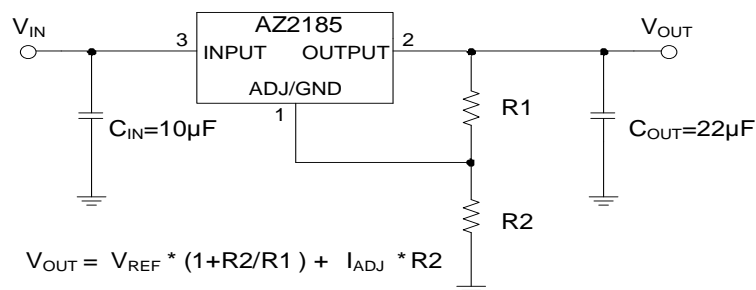


Typical Applications Circuit (Note 4)

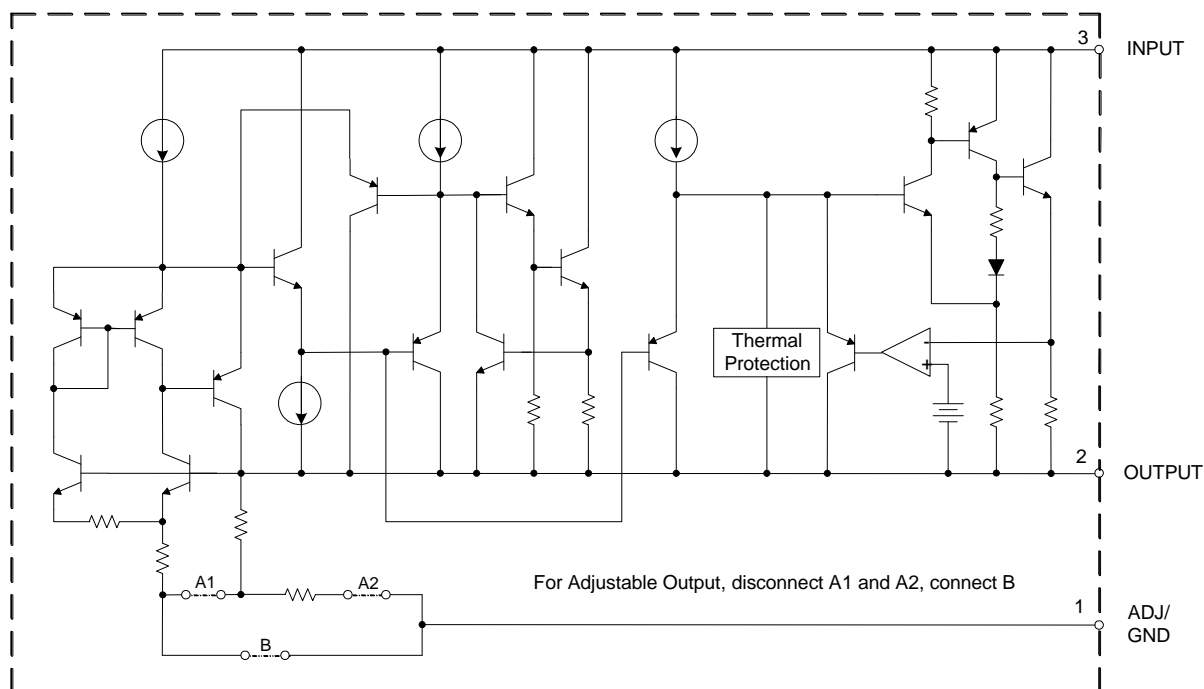


Note 4: The AZ2185 is compatible with low ESR ceramic capacitor.
The ESR of the output capacitors must be less than 0.4Ω.
A minimum of 10µF output capacitor is required.

Pin Descriptions

Pin Number	Pin Name	Function
1	ADJ/GND	Adjust pin/Ground
2	OUTPUT	Output voltage
3	INPUT	Input voltage

Functional Block Diagram



Absolute Maximum Ratings (Note 5)

Symbol	Parameter	Rating	Unit
V_{IN}	Input Voltage	18	V
T_J	Operating Junction Temperature	+150	°C
T_{STG}	Storage Temperature Range	-65 to +150	°C
T_{LEAD}	Lead Temperature (Soldering, 10sec)	+260	°C
θ_{JA}	Thermal Resistance (Junction to Ambient)	75	°C/W
—	ESD (Human Body Model)	5000	V
—	ESD (Charge Device Model)	2000	V

Note 5: 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

Symbol	Parameter	Min	Max	Unit
V_{IN}	Input Voltage	—	12	V
T_J	Operating Junction Temperature	-40	+125	°C

Electrical Characteristics

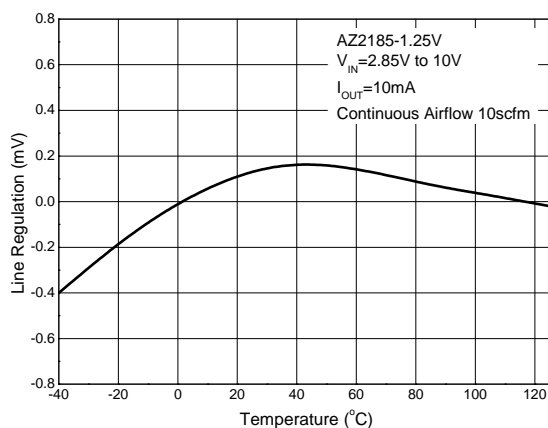
(Typicals and limits appearing in normal type apply for $T_J = +25^{\circ}\text{C}$. Limits appearing in **Boldface** type apply over the entire operating junction temperature range -40 to $+125^{\circ}\text{C}$.)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{REF}	Reference Voltage	$I_{OUT} = 10\text{mA}$, $V_{IN}-V_{OUT} = 3\text{V}$, $T_J = +25^{\circ}\text{C}$, $10\text{mA} \leq I_{OUT} \leq 3\text{A}$, $1.5\text{V} \leq V_{IN}-V_{OUT} \leq 5\text{V}$	1.238 1.225	1.250 1.250	1.262 1.275	V
V_{RLOAD}	Load Regulation	$10\text{mA} \leq I_{OUT} \leq 3\text{A}$, $V_{IN}-V_{OUT} = 3\text{V}$	—	0.1 0.2	0.4 0.5	%/A
V_{RLINE}	Line Regulation	$I_{OUT} = 10\text{mA}$, $2.85\text{V} \leq V_{IN} \leq 10\text{V}$	—	0.015 0.035	0.2 0.2	%/V
V_{DROP}	Dropout Voltage	$I_{OUT} = 3\text{A}$, ΔV_{REF} , $\Delta V_{OUT} = 1\%$	—	1.3	1.5	V
I_{LIMIT} (Note 6)	Current Limit	$V_{IN}-V_{OUT} = 3\text{V}$	3.2	4.5	4.95	A
I_{LOAD}	Minimum Load Current	$V_{IN} = 10\text{V}$	—	0.3	1	mA
I_{ADJ}	Adjust Pin Current	$V_{IN} = 4.25\text{V}$, $I_{OUT} = 10\text{mA}$	—	6	10	μA
ΔI_{ADJ}	Adjust Pin Current Change	$10\text{mA} \leq I_{OUT} \leq 3\text{A}$, $1.5\text{V} \leq V_{IN}-V_{OUT} \leq 6\text{V}$	—	0.3	2	μA
PSRR	Ripple Rejection	$f_{RIPPLE} = 120\text{Hz}$, $C_{OUT} = 22\mu\text{F}$, $I_{OUT} = 3\text{A}$, $V_{IN}-V_{OUT} = 3\text{V}$	—	50	—	dB
—	Long Term Stability	$T_A = +125^{\circ}\text{C}$, 1000Hrs	—	0.5	—	%
—	Temperature Stability	$I_{OUT} = 10\text{mA}$, $V_{IN}-V_{OUT} = 1.5\text{V}$	—	50	—	PPM%
—	RMS Noise (% of V_{OUT})	$T_A = +125^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 10\text{kHz}$	—	0.003	—	%
—	OTSD	—	—	+150	—	$^{\circ}\text{C}$
—	OTSD Hysteresis	—	—	+20	—	$^{\circ}\text{C}$
θ_{JC}	Thermal Resistance (Junction to Case)	—	—	10	—	$^{\circ}\text{C/W}$

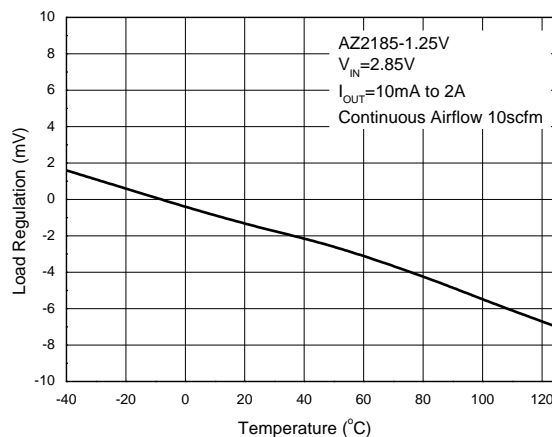
Note 6: Make the V_{OUT} down to about 98% of the test values, I_{OUT} value is set to I_{LIMIT} at this time.

Performance Characteristics

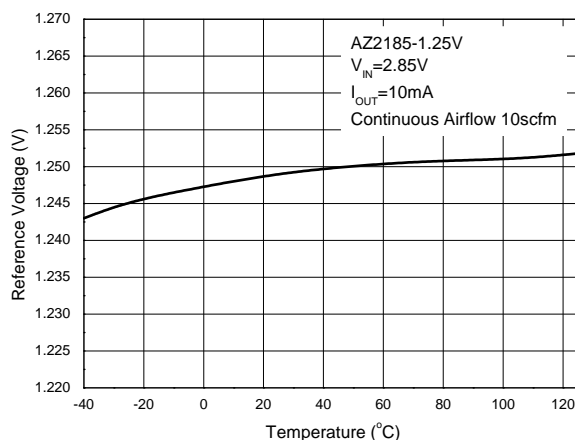
Line Regulation vs. Temperature



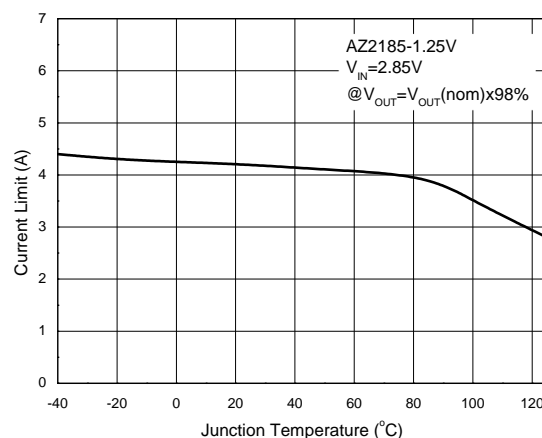
Load Regulation vs. Temperature



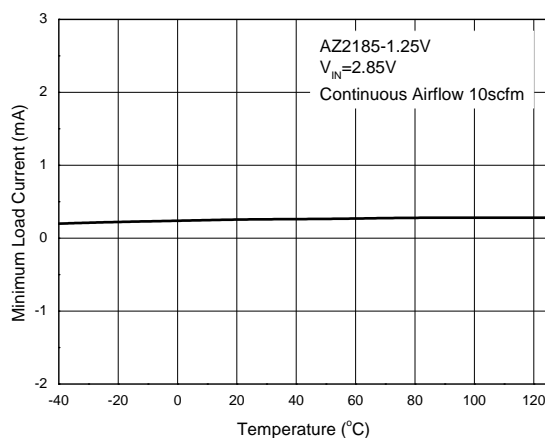
Reference Voltage vs. Temperature



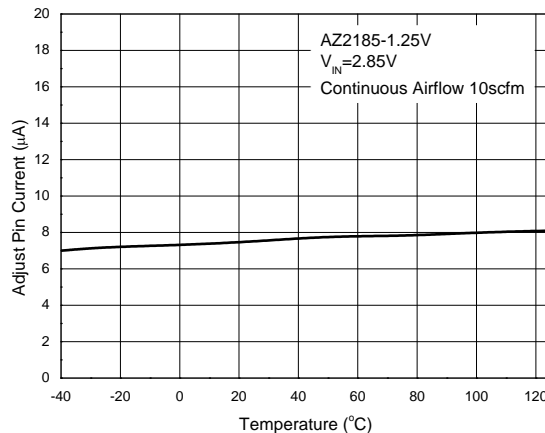
Current Limit vs. Temperature



Minimum Load Current vs. Temperature

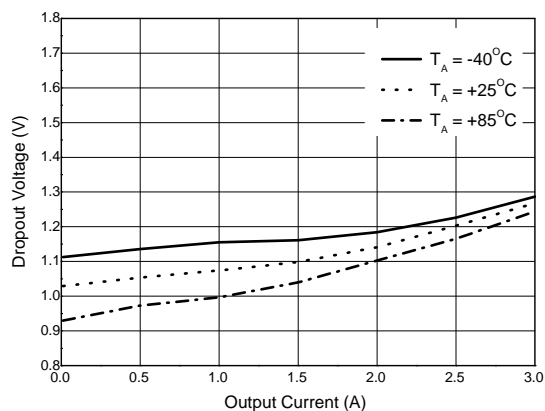


Adjust Pin Current vs. Temperature

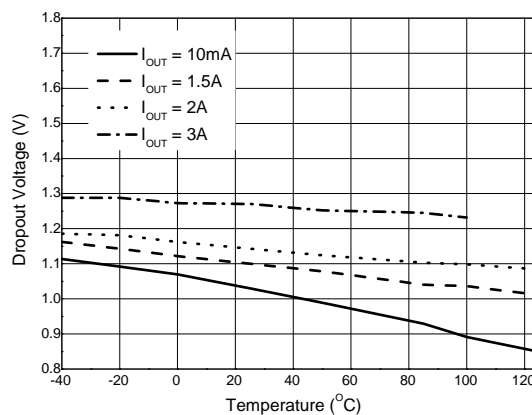


Performance Characteristics (Cont.)

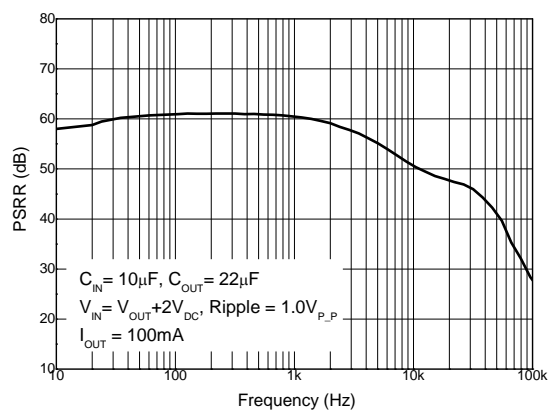
Dropout Voltage vs. Output Current



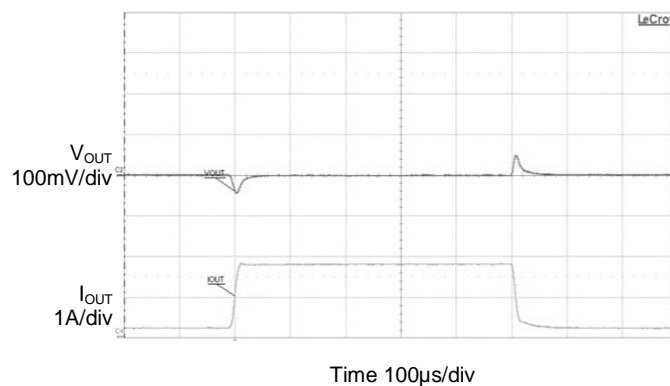
Dropout Voltage vs. Temperature



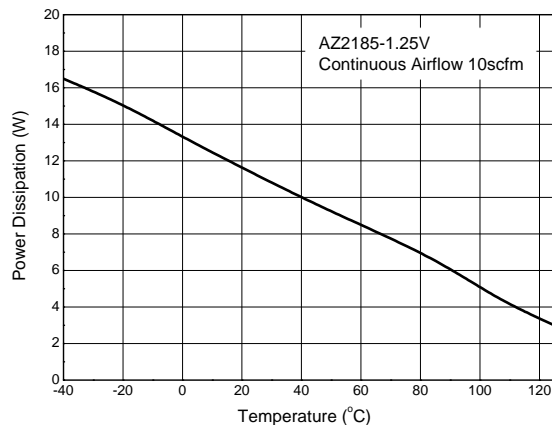
PSRR vs. Frequency



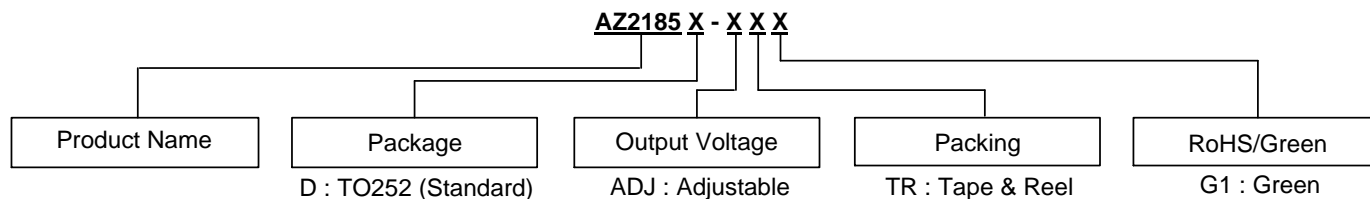
Load Transient Response



Power Dissipation vs. Temperature



Ordering Information

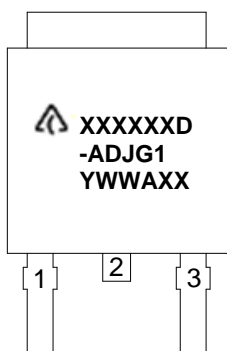


Package	Temperature Range	Part Number	Marking ID	Packing
TO252 (Standard)	-40 to +125°C	AZ2185D-ADJTRG1	AZ2185D-ADJG1	2500/Tape & Reel

Marking Information

(1) TO252 (Standard)

(Top View)

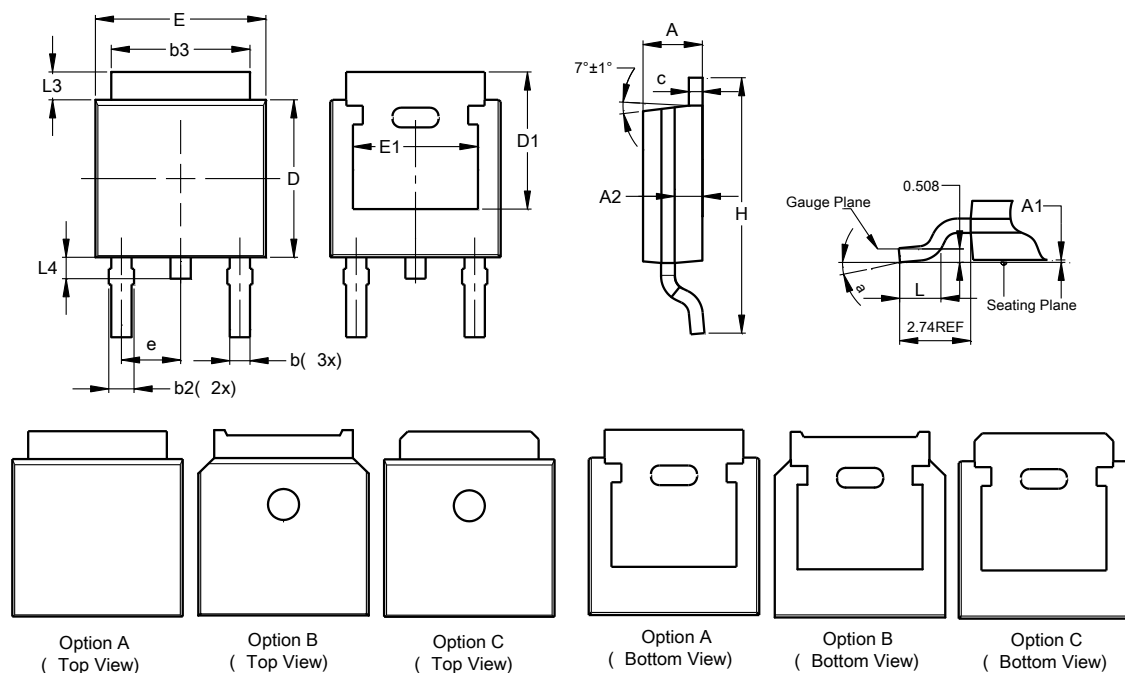


First and Second Lines: Logo and Marking ID (See Ordering Information)
 Third Line: Date Code
 Y: Year
 WW: Work Week of Molding
 A: Assembly House Code
 XX: 7th and 8th Digits of Batch Number

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

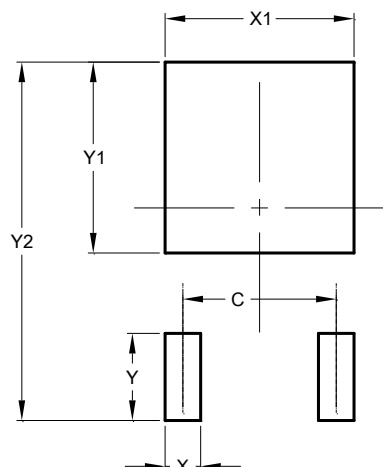
(1) Package Type: TO252 (Standard)



Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

(1) Package Type: TO252 (Standard)



Dimensions	Value (in mm)
C	4.572
X	1.060
X1	5.632
Y	2.600
Y1	5.700
Y2	10.700

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