IP1520

DUAL OUTPUT VOLTAGE SERIES REGULATOR

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.

14SOPH-8L

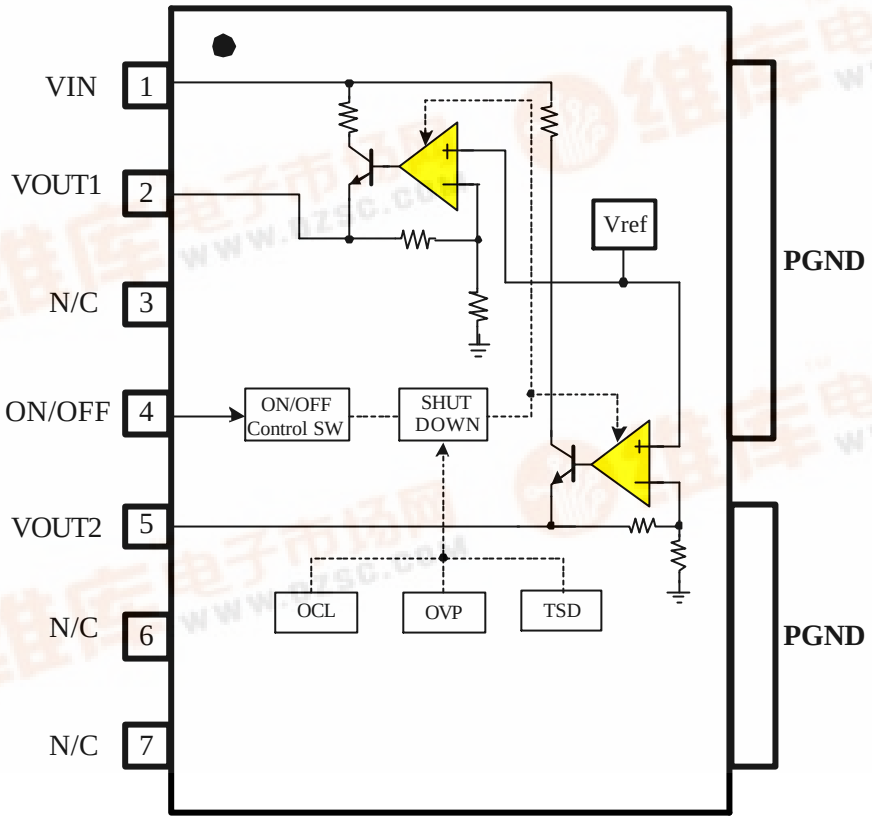
FEATURES

- 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

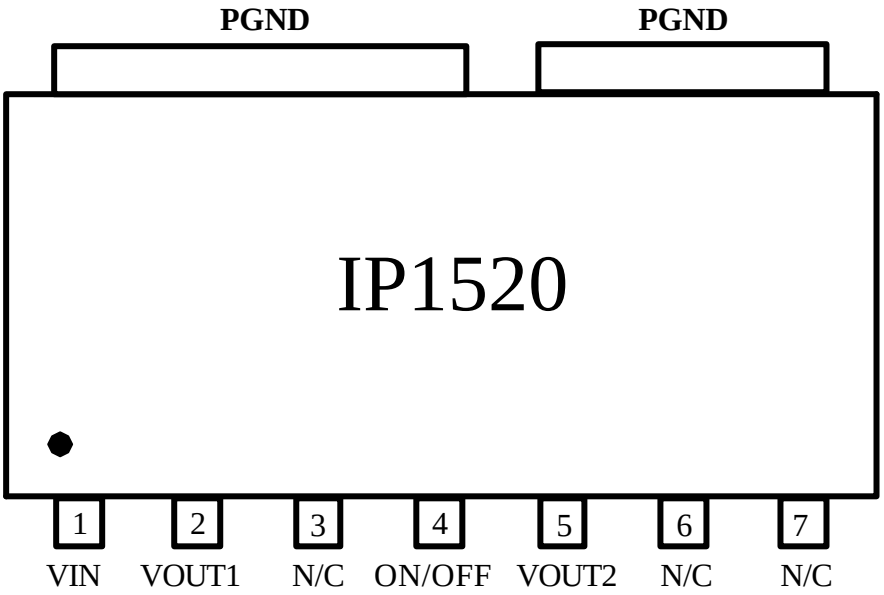
ORDERING INFORMATION

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

BLOCK DIAGRAM



PIN CONNECTIONS



PIN DESCRIPTIONS

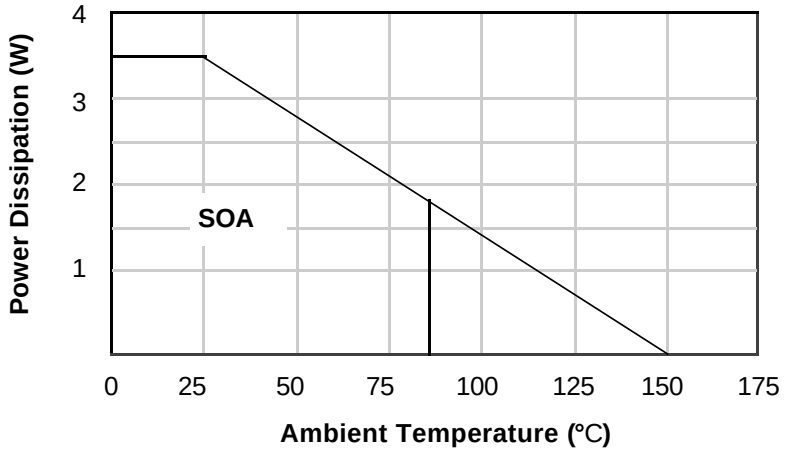
NO	SYMBOL	I/O	DESCRIPTION
1	VIN	I	Input Supply Voltage
2	VOUT1	O	Reg +3.3V Output
3	N/C	-	No Connection
4	ON/OFF	I	ON/OFF Control
5	VOUT2	O	Reg +2.55V Output
6	N/C	-	No Connection
7	N/C	-	No Connection
8	PGND	-	Power Ground

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

(Vin= 5.25V, Co=10uF, Ta = 25°C, unless otherwise specified.)

Characteristics	Symbol	Condition	Min.	Typ.	Max.	Units
Quiescent current	Icc	Vcc=5.25V, No-Load	-	9	14	mA
OVP Detecting Voltage	Vovp	Vcc=Variable	6.5	-	-	V
3.3V REGULATOR PART						
Output Voltage	Vout1	Io=10mA	3.2	3.3	3.4	V
Line Regulation	dVline1	Vin=4.5~6V, Io=10mA	-	0.035	0.2	%
Load Regulation	dVload 1	Vin=5.25V, 10mA < Io < 500mA	-	0.4	0.8	%
Dropout voltage	Vdrop1	Io=500mA	-	1.1	1.3	V
Ripple rejection	RR1	F=120Hz, Co=10uF Tantalum (Vin-Vout)=3V, Io=200mA	60	70	-	dB
Current limit *Note	Ilimit1	Vin-Vout=2.5V	550	-	-	mA
Temperature stability	Temp1	-	-	0.5	-	%
Output noise voltage 1	Vn1	Io=300mA	-	100	-	uV
2.55V REGULATOR PART						
Output Voltage	Vout2	Io=10mA	2.473	2.55	2.626	V
Line Regulation	dVline2	Vin=4.5~6V, Io=10mA	-	0.035	0.2	%
Load Regulation	dVload2	Vin=5.25V, 10mA < Io < 300mA	-	0.4	0.8	%
Dropout voltage	Vdrop2	Io=300mA		1.7	2.1	V
Ripple rejection	RR2	F=120Hz, Co=10uF Tantalum (Vin-Vout)=3V, Io=100mA	60	70		dB
Current limit *Note	Ilimit2	Vin-Vout=3.0V	500	-	-	mA
Temperature stability	Temp2	-	-	0.5	-	%
Output noise voltage 2	Vn2	Io=150mA	-	100	-	uV

ELECTRICAL CHARACTERISTICS (Continued)

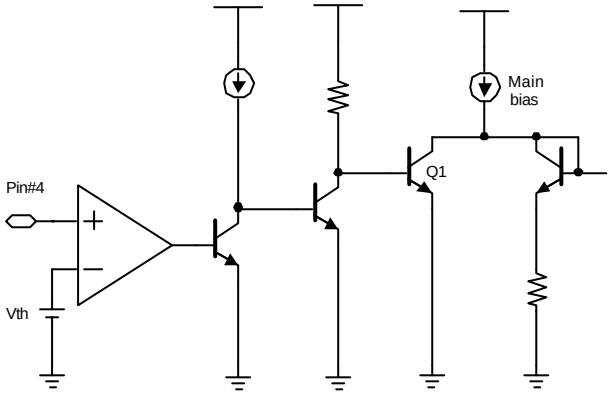
(Vin= 5.25V, Co=10uF, Ta = 25°C, unless otherwise specified.)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
ON/OFF CONTROL PART						
On voltage	Von	Vout=Enabled	-	-	0.8	V
Off voltage	Voff	Vout=Disabled	2.0	-	-	V

* Note
Don' t exceed following current limit.
(Iout1 : 550 mA, Iout2 : 500 mA)

APPLICATION SUMMARY

- **ON / OFF**
  When you want to control output of the IP1520, use pin #4 as follows

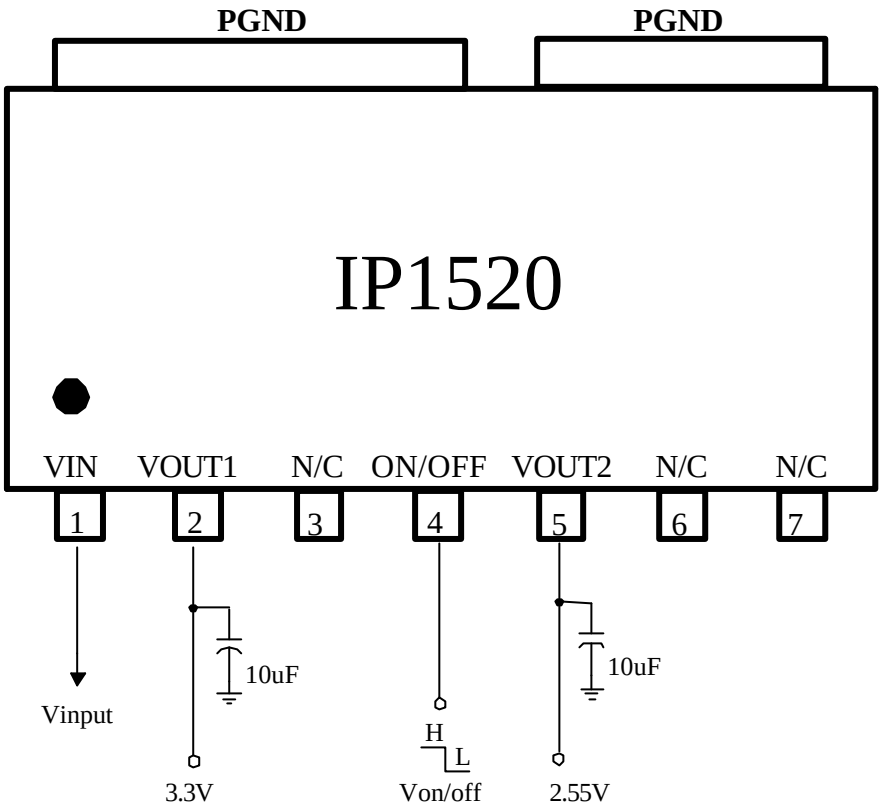


on/off function

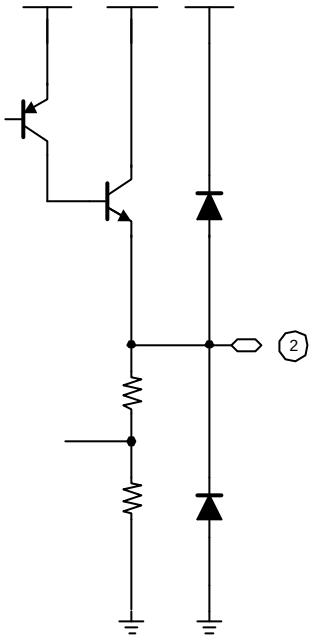
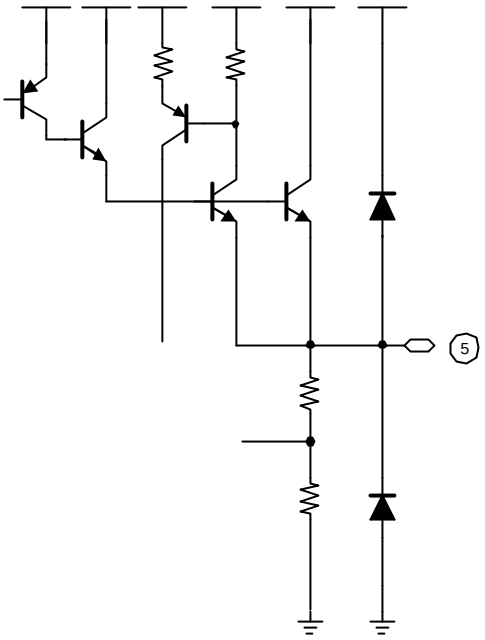
Pin#4	IP1520
HIGH	off
LOW	on

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.

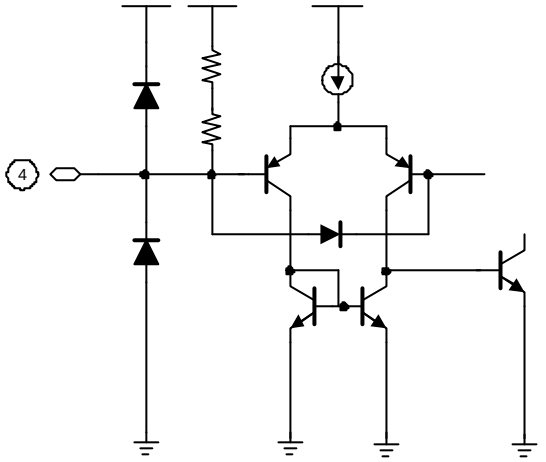
TYPICAL APPLICATION CIRCUIT



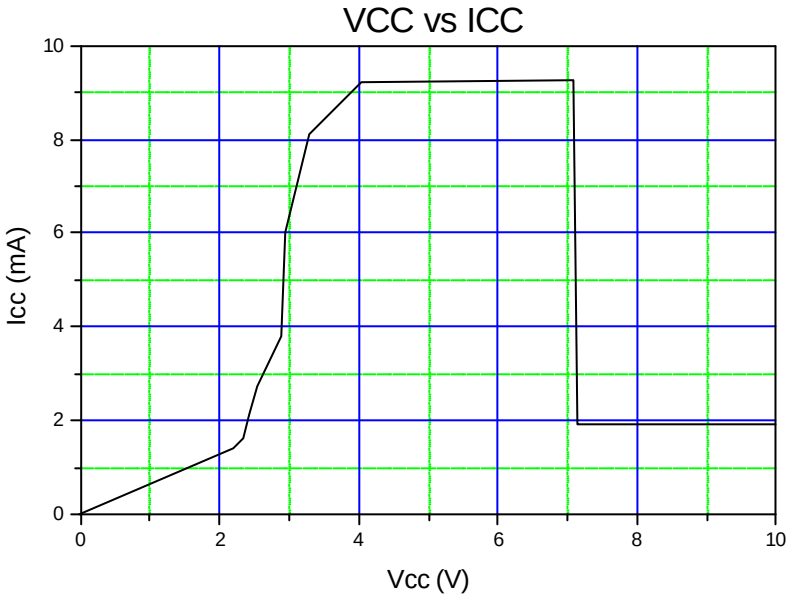
INTERNAL CIRCUIT

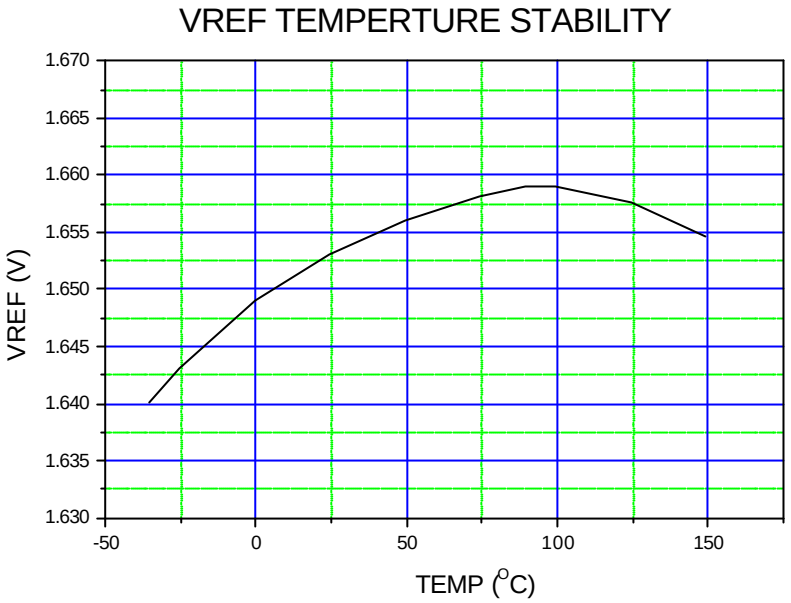
Pin no	Pin name	Internal circuit
2	Regulator output1	
5	Regulator Output2	

INTERNAL CIRCUIT (Continued)

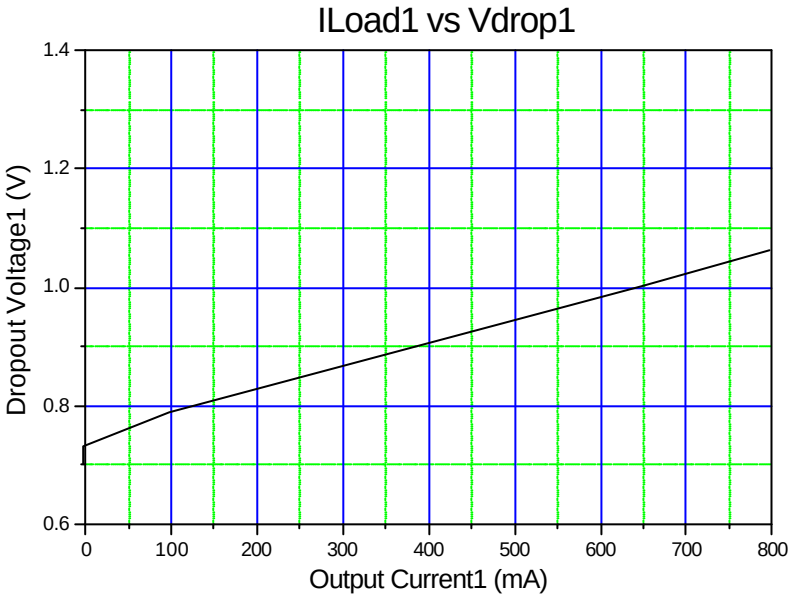
Pin no	Pin name	Internal circuit
4	ON / OFF	

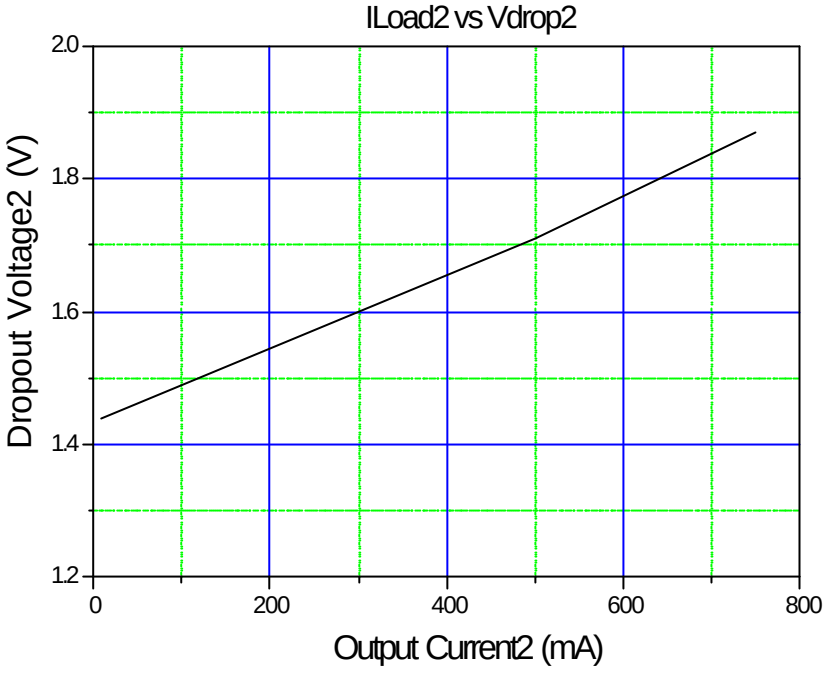
ELECTRICAL CHARACTERISTICS CURVES



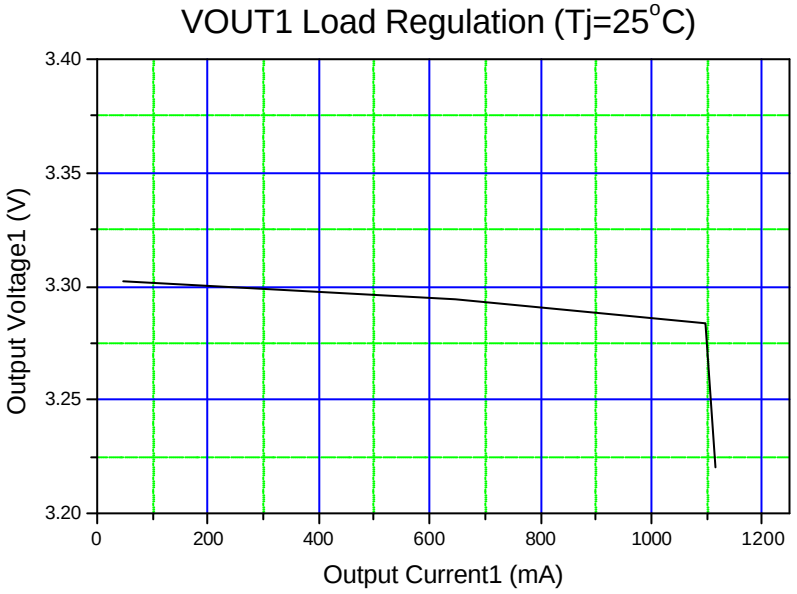


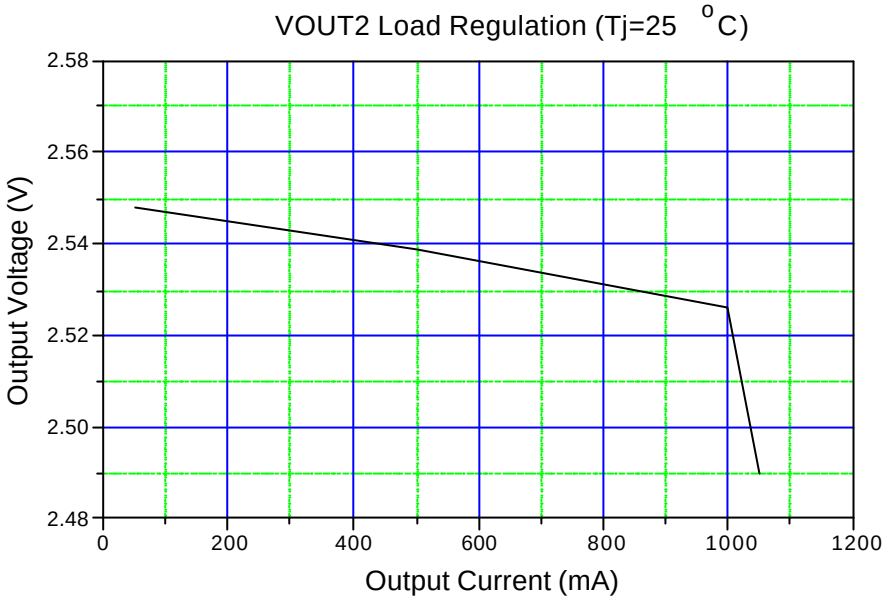
ELECTRICAL CHARACTERISTICS CURVES (Continued)



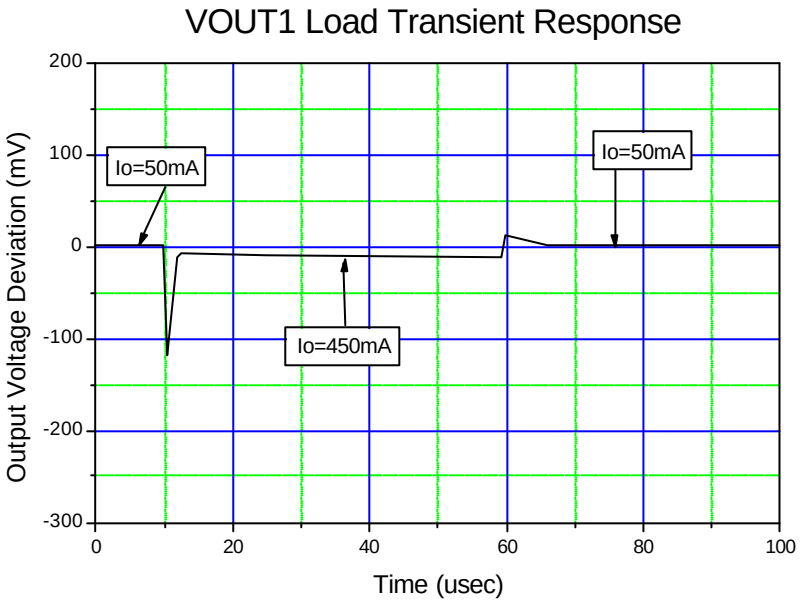


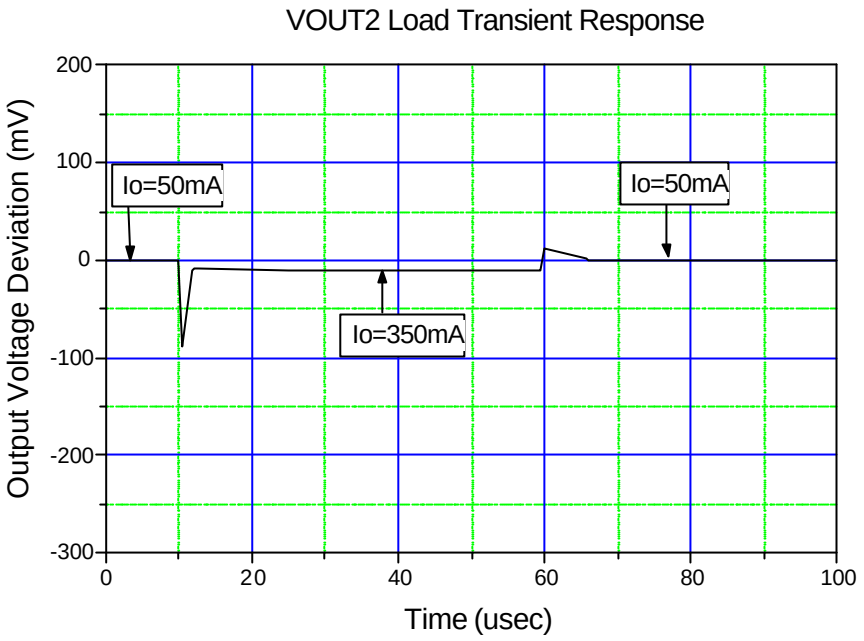
ELECTRICAL CHARACTERISTICS CURVES (Continued)





ELECTRICAL CHARACTERISTICS CURVES (Continued)





PACKAGE DIMENSION

14SOPH-8L