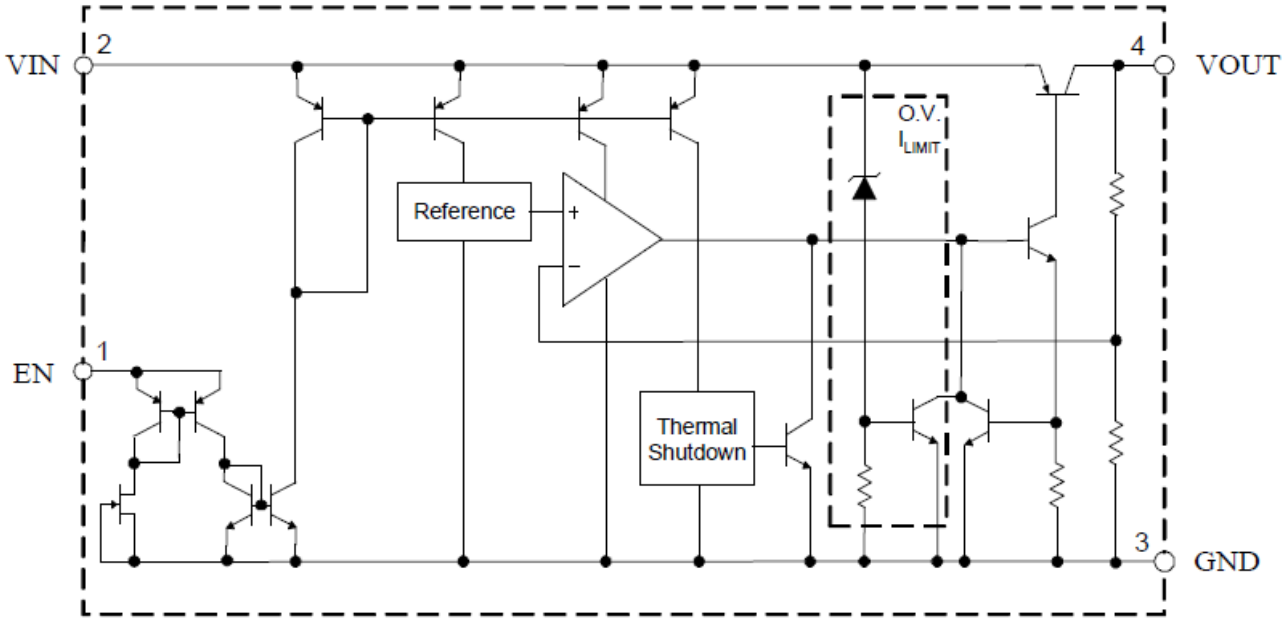
Pin Description

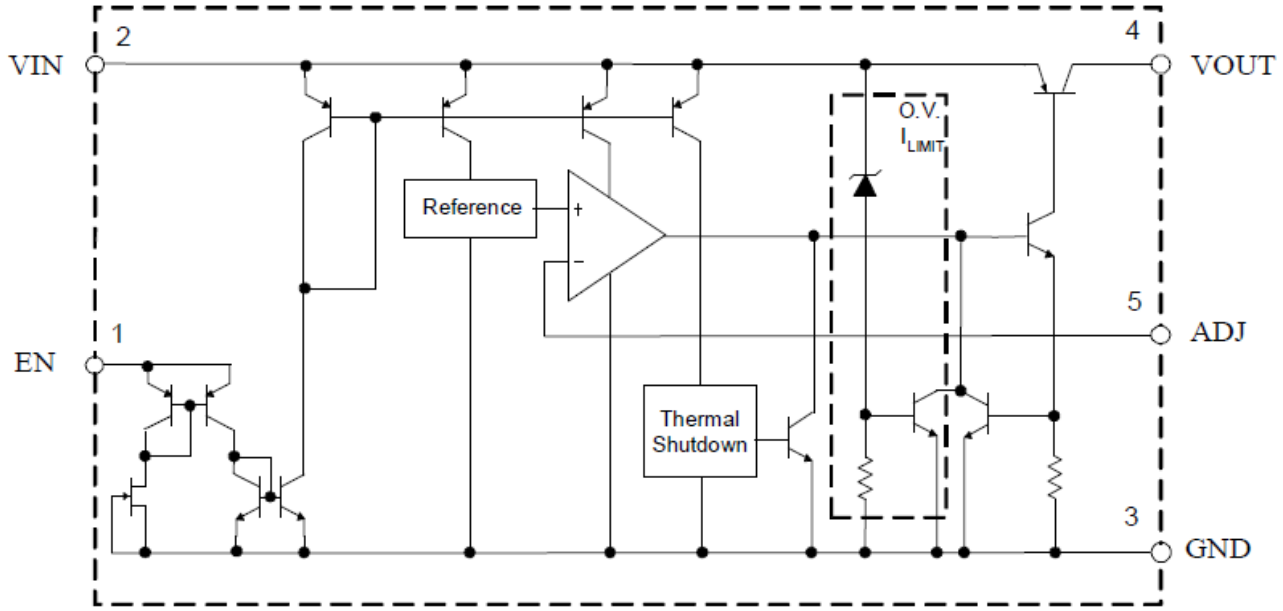
Pin Number	Pin Name	Function
1	EN	Enable: TTL/CMOS compatible input. Logic high=enable; Logic low or open=shutdown
2	VIN	Unregulated input
3	GND	Ground pin. This pin and TAB are internally connected
4	VOUT	Regulated output
5	NC/ADJ	No Connection / Adjustable Output

Functional Block Diagram



Fixed Version

Functional Block Diagram (Cont.)



Adjustable Version

Absolute Maximum Ratings (Note 1)

Symbol	Parameter	Rating	Unit
V_{IN}	Input Voltage	15	V
V_{EN}	Enable Voltage	15	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
ESD	ESD (Human Body Model)	5000	V
ESD	ESD (Machine Model)	450	V
θ_{JA}	Thermal Resistance	100	°C/W

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

Symbol	Parameter	Min	Max	Unit
V_{IN}	Input Voltage	—	13.5	V
V_{EN}	Enable Voltage	—	13.5	V
T_J	Operating Junction Temperature	-40	+125	°C

Electrical Characteristics

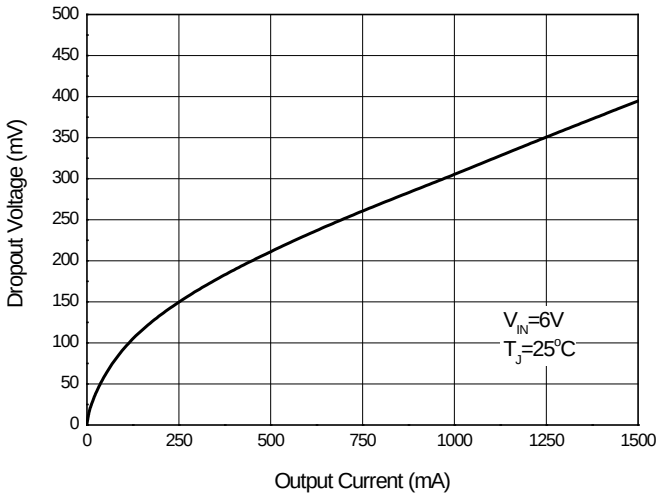
(Operating Conditions: V_{IN} = V_{OUT} + 1V, I_{OUT} = 10mA, C_{IN} = 10µF, C_{OUT} = 10µF, T_J = +25°C, unless otherwise specified. The **Boldface** applies over -40°C ≤ T_J ≤ +125°C.)

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_{OUT}	Output Voltage	—		-1	—	1	%
		10mA ≤ I_{OUT} ≤ 1.5A, V_{OUT} + 1V ≤ V_{IN} ≤ 13.5V		**-2**	—	**2**	
V_{RLINE}	Line Regulation	V_{OUT} + 1V ≤ V_{IN} ≤ 13.5V		—	3	25	mV
V_{RLOAD}	Load Regulation	10mA ≤ I_{OUT} ≤ 1.5A		—	10	50	mV
$\Delta V_{OUT}/\Delta T$	Output Voltage Temperature Coefficient (Note 2)	—		—	**100**	**500**	µV/°C
$(\Delta V_{OUT}/V_{OUT})\Delta T$		—		—	**20**	**100**	ppm/°C
V_{DROP}	Dropout Voltage (Note 3)	ΔV_{OUT} = 1%	I_{OUT} = 100mA	—	80	**200**	mV
			I_{OUT} = 750mA	—	260	—	mV
			I_{OUT} = 1.5A	—	375	**700**	mV
I_{GND}	Ground Current	I_{OUT} = 750mA		—	5	**10**	mA
		I_{OUT} = 1.5A		—	17	**34**	mA
I_{STD}	Standby Current	V_{IN} = 13.5V, V_{EN} = 0V		—	130	**220**	µA
$I_{GND(DO)}$	Dropout Ground Pin Current	V_{IN} ≤ $V_{OUT(NOMINAL)}$ - 0.5V		—	5	—	mA
I_{SHORT}	Short Circuit Current	V_{OUT} = 0V		—	2.8	—	A
—	Output Noise Voltage (rms)	10Hz to 100kHz, I_{OUT} = 100mA		—	200	—	µV
$I_{LOAD\ (MIN)}$	Minimum Load Current	—		—	—	5	mA
PSRR	Power Supply Ripple Rejection	f = 120Hz, I_{OUT} = 750mA		49	65	—	dB
Enable Input							
V_{EN}	Enable Voltage	Logic low (off)		—	—	**0.8**	V
		Logic high (on)		**2.25**	—	—	
I_{EN}	Enable Current	V_{EN} = V_{IN}		—	15	**35**	µA
		V_{EN} = 0.8V		—	—	**4**	
$I_{OUT\ (SHDN)}$	Shutdown Output Current	V_{EN} ≤ 0.8V, V_{IN} ≤ 8V, V_{OUT} = 0V		—	5	**10**	µA

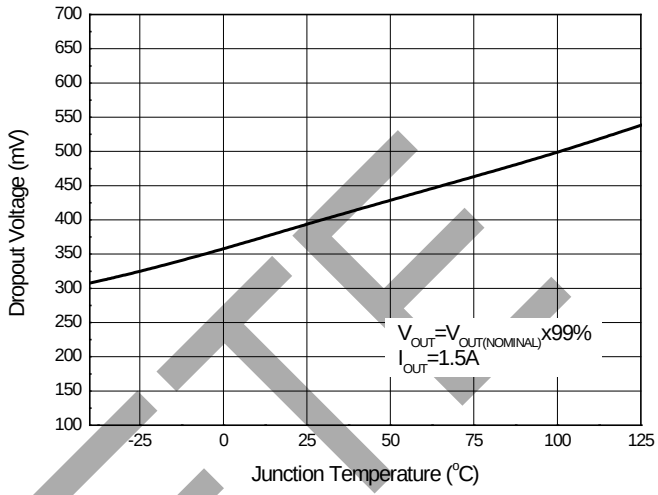
Notes:
2. Output voltage temperature coefficient is defined as the worst case voltage change divided by the total temperature range.
3. Dropout voltage is defined as the input-to-output differential when the output voltage drops to 99% of its nominal value which is measured at V_{OUT} + 1V applied to V_{IN}.

Performance Characteristics

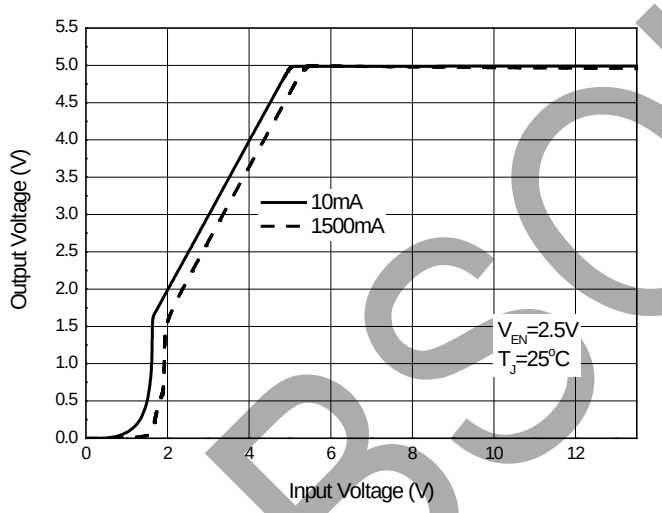
Dropout Voltage vs. Output Current



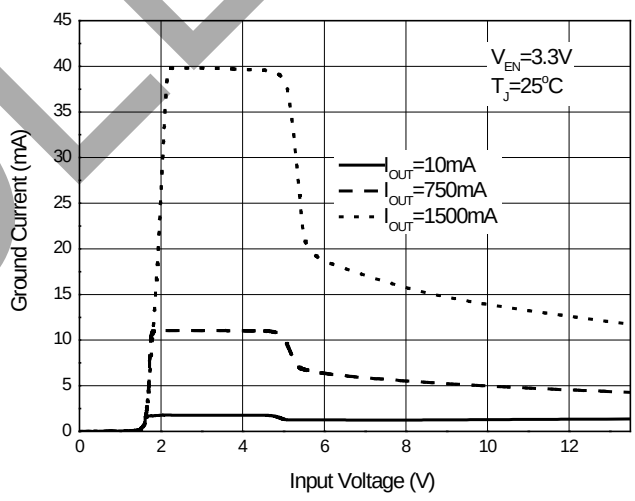
Dropout Voltage vs. Junction Temperature



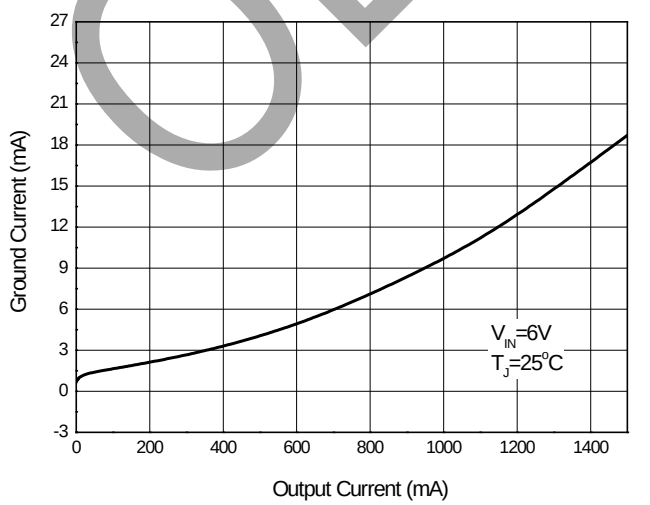
Output Voltage vs. Input Voltage



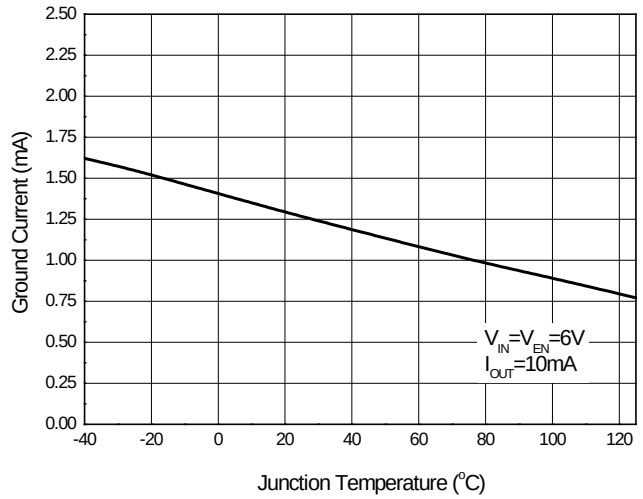
Ground Current vs. Input Voltage



Ground Current vs. Output Current

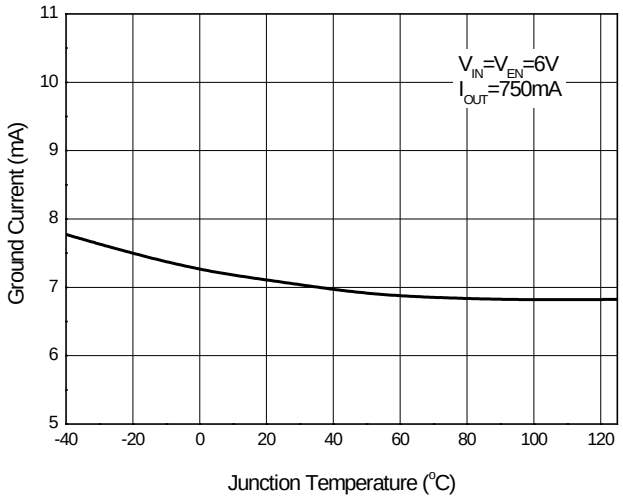


Ground Current vs. Junction Temperature

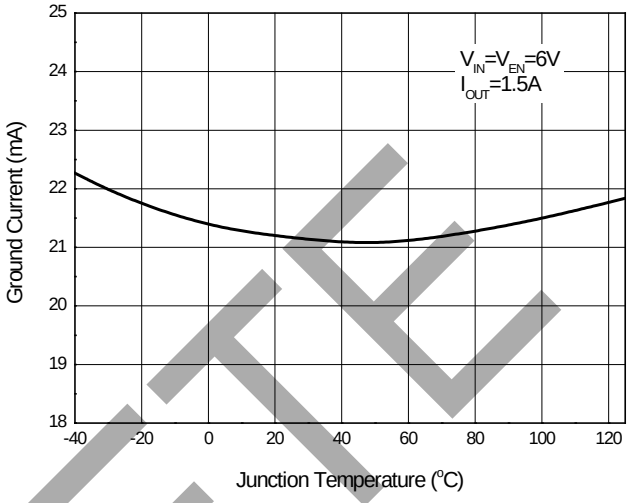


Performance Characteristics (Cont.)

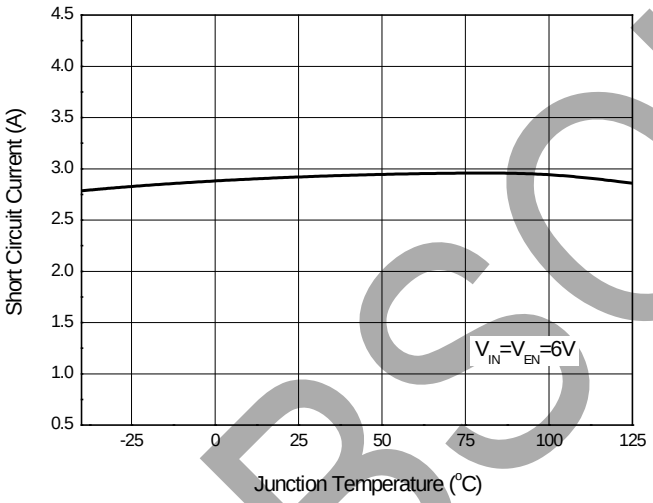
Ground Current vs. Junction Temperature



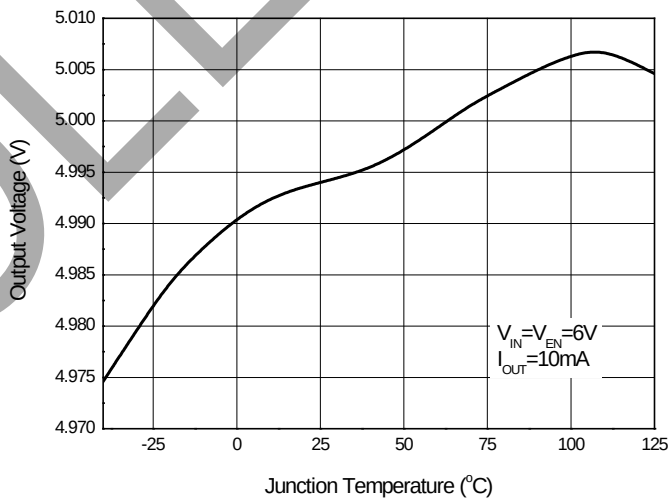
Ground Current vs. Junction Temperature



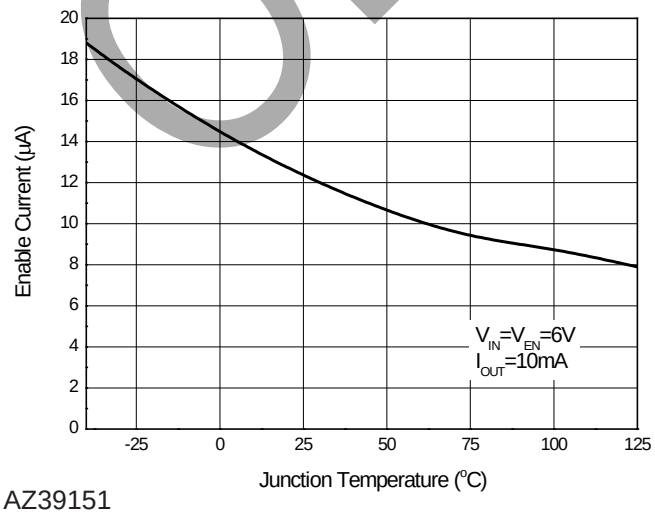
Short Circuit Current vs. Junction Temperature



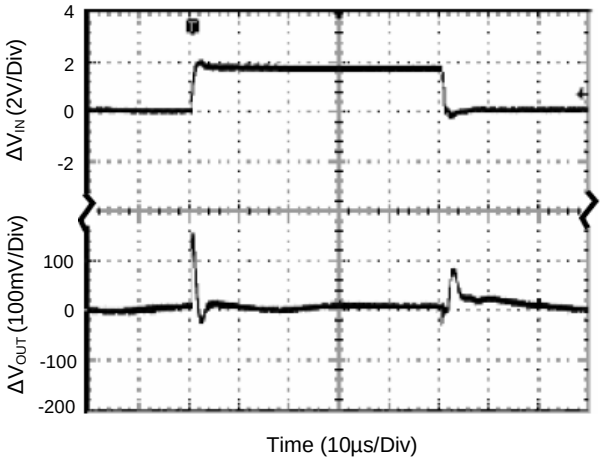
Output Voltage vs. Junction Temperature



Enable Current vs. Junction Temperature

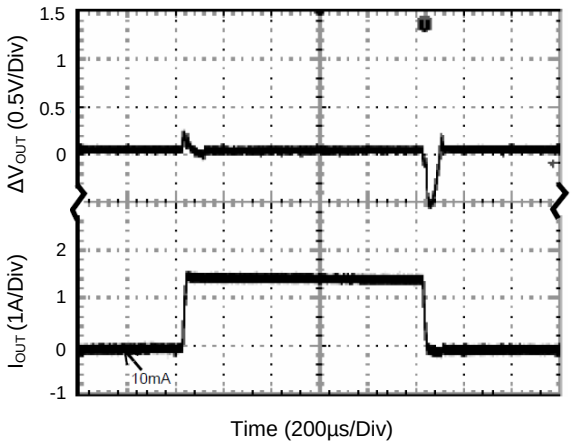


Line Transient
(Conditions: V_{IN} = 5 to 7V, I_{OUT} = 1.5A, C_{OUT} = 10µF)

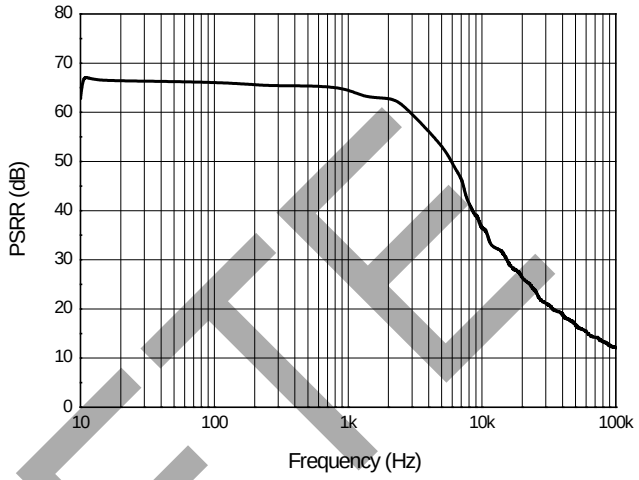


Performance Characteristics (Cont.)

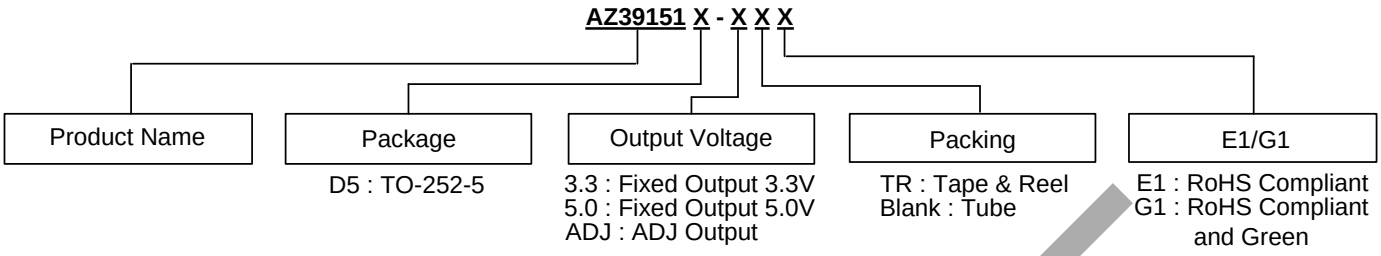
Load Transient
(Conditions: V_{IN} = 6V, I_{OUT} = 10mA to 1.5A, C_{IN} = C_{OUT} = 10µF)



PSRR vs. Frequency
(Conditions: V_{IN} = 6V, I_{OUT} = 10mA, C_{IN} = C_{OUT} = 10µF)



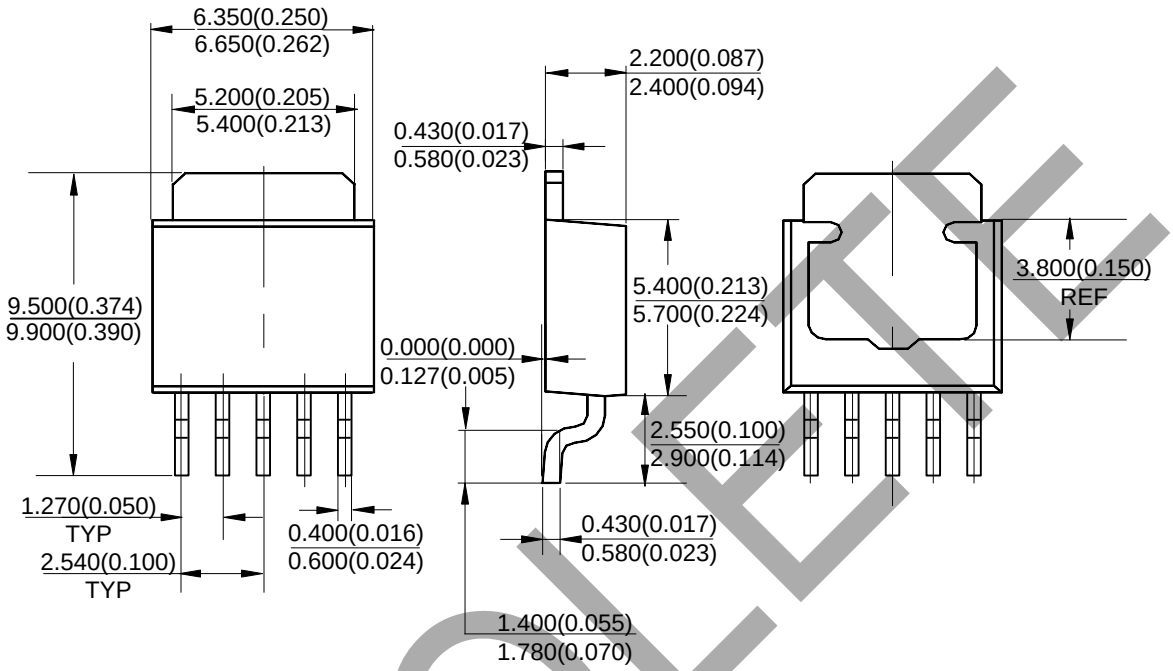
Ordering Information



Package	Temperature Range	Part Number		Marking ID		Packing
		RoHS Compliant	RoHS Compliant and Green	RoHS Compliant	RoHS Compliant and Green	
TO-252-5	-40 to +125°C	AZ39151D5-3.3E1	AZ39151D5-3.3G1	AZ39151D5-3.3E1	AZ39151D5-3.3G1	Tube
		AZ39151D5-3.3TRE1	AZ39151D5-3.3TRG1	AZ39151D5-3.3E1	AZ39151D5-3.3G1	Tape & Reel
		AZ39151D5-5.0E1	AZ39151D5-5.0G1	AZ39151D5-5.0E1	AZ39151D5-5.0G1	Tube
		AZ39151D5-5.0TRE1	AZ39151D5-5.0TRG1	AZ39151D5-5.0E1	AZ39151D5-5.0G1	Tape & Reel
		AZ39151D5-ADJE1	AZ39151D5-ADJG1	AZ39151D5-ADJE1	AZ39151D5-ADJG1	Tube
		AZ39151D5-ADJTRE1	AZ39151D5-ADJTRG1	AZ39151D5-ADJE1	AZ39151D5-ADJG1	Tape & Reel

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

(1) Package Type: TO-252-5



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