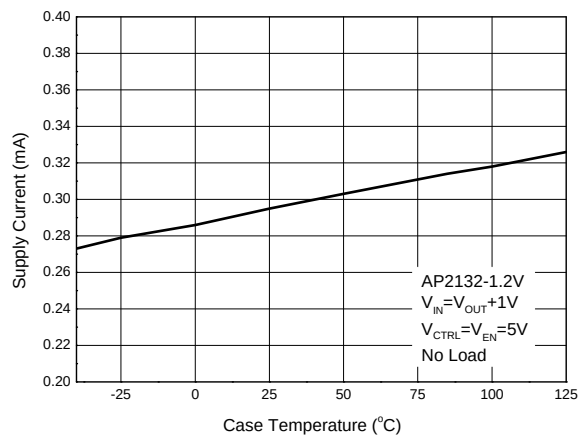
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V _{OUT}	Output Voltage	V _{IN} = V _{OUT} +0.5V, I _{OUT} =10mA		V _{OUT} × 98%	—	V _{OUT} × 102%	V
V _{IN}	Input Voltage	—		1.4	—	5.5	V
I _{OUT} (max)	Max. Output Current	V _{IN} – V _{OUT} = 1V, V _{OUT} = 98%×V _{OUT}		2	—	—	A
V _{RLOAD}	Load Regulation	V _{IN} = V _{OUT} +0.5V, 10mA ≤ I _{OUT} ≤ 2A		—	10	—	mV
V _{RLINE}	Line Regulation	V _{OUT} + 0.5V ≤ V _{IN} ≤ 5V, I _{OUT} = 10mA		—	2	—	mV
V _{DROP}	Dropout Voltage	I _{OUT} = 500mA		—	80	120	mV
		I _{OUT} = 1A		—	150	200	mV
		I _{OUT} = 2A		—	300	450	mV
I _{SUPPLY}	Supply Current	V _{IN} = V _{OUT} +0.5V, I _{OUT} = 0mA		—	300	—	μA
I _{CTRLH}	VCTRL Current	V _{IN} = V _{OUT} +0.5V, V _{CTRL} = V _{EN} = 5V		—	250	500	μA
I _{CTRL L}		V _{IN} = V _{OUT} +0.5V, V _{CTRL} = 5V, V _{EN} = 0V		—	0.1	1	μA
PSRR	Power Supply Rejection Ratio	Ripple 0.5Vp-p, V _{IN} = V _{OUT} +1V	f = 100Hz	—	60	—	dB
			f = 1kHz	—	60	—	dB
$\frac{\Delta V_{OUT}}{V_{OUT} \Delta T}$	Output Voltage Temperature Coefficient	I _{OUT} = 10mA, -40°C ≤ T _A ≤ +85°C		—	±100	—	ppm/°C
V _{REF}	Reference Voltage	Adjust Short to V _{OUT}		0.588	0.6	0.612	V
—	Enable “High” Voltage	Enable Input Voltage “High”		1.5	—	—	V
—	Enable “Low” Voltage	Enable Input Voltage “Low”		—	—	0.4	V
OTSD	Thermal Shutdown	—		—	+165	—	°C
—	Thermal Shutdown Hysteresis	—		—	+20	—	°C
V _{THPG}	V _{OUT} Power Good Voltage	—		—	92	—	%
—	V _{PG} Hysteresis	—		—	7	—	%
—	Adjust Pin Threshold	—		—	200	—	mV
θ _{JC}	Thermal Resistance (Junction to Case)	PSOP-8		—	40	—	°C/W

Performance Characteristics

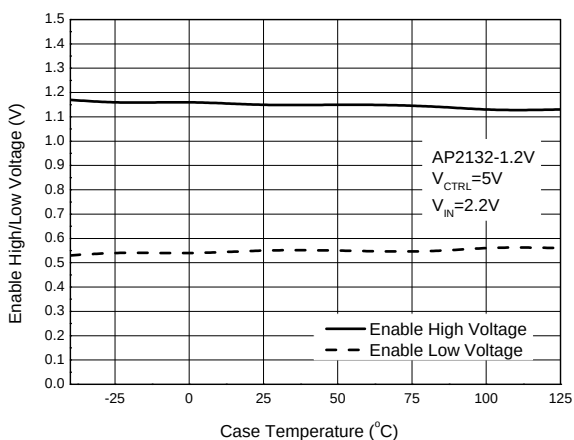
Supply Current vs. Output Current



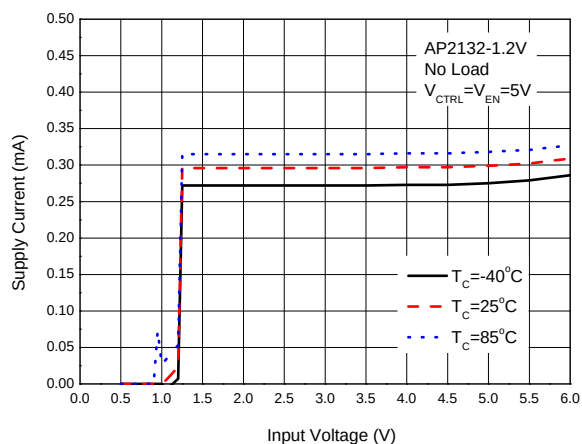
Supply Current vs. Case Temperature



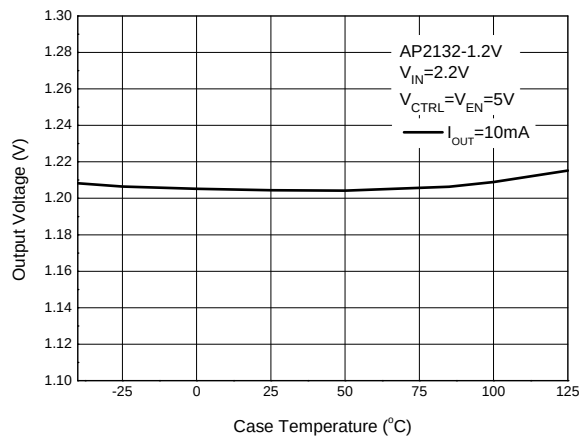
Enable High/Low Voltage vs. Case Temperature



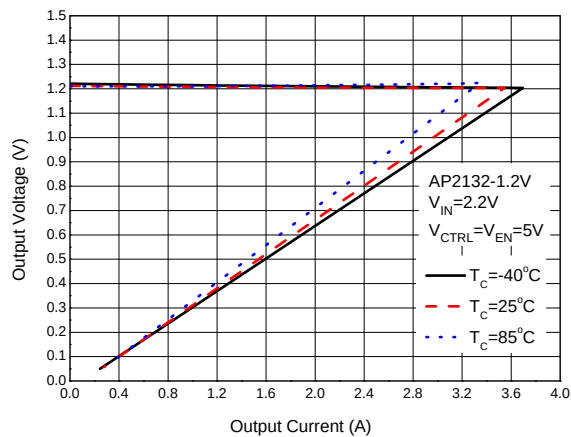
Supply Current vs. Input Voltage



Output Voltage vs. Case Temperature

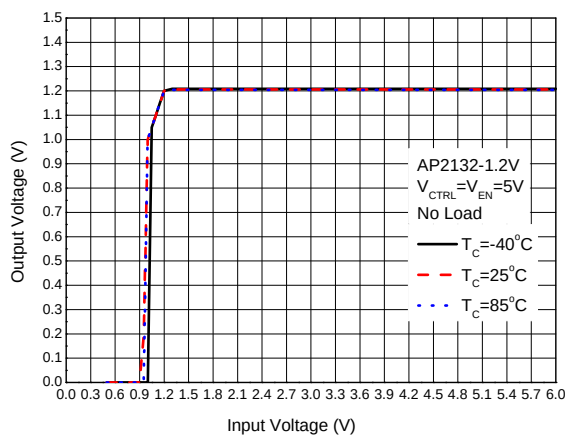


Output Voltage vs. Output Current

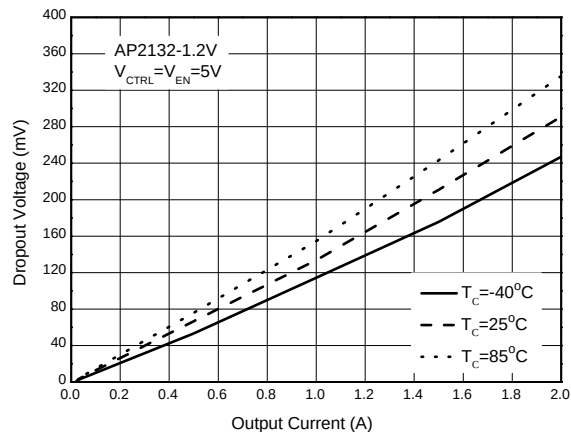


Performance Characteristics (continued)

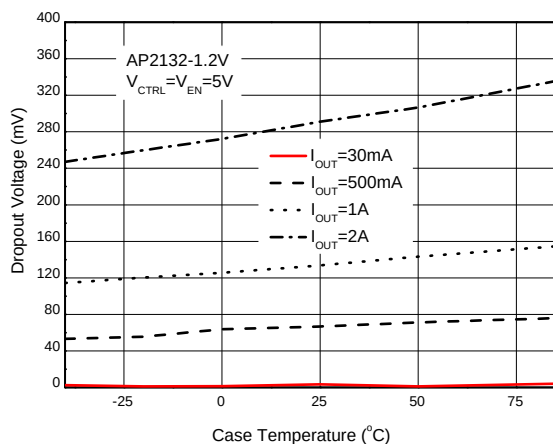
Output Voltage vs. Input Voltage



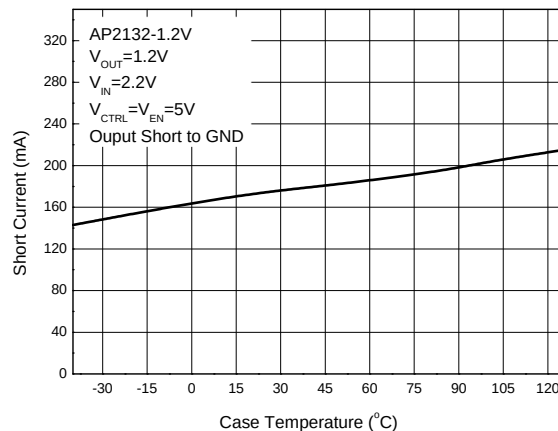
Dropout Voltage vs. Output Current



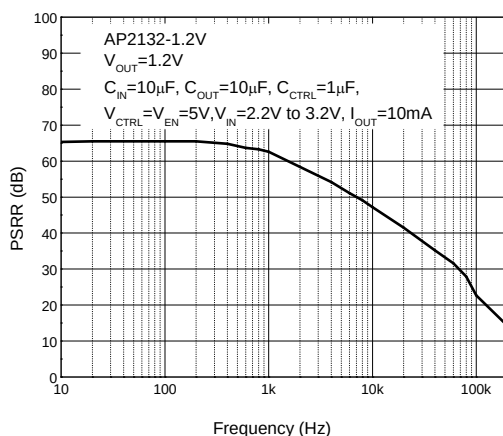
Dropout Voltage vs. Case Temperature



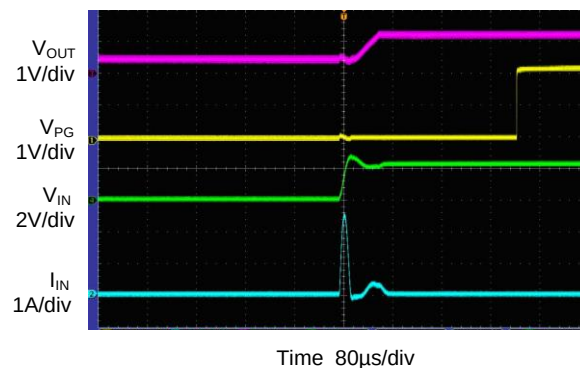
Short Current vs. Case Temperature



PSRR vs. Frequency

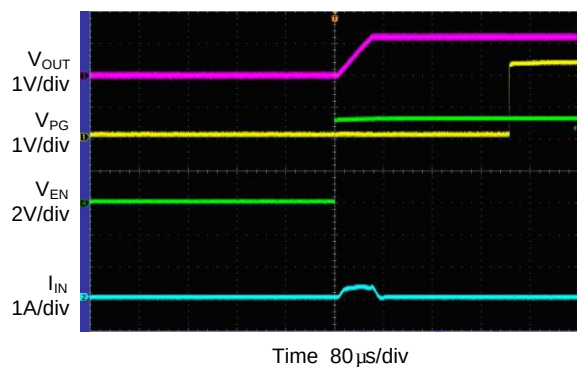


V_{IN} Start up Waveform
($V_{CTRL}=V_{EN}=5V, V_{IN}=0 \text{ to } 2.2V$, No Load)

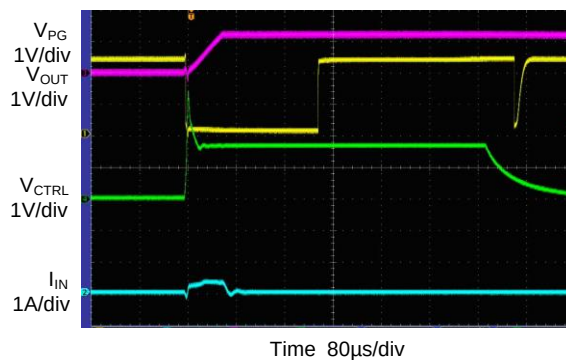


Performance Characteristics (continued)

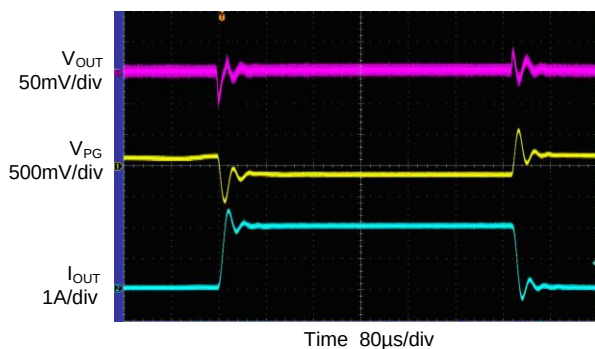
V_{EN} Start up Waveform
($V_{CTRL}=5V$, $V_{EN}=0$ to $5V$, $V_{IN}=2.2V$, No Load)



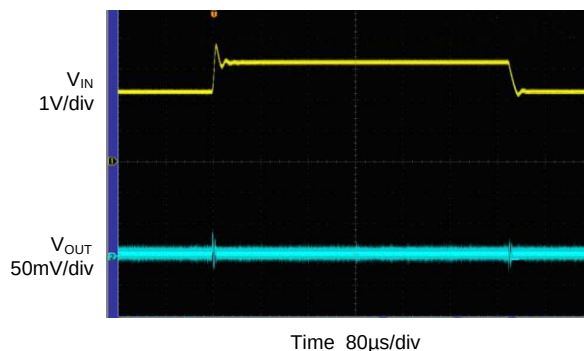
V_{CTRL} Start up and Shut down Waveform
($V_{CTRL}=0$ to $5V$, $V_{EN}=5V$, $V_{IN}=2.2V$, No Load)



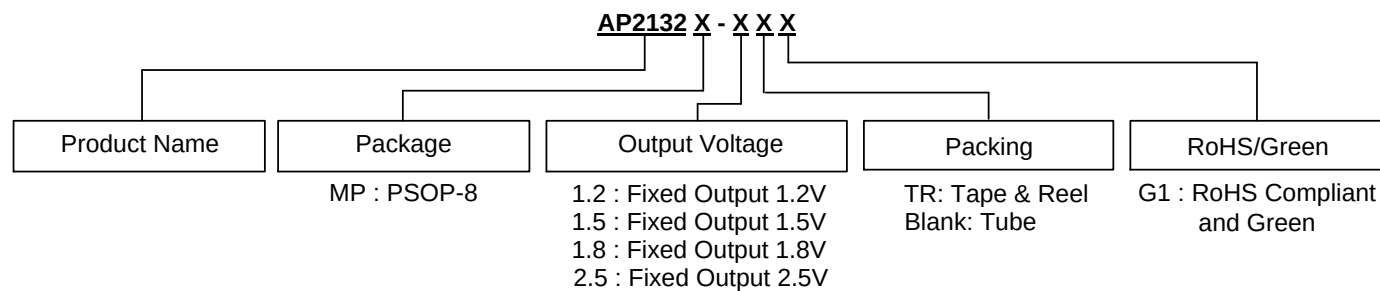
Load Transient
($V_{CTRL}=V_{EN}=5V$, $V_{IN}=2.2V$, $I_{OUT}=0$ to $2A$)



Line Transient
($V_{CTRL}=V_{EN}=5V$, $C_{IN}=C_{CTRL}=1\mu F$, $C_{OUT}=10\mu F$, $V_{IN}=2.2V$ to $3.2V$, $I_{OUT}=10mA$)



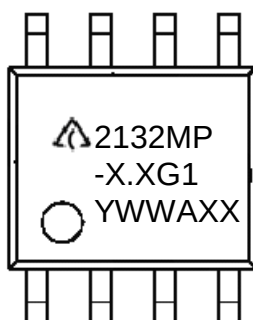
Ordering Information



Package	Temperature Range	Version Description	Part Number	Marking ID	Packing
PSOP-8	-40 to +85°C	Each fixed output version integrates ADJ version	AP2132MP-1.2G1	2132MP-1.2G1	100/Tube
			AP2132MP-1.2TRG1	2132MP-1.2G1	4000/Tape & Reel
			AP2132MP-1.5G1	2132MP-1.5G1	100/Tube
			AP2132MP-1.5TRG1	2132MP-1.5G1	4000/Tape & Reel
			AP2132MP-1.8G1	2132MP-1.8G1	100/Tube
			AP2132MP-1.8TRG1	2132MP-1.8G1	4000/Tape & Reel
			AP2132MP-2.5G1	2132MP-2.5G1	100/Tube
			AP2132MP-2.5TRG1	2132MP-2.5G1	4000/Tape & Reel

Marking Information

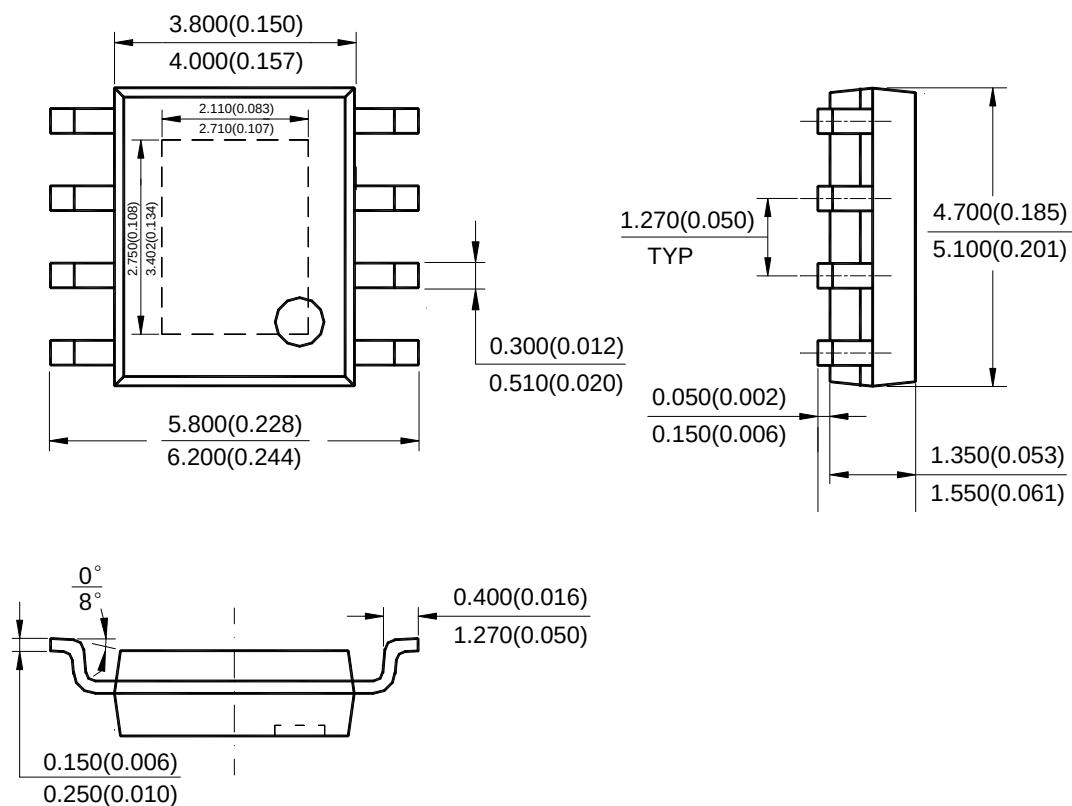
(Top View)



First and Second Lines: Logo and Marking ID
 (See Ordering Information)
 Third Line: Date Code
 Y: Year
 WW: Work Week of Molding
 A: Assembly House Code
 XX: 7th and 8th Digits of Batch Number

Package Outline Dimensions (All dimensions in mm(inch).)

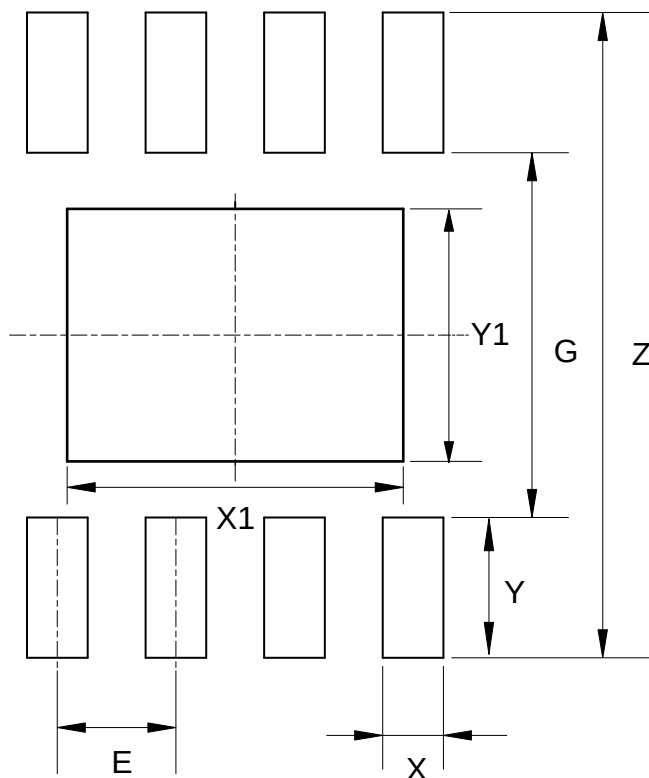
(1) Package Type: PSOP-8



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

Suggested Pad Layout

(1) Package Type: PSOP-8



Dimensions	Z (mm)/(inch)	G (mm)/(inch)	X (mm)/(inch)	Y (mm)/(inch)	X1 (mm)/(inch)	Y1 (mm)/(inch)	E (mm)/(inch)
Value	6.900/0.272	3.900/0.154	0.650/0.026	1.500/0.059	3.600/0.142	2.700/0.106	1.270/0.050

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