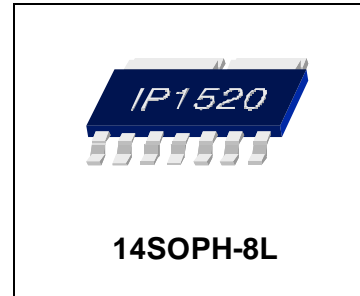


DESCRIPTION

The IP1520 is a dual output voltage series regulator which can provide up to 600mA of output current. The IP1520 consists of 1-fixed 3.3V and 1-fixed 2.55V regulators.



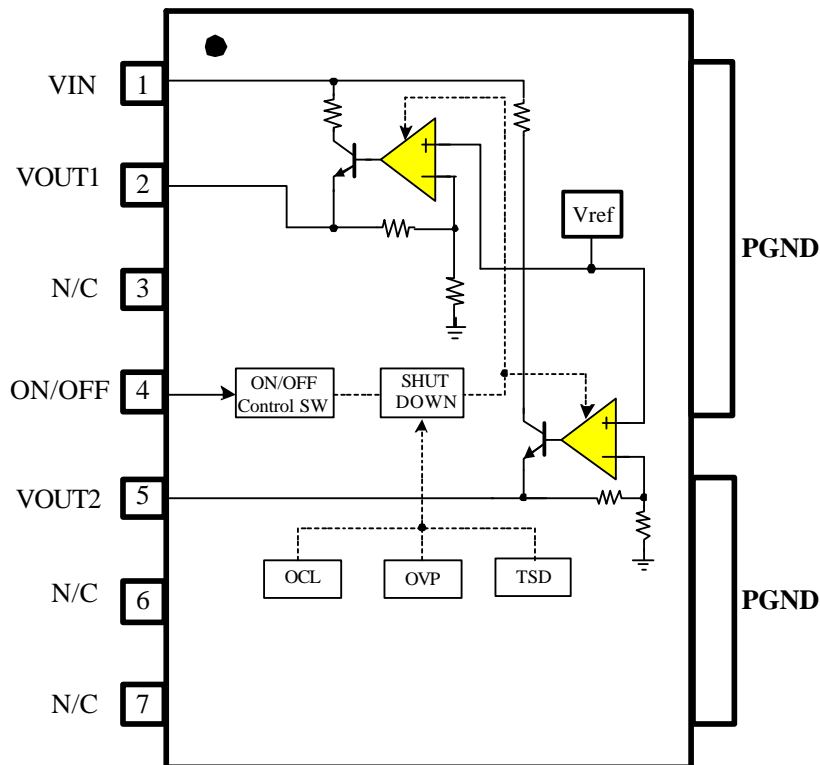
FEATURES

- 1-Fixed 3.3V Regulator with Internal NPN TR.
- 1-Fixed 2.55V Regulator with Internal NPN TR.
- Built-in TSD circuit.
- Built-in Current Limit Circuit.
- Built-in ON/OFF Control Circuit.
- Built-in Over Voltage Protection Circuit.
- Output Trimmed to +/-3% Tolerance

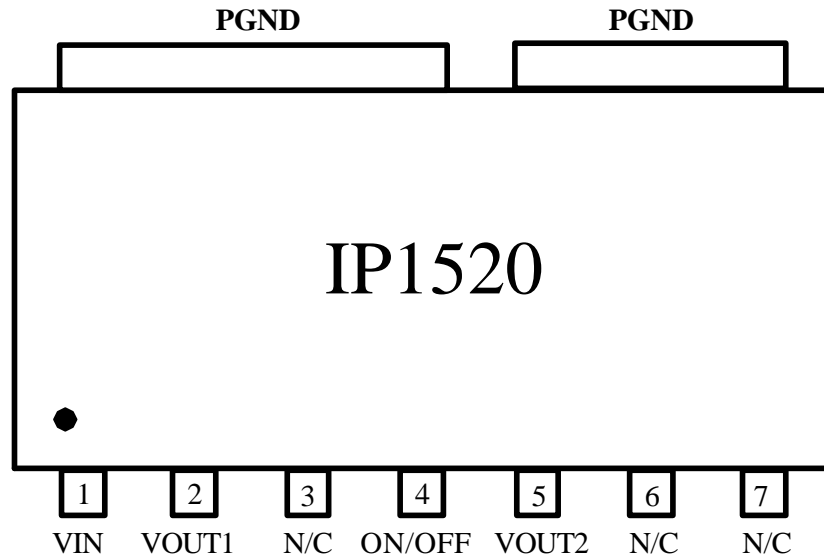
ORDERING INFORMATION

Device	Package	Operating Temp
IP1520	14SOPH-8L	-35°C ~ +85°C

BLOCK DIAGRAM



PIN CONNECTIONS



PIN DESCRIPTIONS

NO	SYMBOL	I/O	DESCRIPTION
1	VIN	I	Input Supply Voltage
2	VOUT1	O	Reg +3.3V Output
3	N/C	-	No Connection
4	ON/OFF	I	ON/OFF Control
5	VOUT2	O	Reg +2.55V Output
6	N/C	-	No Connection
7	N/C	-	No Connection
8	PGND	-	Power Ground

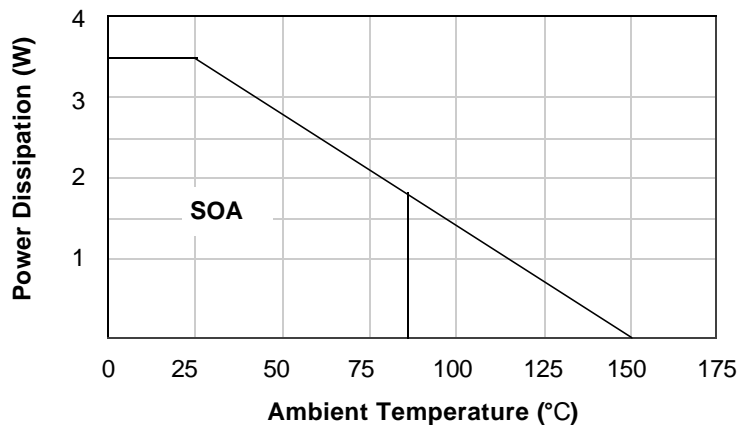
ABSOLUTE MAXIMUM RATINGS(TA=25°C)

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Maximum supply voltage	Vinmax	10	V
ON/OFF voltage	Vonoff	10	V
Power dissipation	Pd	3.5*	W
Operating temperature	Topr	-35 ~ +85	°C
Storage temperature	Tstr	-55 ~ +150	°C
Maximum output current	Iomax	700	mA

Note>

1. When mounted on 100mm X 100mm X 1mm PCB (Phenolic resin material).
2. Power dissipation reduces 28mW/°C for using above Ta=25°C
3. Do not exceed Pd and SOA.

POWER DISSIPATION CURVE



RECOMMENDED OPERATING CONDITIONS

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Supply voltage	Vcc	4.5 ~ 6.0	V
Input voltage	Vin	4.5 ~ 6.0	V

ELECTRICAL CHARACTERISTICS

($V_{in}=5.25V$, $C_o=10\mu F$, $T_a=25^{\circ}C$, unless otherwise specified.)

Characteristics	Symbol	Condition	Min.	Typ.	Max.	Units
Quiescent current	I _{cc}	V _{cc} =5.25V, No-Load	-	9	14	mA
OVP Detecting Voltage	V _{ovp}	V _{cc} =Variable	6.5	-	-	V
3.3V REGULATOR PART						
Output Voltage	V _{out1}	I _o =10mA	3.2	3.3	3.4	V
Line Regulation	dV _{line1}	V _{in} =4.5~6V, I _o =10mA	-	0.035	0.2	%
Load Regulation	dV _{load 1}	V _{in} =5.25V, 10mA < I _o < 500mA	-	0.4	0.8	%
Dropout voltage	V _{drop1}	I _o =500mA	-	1.1	1.3	V
Ripple rejection	RR1	F=120Hz, C _o =10 μ F Tantalum (V _{in} -V _{out})=3V, I _o =200mA	60	70	-	dB
Current limit ^{*Note}	I _{limit1}	V _{in} -V _{out} =2.5V	550	-	-	mA
Temperature stability	Temp1	-	-	0.5	-	%
Output noise voltage 1	V _{n1}	I _o =300mA	-	100	-	μ V
2.55V REGULATOR PART						
Output Voltage	V _{out2}	I _o =10mA	2.473	2.55	2.626	V
Line Regulation	dV _{line2}	V _{in} =4.5~6V, I _o =10mA	-	0.035	0.2	%
Load Regulation	dV _{load2}	V _{in} =5.25V, 10mA < I _o < 300mA	-	0.4	0.8	%
Dropout voltage	V _{drop2}	I _o =300mA	-	1.7	2.1	V
Ripple rejection	RR2	F=120Hz, C _o =10 μ F Tantalum (V _{in} -V _{out})=3V, I _o =100mA	60	70	-	dB
Current limit ^{*Note}	I _{limit2}	V _{in} -V _{out} =3.0V	500	-	-	mA
Temperature stability	Temp2	-	-	0.5	-	%
Output noise voltage 2	V _{n2}	I _o =150mA	-	100	-	μ V

ELECTRICAL CHARACTERISTICS (Continued)

($V_{in} = 5.25V$, $C_o = 10\mu F$, $T_a = 25^\circ C$, unless otherwise specified.)

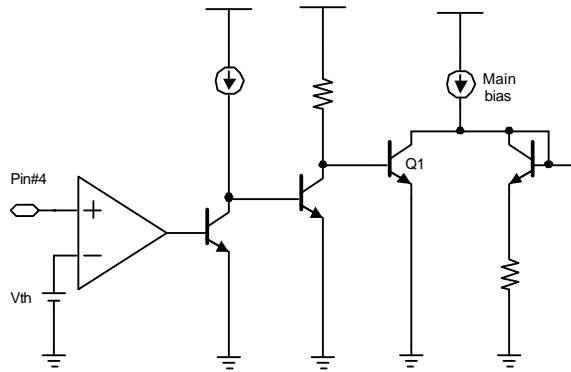
Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
ON/OFF CONTROL PART						
On voltage	V_{on}	$V_{out} = \text{Enabled}$	-	-	0.8	V
Off voltage	V_{off}	$V_{out} = \text{Disabled}$	2.0	-	-	V

* Note
 Don't exceed following current limit.
 ($I_{out1} : 550 \text{ mA}$, $I_{out2} : 500 \text{ mA}$)

APPLICATION SUMMARY

- ON / OFF

When you want to control output of the IP1520, use pin #4 as follows

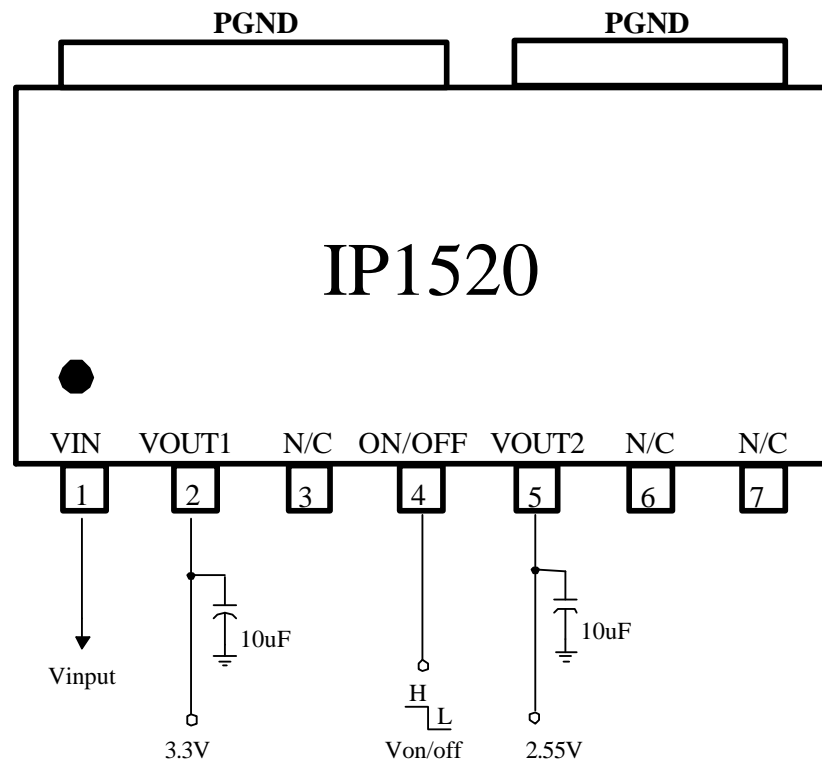


on/off function

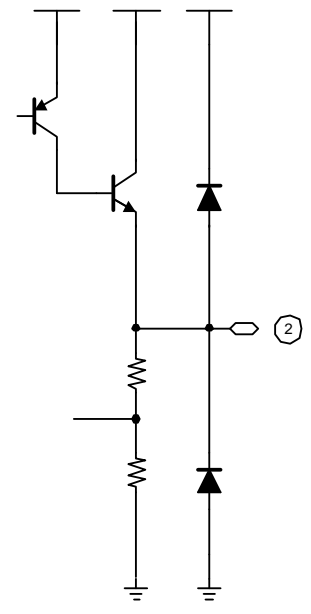
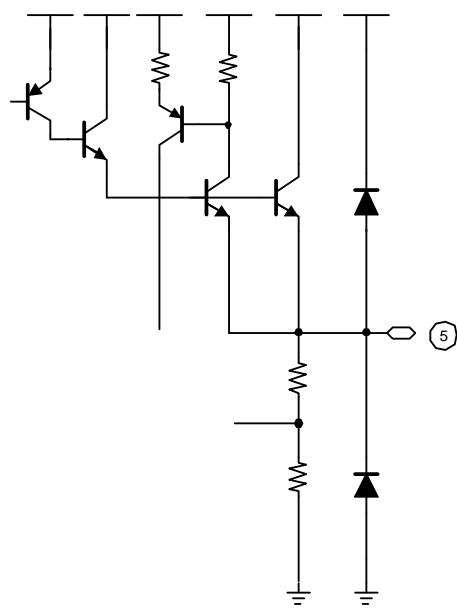
Pin#4	IP1520
HIGH	off
LOW	on

As shown in figure Pin#4 is positive input of the comparator, and the other Input is threshold voltage. If the voltage of the pin#4 rises above threshold voltage, then TR Q1 will be saturated and the main bias current will be shut down.

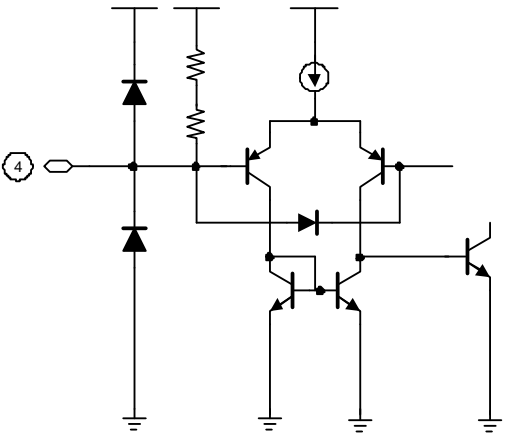
TYPICAL APPLICATION CIRCUIT



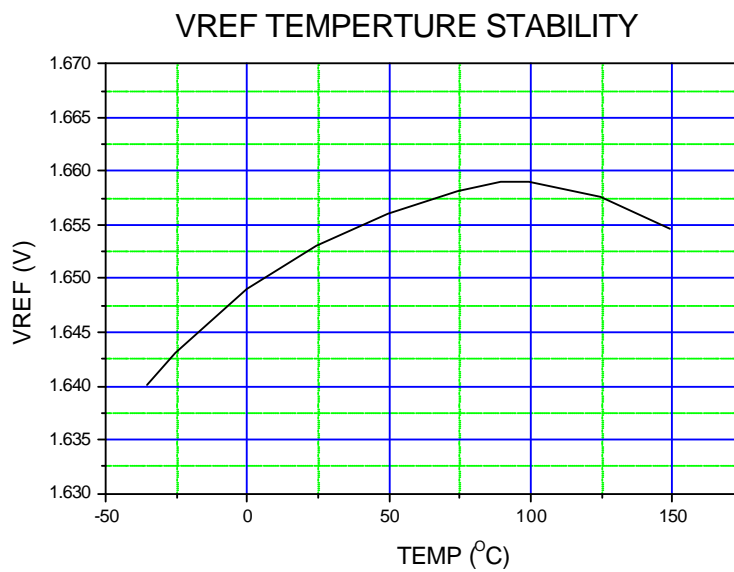
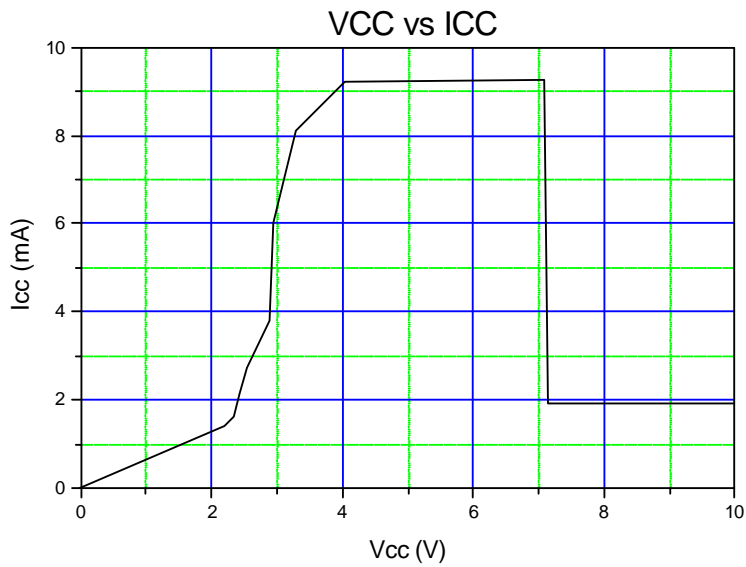
INTERNAL CIRCUIT

Pin no	Pin name	Internal circuit
2	Regulator output1	
5	Regulator Output2	

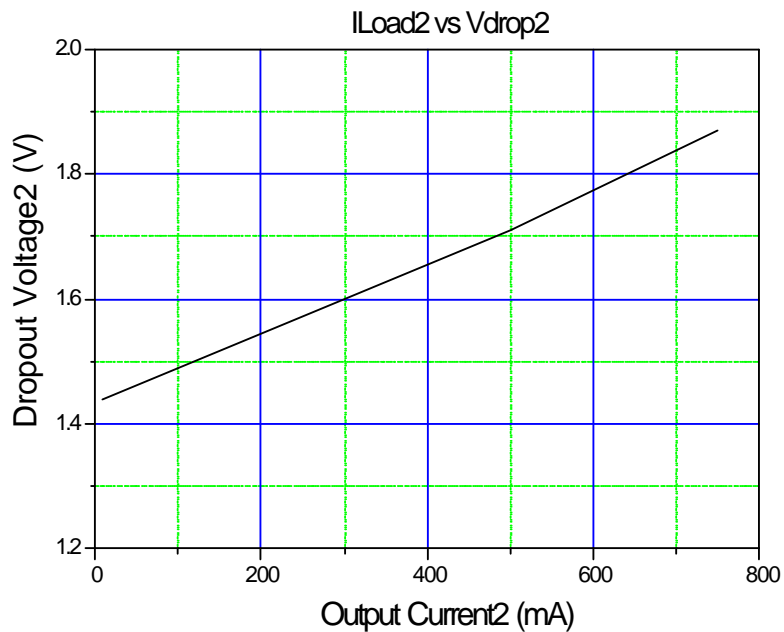
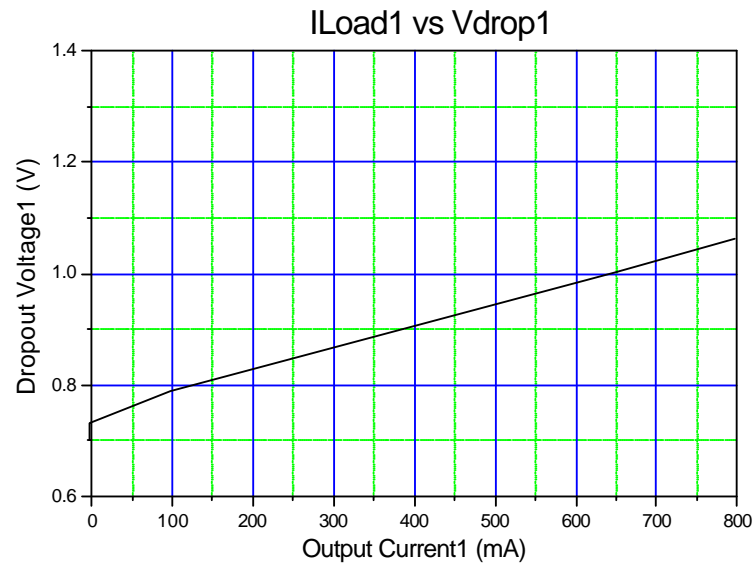
INTERNAL CIRCUIT (Continued)

Pin no	Pin name	Internal circuit
4	ON / OFF	

ELECTRICAL CHARACTERISTICS CURVES

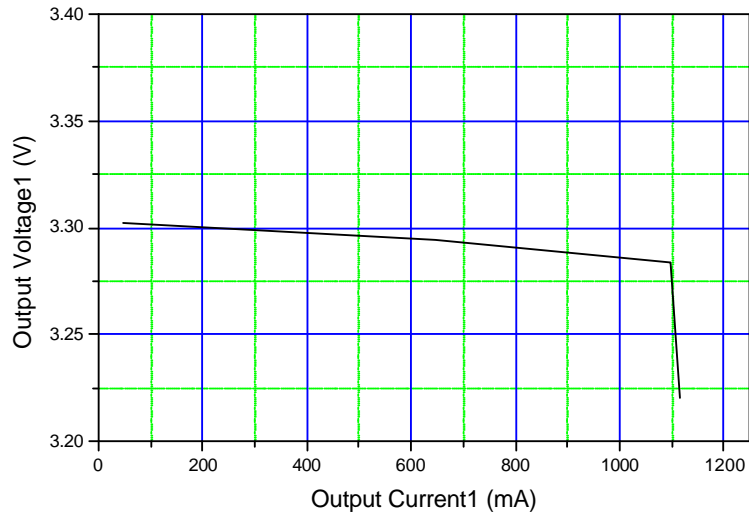


ELECTRICAL CHARACTERISTICS CURVES (Continued)

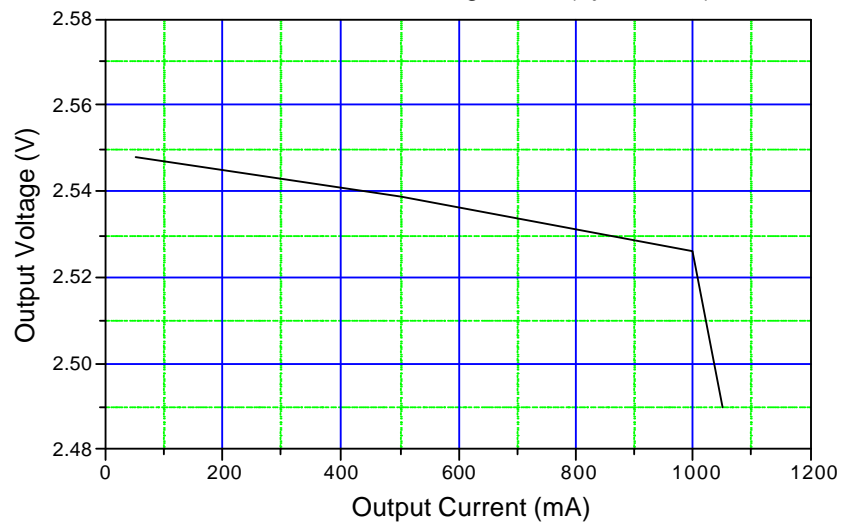


ELECTRICAL CHARACTERISTICS CURVES (Continued)

VOUT1 Load Regulation ($T_j=25^{\circ}\text{C}$)

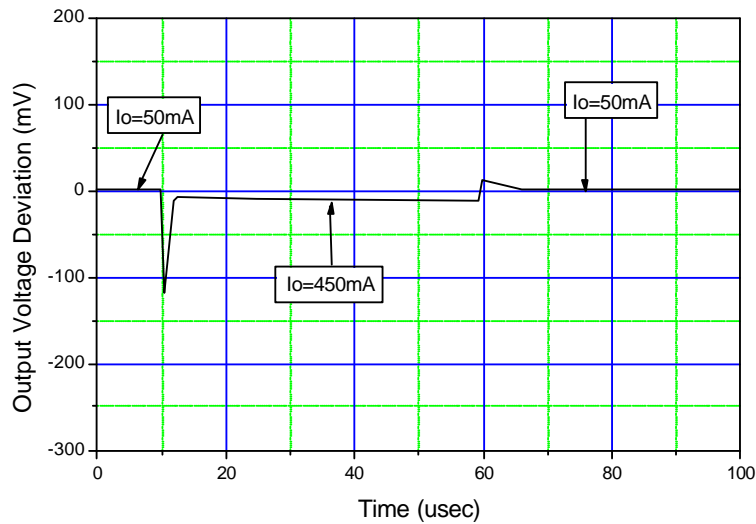


VOUT2 Load Regulation ($T_j=25^{\circ}\text{C}$)

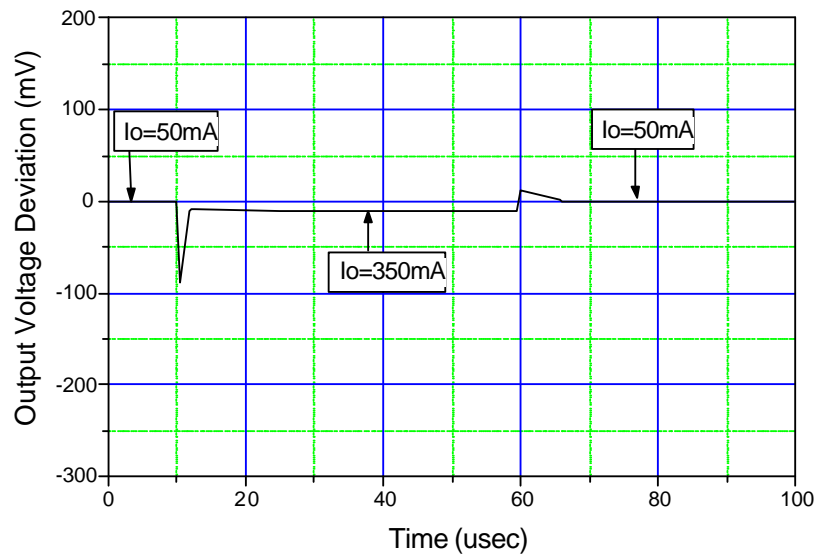


ELECTRICAL CHARACTERISTICS CURVES (Continued)

VOUT1 Load Transient Response



VOUT2 Load Transient Response



PACKAGE DIMENSION

14SOPH-8L

