300mA Fast Transient CMOS LDO Regulator TJ9198

FEATURES

- Low Quiescent Current
- Very Low Dropout Voltage
- Excellent Line and Load Regulation
- Guaranteed Output Current of 300mA
- Fixed Output Voltage: 0.8V to 3.6V
- Logic Controlled Shutdown Option
- Stable with 1µF MLCC
- Output Auto Discharge Function (D version)
- Fast Turn-On Time
- Over Current Protection
- Over Temperature Protection
- Available in very small packages: 1mm x 1mm DFN, SC70-5, SOT23-3 and SOT23-5

APPLICATIONS

- Mobile Phones and Smart Phones
- Digital Cameras and Camcorders
- Portable Communication Devices
- GPS, PDAs and handhelds
- Battery-Powered Devices

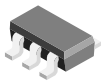
DESCRIPTION

The TJ9198 is a series of 300mA high performance low dropout linear voltage regulator ideal for mobile or portable applications with high output voltage accuracy, very low quiescent current, and very low dropout voltage. The TJ9198 series include enable function to save power moreover the D version provides output auto-discharge function when it is disabled. The series are available with fixed output voltages between 0.8V to 3.6V with 0.1V step. The TJ9198 is stable with 1 µF MLCC.

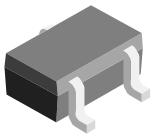
The TJ9198 series are available in a very small 1.0mm x 1.0mm thin DFN package, a small SC70-5 package, a SOT23-3 and a SOT23-5 package, which are ideal for high density form factor portable equipment.

DFN1010-4

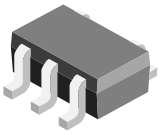
SC70-5



SOT23-3



SOT23-5



ORDERING INFORMATION

Device	Package
TJ9198GQA4-x.xD	DFN1010-4
TJ9198GTF5-x.xD	SC70-5
TJ9198GSF-x.xD	SOT23-3
TJ9198GSF5-x.xD	SOT23-5
TJ9198GQA4-x.xS	DFN1010-4
TJ9198GTF5-x.xS	SC70-5
TJ9198GSF-x.xS	SOT23-3
TJ9198GSF5-x.xS	SOT23-5

x.x = Output Voltage

Please contact us for more information about this product.

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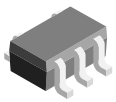
300mA Fast Transient CMOS LDO Regulator TPS730xx

FEATURES

- Low Quiescent Current
- Very Low Dropout Voltage
- Excellent Line and Load Regulation
- Guaranteed Output Current of 300mA
- Fixed Output Voltage: 1.2V, 1.5V, 1.8V 2.5V, 2.8V, 3.0V, and 3.3V
- Logic Controlled Shutdown Option
- Stable with 1µF MLCC
- Output Auto Discharge Function
- Fast Turn-On Time
- Over Current Protection
- Over Temperature Protection
- Available in SOT-23-5L Package



SOT-23-5L

ORDERING INFORMATION

Device	Package
TPS730xxSF5	SOT-23-5L

xx: Output Voltage

APPLICATIONS

- Mobile Phones and Smart Phones
- Digital Cameras and Camcorders
- Portable Communication Devices
- GPS, PDAs and handhelds
- Battery-Powered Devices

DESCRIPTION

The TPS730xx is a series of 300mA high performance low dropout linear voltage regulator ideal for mobile or portable applications with high output voltage accuracy, very low quiescent current, and very low dropout voltage. The TPS730xx series include enable function to save power moreover it provides output auto-discharge function when it is disabled. The series are available with fixed output voltages between 1.2V to 3.3V. The TPS730xx is stable with 1 µF MLCC.

The TPS730xx series are available in a SOT-23-5L package which is ideal for high density form factor portable equipment.

Please contact us for more information about this product.

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Site Web : www.es-france.com

300mA Ultra Low Dropout Linear Regulator TJ4303

FEATURES

- Ultra Low Dropout Voltage
- Compatible with low ESR MLCC as Input / Output Capacitor
- Good Line and Load Regulation
- Guaranteed Output Current of 300mA
- Available in SOT23-5L Package
- Fixed Output: 1.0V, 1.2V, 1.5V, 1.8V, 2.5V, and 3.3V
- Output Auto Discharge Function
- Over-Temperature/Over-Current Protection
- -40 ºC to 125 ºC Junction Temperature Range

SOT23-5L

ORDERING INFORMATION

Device	Package
TJ4303GSF5-ADJ	SOT23-5L
TJ4303GSF5-X.X	

X.X = Output Voltage = 1.0, 1.2, 1.5, 1.8, 2.5, and 3.3

APPLICATION

- LCD TVs and SETTOP Boxes
- Battery Powered Equipment
- Motherboards and Graphic Cards
- Microprocessor Power Supplies
- Peripheral Cards
- High Efficiency Linear Regulators
- Battery Chargers

DESCRIPTION

The TJ4303 series of high performance ultra-low dropout linear regulators operates from 2.5V to 6.0V input supply and provides ultra-low dropout voltage, high output current with low ground current. Wide range of preset output voltage options are available. These ultra-low dropout linear regulators respond fast to step changes in load which makes them suitable for low voltage micro-processor applications. The TJ4303 is developed on a CMOS process technology which allows low quiescent current operation independent of output load current. This CMOS process also allows the TJ4303 to operate under extremely low dropout conditions.

ABSOLUTE MAXIMUM RATINGS (Note 1)

CHARACTERISTIC	SYMBOL	MIN.	MAX.	UNIT
Input Supply Voltage (Survival)	V_{IN}	-	6.5	V
Maximum Output Current	I_{MAX}	-	300	mA
Lead Temperature (Soldering, 5 sec)	T_{SOL}		260	ºC
Storage Temperature Range	T_{STG}	-65	150	ºC
Operating Junction Temperature Range	T_{JOPR}	-40	125	ºC
Package Thermal Resistance *	$\Theta_{JA\text{-}SOT23\text{-}5L}$	265		ºC/W
	$\Theta_{JC\text{-}SOT23\text{-}5L}$	130		ºC/W
Maximum Power Dissipation	$PD_{(MAX\text{-}SOT23\text{-}5L)}$	0.377		W

* Calculated from package in still air, mounted to 2.6mm X 3.5mm(minimum foot print) 2 layer PCB without thermal vias per JESD51 standards

Please contact us for more information about this product.

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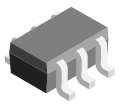
300mA Ultra Low Dropout Linear Regulator TPS73001

FEATURES

- Ultra-Low Dropout Voltage
- Compatible with low ESR MLCC as Input / Output Capacitor
- Good Line and Load Regulation
- Guaranteed Output Current of 300mA
- Adjustable Output Voltage up to 5.0V
- Output Auto Discharge Function
- Over-Temperature/Over-Current Protection
- Available in SOT-23-6L Package



SOT-23-6L

ORDERING INFORMATION

Device	Package
TPS73001SF6	SOT-23-6L

APPLICATIONS

- LCD TVs and SETTOP Boxes
- Battery Powered Equipment
- Motherboards and Graphic Cards
- Microprocessor Power Supplies
- Peripheral Cards
- High Efficiency Linear Regulators
- Battery Chargers

DESCRIPTION

The TPS73001 of high performance ultra-low dropout linear regulator operates from 2.5V to 6.0V input supply and provides ultra-low dropout voltage, high output current with low ground current. Wide range of preset output voltage options are available. These ultra-low dropout linear regulators respond fast to step changes in load which makes them suitable for low voltage micro-processor applications. The TPS73001 is developed on a CMOS process technology which allows low quiescent current operation independent of output load current. This CMOS process also allows the TPS73001 to operate under extremely low dropout conditions.

Please contact us for more information about this product.

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300mA CMOS L.D.O. Regulator LM1108

FEATURES

- Extremely Low Supply Current
- Very Low Dropout Voltage
- 300mA Output Current
- Compatible with MLCC
- High Output Voltage Accuracy +/- 1.4 %
- Standard or Custom Output Voltages
- Over Current and Over Temperature Protection
- Small input/output differential : 0.3V for full load
- Moisture Sensitivity Level 3

APPLICATION

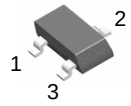
- Battery-Operated Systems
- Portable Computers
- Portable Cameras and Video Recorders
- Medical Instruments
- Cellular/GSM/PHS Phones
- Linear Post-Regulators for SMPS

DESCRIPTION

The LM1108 is a fixed output, high accuracy(typically ±0.5%) CMOS low drop-out regulator. Total supply current is typically 50μA at full load (20 to 60 times lower than in bipolar regulators). LM1108 key features include ultra low noise operation, very low dropout voltage (typically 240mV at full load), and fast response to step changes in load.

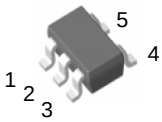
The LM1108 incorporates both over temperature and over current protection. The LM1108 is stable with an output capacitor of only 1μF and has a maximum out put current of 300mA. It is available in a SOT-23 & SOT-89 package

SOT-23



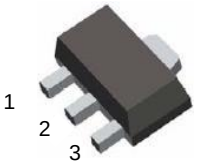
1. GND 2. Vin 3. Vout [A type]
1. Vin 2. Vout 3. GND [B type]

SOT-23-5L (SOT-25)



1. GND 2. Vin 3. Vout 4, 5. N.C

SOT-89



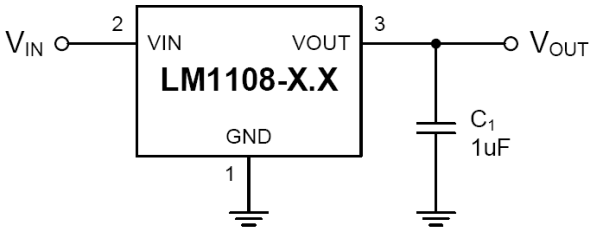
1. GND 2. Vin 3. Vout

ORDERING INFORMATION

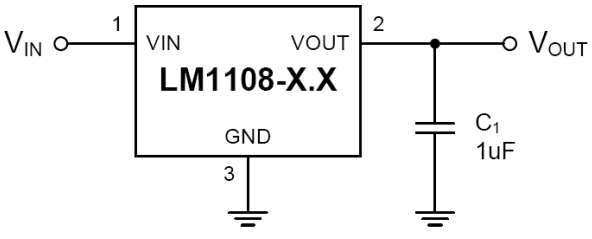
Device	Marking	Package
LM1108SF-X.X (A type)	HXX	SOT-23 3L
LM1108BSF-X.X (B type)	BXX	
LM1108GSF-X.X (H/F)	HGXX	
LM1108SF5-X.X	HXX	SOT-23 5L
LM1108F-X.X	1108 X.X	SOT-89

("X.X" = Output Voltage
= 1.5, 1.8, 2.5, 3.0, 3.3, 3.6, 5.0)

TYPICAL APPLICATION CIRCUIT



A Type



B Type

Absolute Maximum Ratings

CHARACTERISTIC		SYMBOL	Value	UNIT
Supply Voltage		V_{IN}	+6.5	V
Output Current		I_{OUT}	300	mA
Output Voltage		V_{OUT}	V_{SS} -0.3 to V_{IN} +0.3	V
Total Power Dissipation	SOT23 PKG	P_D	230	mW
	SOT89 PKG		500	
Operating Ambient Temperature		Topr	-40 to +85	℃
Lead Temperature (soldering, 5 sec)		-	260	℃
Storage Temperature		Tstg	-40 ~ +125	℃

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Condition	Limit			Units
			Min	Typ	Max	
Output Voltage Accuracy	V_{OUT}	I_{OUT} = 1mA	-1.5	1	1.5	%
		I_{OUT} = 0 ~ 300mA		2		
Line Regulation	$\triangle V_{LINE}$	I_{OUT} = 1mA, (V_{OUT}+0.1V) < V_{IN} < 6.5V		0.1	0.3	%/V
Load Regulation (Note. 1)	$\triangle V_{LOAD}$	V_{IN} = 6V, 0.1mA < I_{OUT} < 300mA, C_{OUT} = 1uF		0.005	0.04	%/mA
Maximum Output Current	Io	V_{IN} = 5V, V_{OUT} > 0.96V Rating	300	500		mA
Current Limit	I_{CL}		400			mA
Ground Current	I_{GND}	I_{OUT} = 0 ~ 300mA		15	30	uA
Dropout Voltage for						
V_{OUT} > 2.5V	V_{DROP}	I_{OUT} = 100mA		100	180	mV
		I_{OUT} = 300mA		300	550	
2.0V < V_{OUT} < 2.5V		I_{OUT} = 100mA		150	300	
		I_{OUT} = 300mA		450	800	
V_{OUT} < 2.0V		I_{OUT} = 100mA		200	400	
		I_{OUT} = 300mA		600	1100	

Note.1: Load Regulation is measured using pulse techniques with duty cycle < 5%

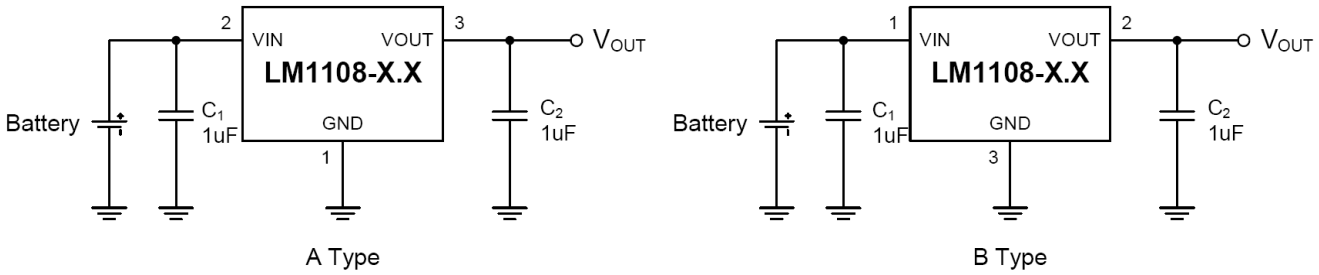
Detail Description

- The LM1108 is a precision, fixed output LDO.

Un like bipolar regulators, the LM1108's supply current does not increase with load current.

In addition, VOUT remains stable and with in regulation over theen tire 0mA to IOUT MAX operating load current range, (an important consideration in RTC and CMOS RAM battery back-up applications).

Figure 3-1shows a typical application circuit.



1. Output Capacitor

1uF(min) capacitor from VOUT to ground is required.

The output capacitor should have an effective series resistance greater than 0Ω and less than 0.1Ω.

1uF capacitor should be connected from VIN to GND if there is more than 10 inches of wire between the regulator and the AC filter capacitor or if a battery is used as the power source. As well as Low ESR Ceramic Capacitors, aluminum electrolytic or tantalum capacitor types can also be used. (Since many aluminum electrolytic capacitors freeze at approximately -30°C, solid tantalums are recommended for applications operating below -25°C)

When operating from sources other than batteries,supply-noise rejection and transient response can be improved by increasing the value of the input and output capacitors and employing passive filtering techniques.

2. THERMAL CONSIDERATIONS

2.1 Thermal Shutdown

Integrated thermal protection circuitry shuts the regulator off when die temperature exceeds150°C.

The regulator remains off until the die temperature drops to approximately 140°C.

2.2 Power Dissipation

The amount of power the regulator dissipates is primarily a function of input and output voltage, and output current. The following equation is used to calculate worst case actual power dissipation:

EQUATION 2-1:

$$P_D \approx (V_{INMAX} - V_{OUTMIN}) \times I_{LOADMAX}$$

where, P_D = Worst case actual power dissipation

V_{INMAX} = Maximum voltage on V_{IN}

V_{OUTMIN} = Minimum regulator output voltage

$I_{LOADMAX}$ = Maximum output (load) current

EQUATION 2-2:

$$P_{DMAX} = \frac{(T_{JMAX} - T_{AMAX})}{\Theta_{JA}}$$, where all items are previously defined.

The maximum allowable power dissipation (Equation 2-2) is a function of the maximum ambient temperature (T_{AMAX}), the maximum allowable die temperature (T_{JMAX}) and the thermal resistance from junction-to-air(θ_{JA}).

REVISION NOTICE

The description in this datasheet can be revised without any notice to describe its electrical characteristics properly.

600mA CMOS L.D.O. Regulator LM8805

FEATURES

- Maximum output current : 600mA
- Highly accurate: Output voltage ±1.5%
- Stability with Low ESR Capacitors
- Low power consumption
- On-chip Protections: Thermal, Short Circuit
- Small input/output differential: 600mV at 600mA
- Adjustable version

APPLICATION

- Battery-Operated Systems
- Portable Computers
- Portable Cameras and Video Recorders
- Reference Voltage Sources
- Instrumentation
- Pagers

DESCRIPTION

The LM8805 series is a low-dropout linear regulator. There are devices designed specifically for battery-operated systems. Ground current is very small (50uA-Typ), that significantly extending battery life. Low power consumption and high accuracy is achieved through CMOS and programmable fuse technologies. Output voltage: 1.5V to 6.0V.

SOT-23 5L PKG

SOT-89 3L PKG

ORDERING INFORMATION

Device	Package
LM8805SF5-x.x	SOT-23-5L
LM8805F-x.x	SOT-89

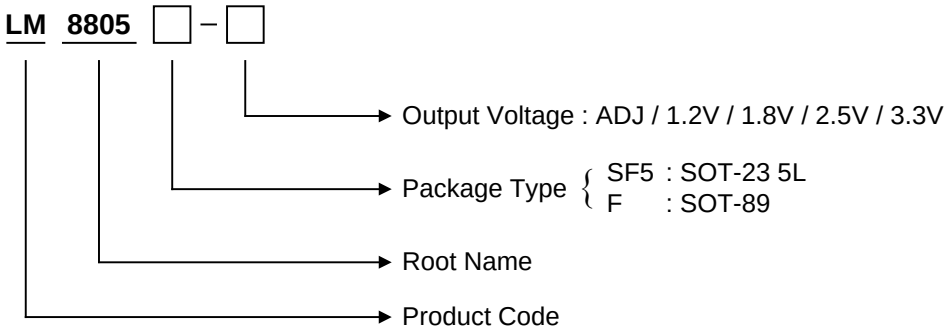
x.x = Output Voltage = ADJ, 1.2V, 1.8V, 2.5V, 3.3V

Absolute Maximum Ratings

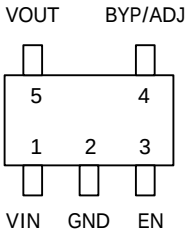
CHARACTERISTIC	SYMBOL	MIN.	MAX.	UNIT
Input Voltage	V_{IN}	-	8	V
Output Current	I_{OUT}	-	1	A
Output Voltage	V_{OUT}	V_{SS} -0.3	V_{IN} +0.3	V
Storage Temperature Range	T_{STG}	-40	125	℃
Operating Ambient Temperature	T_A	-40	125	℃

Ordering Information

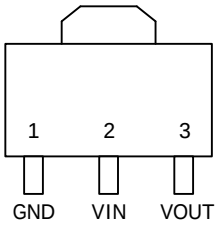
V_{OUT}	Package	Order No.	Description	Package Marking	Supplied As	Status
ADJ	SOT-23 5L	LM8805SF5-ADJ	600mA, Enable, Adjustable	G00Y	Reel	Active
1.2 V	SOT-23 5L	LM8805SF5-1.2	600mA, Fixed	G12Y	Reel	Active
	SOT-89 3L	LM8805F-1.2	600mA, Fixed	8805 1.2 Yww	Reel	Contact us
1.8V	SOT-23 5L	LM8805SF5-1.8	600mA, Fixed	G18Y	Reel	Active
2.5 V	SOT-23 5L	LM8805SF5-2.5	600mA, Fixed	G25Y	Reel	Active
	SOT-89 3L	LM8805F-2.5	600mA, Fixed	8805 2.5 Yww	Reel	Active
3.3 V	SOT-23 5L	LM8805SF5-3.3	600mA, Fixed	G33Y	Reel	Active
	SOT-89 3L	LM8805F-3.3	600mA, Fixed	8805 3.3 Yww	Reel	Active



PIN CONFIGURATION



SOT-23 5L



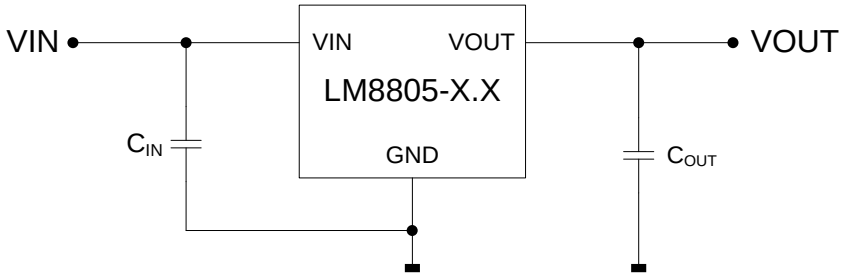
SOT-89 3L

PIN DESCRIPTION

Pin No.	SOT-23 5L		SOT-89 3L	
	Name	Function	Name	Function
1	V_{IN}	Input Supply	GND	Ground
2	GND	Ground	V_{IN}	Input Supply
3	EN	Enable	V_{OUT}	Output Voltage
4	BYP/ADJ	Bypass for Fixed output or Output adjust for Adjustable output	-	-
5	V_{OUT}	Output Voltage	-	-

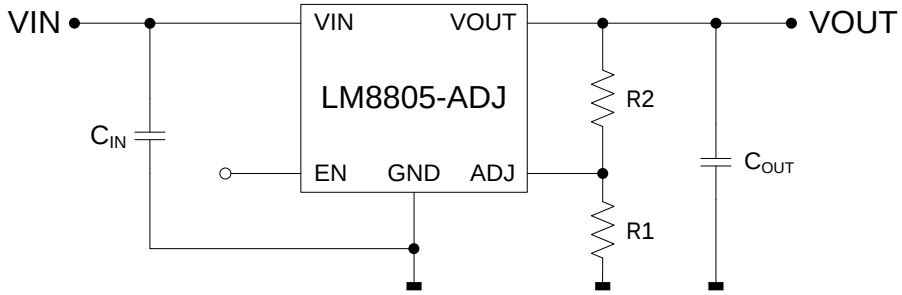
TYPICAL APPLICATION

Typical 3 Pin Application Circuit

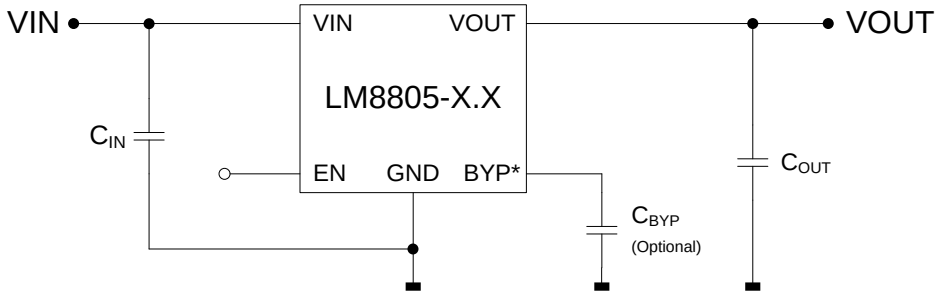


Typical 5 Pin Application Circuit

- Output Adjustment (Adjustable version)



- Fixed Voltage Application



* Note) BYP pin can be left open if low noise operation is not required.

ELECTRICAL CHARACTERISTICS

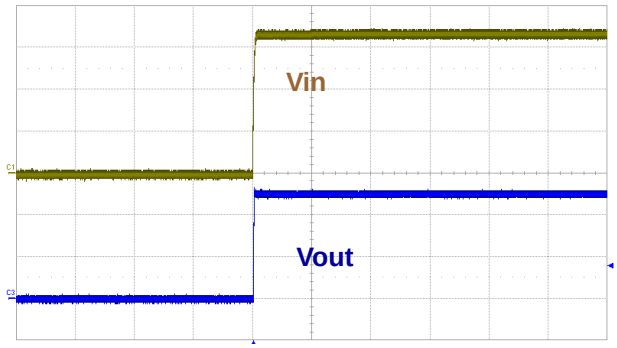
(At T_A =25℃, V_{IN} = V_{OUT}(nominal) + 1V, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage Accuracy	V_O	I_O = 1mA I_O = 1 to 600mA	-1.5 -3		+1.5 +2	%
Adjustable Voltage	V_{ADJ}	I_O = 1mA I_O = 1 to 600mA	1.251 1.232	1.27	1.289 1.295	V
line Regulation	ΔV_{LINE}	I_O = 1mA, (V_{OUT}+1V)<V_{IN}<6.5V	-0.3	0.05	0.3	%/V
Load Regulation(Note 1)	ΔV_{LOAD}	1mA ≤ I_O ≤ 600mA, C_{OUT} = 1uF		0.5	1.5	%
Dropout Voltage	V_{DROP}	V_{OUT} > 2.8V, I_O=600mA		600	1000	mV
		2.0V < V_{OUT} ≤ 2.8V, I_O=600mA		900	1400	
		V_{OUT} ≤ 2.0V, I_O=600mA		1300	1900	
Maximum Output Current	$I_{O(MAX)}$	V_{OUT} > 0.96*VRating	600			mA
Current Limit	I_{CL}			1300		mA
EN Exit Delay		C_{BP} = 0uF, C_{OUT} = 1uF I_O = 100mA		600		usec
EN Input Bias Current		V_{EN} = GND			100	nA
EN Input Low Current		V_{EN} = V_{IN}	-1	-0.3		uA
EN Supply Current		V_{EN} = V_{IN}		0.01	1	uA
EN Input Threshold Low	V_{IL}	V_{IN} = 2.5 to 5.5V			0.4	V
EN Input Threshold High	V_{IH}	V_{IN} = 2.5 to 5.5V	2			V
Ground Pin Current	I_{GND}	I_{OUT} = 0mA to 600mA		50	85	uA
	I_{GND_OFF}	V_{EN} = 0V	-	-	1	uA
Thermal Shutdown Temperature	T_{SD}	I_{OUT} = 10mA		155		℃
Thermal Shutdown Hysterisis	ΔT_{SD}	I_{OUT} = 10mA		10		℃
V_O Temperature Coefficient		I_{OUT} = 10mA		30		ppm
Power Supply Ripple Rejection	PSRR	I_{OUT} = 100mA, C_{OUT} = 2.2uF, f = 100Hz		55		dB

Note 1. Load Regulation is measured using pulse techniques with duty cycle < 5%

TYPICAL OPERATING CHARACTERISTICS

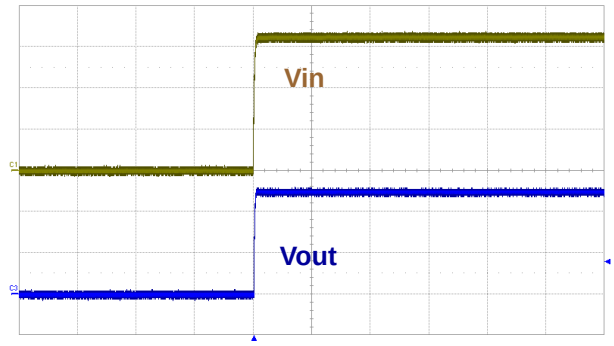
- VIN = 3.3V, VOUT = 2.5V



VIN : 1.0V/div, VOUT : 1.0V/div, Time : 10ms/div

Start Up @ Iout=0.3A

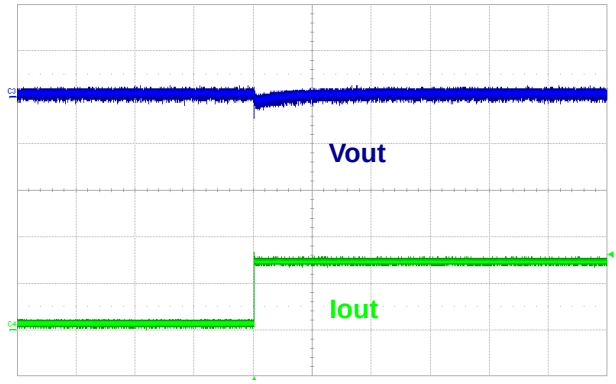
(Cin=10uF, Cout=10uF, R2=36KΩ, R1=35KΩ)



VIN : 1.0V/div, VOUT : 1.0V/div, Time : 10ms/div

Start Up @ Iout=0.6A

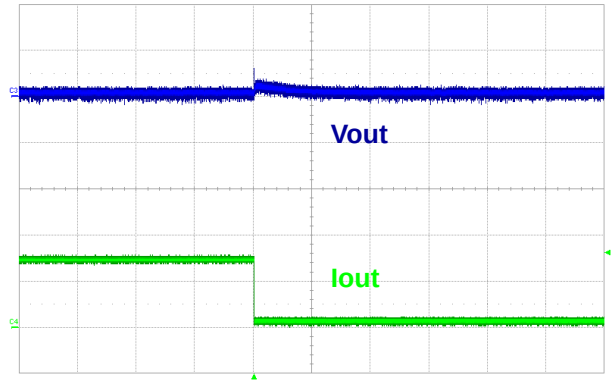
(Cin=10uF, Cout=10uF, R2=36KΩ, R1=35KΩ)



VOUT : 50mV/div, IOUT : 0.2A/div, Time : 50ms/div

Load Transient Response

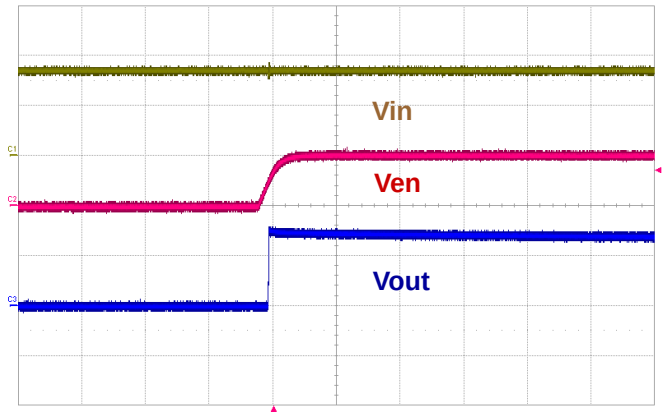
(Cin=10uF, Cout=10uF, R2=36KΩ, R1=35KΩ)



VOUT : 50mV/div, IOUT : 0.2A/div, Time : 50ms/div

Load Transient Response

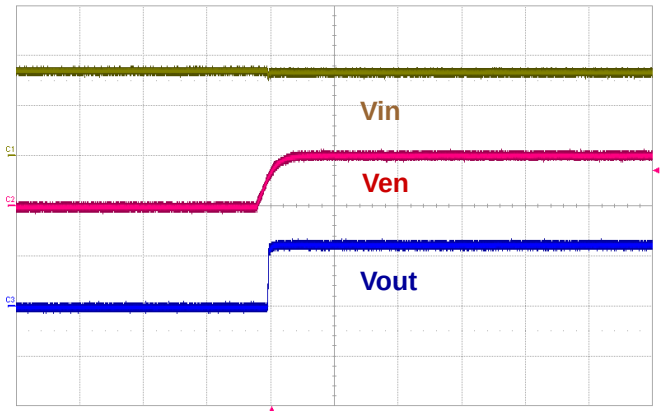
(Cin=10uF, Cout=10uF, R2=36KΩ, R1=35KΩ)



VIN : 2.0V/div, VEN : 2.0V, VOUT : 2.0V/div, Time : 1m/div

Start Up by external VEN @ Iout=0A

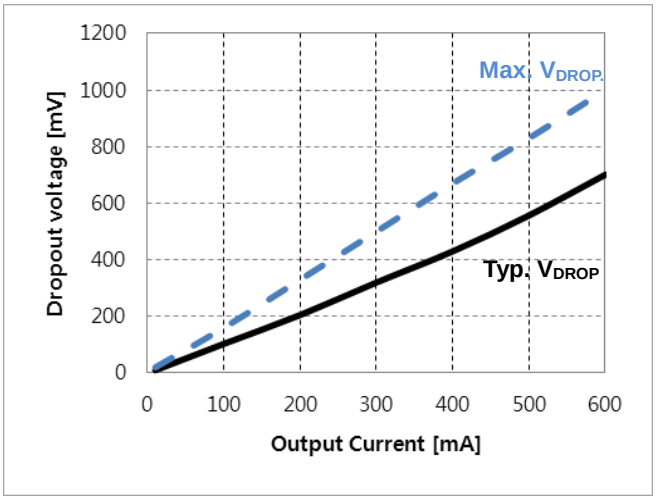
(Cin=10uF, Cout=10uF, R2=36KΩ, R1=35KΩ)



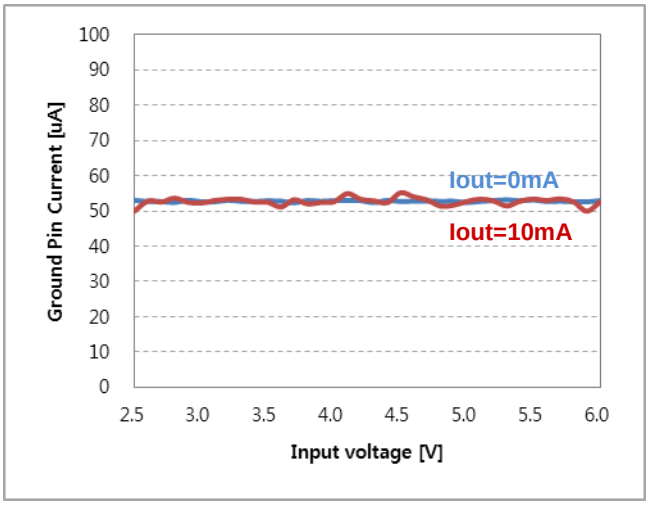
VIN : 2.0V/div, VEN : 2.0V, VOUT : 2.0V/div, Time : 1ms/div

Start Up by external VEN @ Iout=0.6A

(Cin=10uF, Cout=10uF, R2=36KΩ, R1=35KΩ)



Dropout Voltage @ Vout=3.3V



Ground Currnet @ Iout=0A / 10mA

(Cin=10uF, Cout=10uF, R2=36KΩ, R1=35KΩ))

APPLICATION INFORMATION

Detailed Description

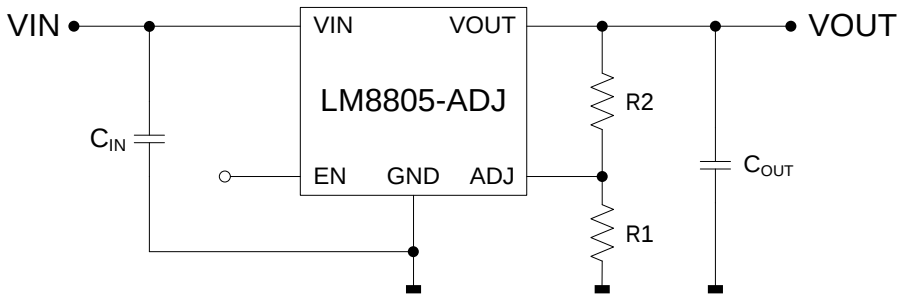
The LM8805 consists of a high-precision voltage reference, an error correction circuit, and a current limited output driver. With good transient responses, output remains stable even during load changes. The SHDN input enables the output to be turned off, resulting in reduced power consumption.
The LM8805 incorporates both over-temperature and over-current protection.

External Capacitors

The LM8805 can stable work with cheap MLCC output Capacitor.
The LM8805 having high ripple rejection ratios, the series can be used with power supply noise. A 470pF capacitor from the Bypass input to ground reduces noise present on the internal reference, which in turn significantly reduces output noise. If output noise is not a concern, this input may be left unconnected. Larger capacitor values Cbp be used, but results in a longer time period to rated output voltage when power is initially applied.

Output Adjustment (Adjustable Version)

The operating condition of V_{IN} and the operating characteristics of V_{OUT} depend on the dropout voltage performance in accordance with output load current.



$$V_{OUT} = V_{ADJ}(1+R2/R1)$$

Maximum Output Current Capability

The LM8805 can deliver a continuous current of 600mA over the full operating junction temperature range. However, the output current is limited by the restriction of power dissipation which differs from packages. A heat sink may be required depending on the maximum power dissipation and maximum ambient temperature of application. With respect to the applied package, the maximum output current of 600mA may be still undeliverable due to the restriction of the power dissipation of LM8805. Under all possible conditions, the junction temperature must be within the range specified under operating conditions.
The temperatures over the device are given by:

$T_C = T_A + P_D \text{ X } \theta_{CA}$
$T_J = T_C + P_D \text{ X } \theta_{JC}$
$T_J = T_A + P_D \text{ X } \theta_{JA}$

where T_J is the junction temperature, T_C is the case temperature, T_A is the ambient temperature, P_D is the total power dissipation of the device, θ_{CA} is the thermal resistance of case-to-ambient, θ_{JC} is the thermal resistance of junction-to-case, and θ_{JA} is the thermal resistance of junction to ambient.
The total power dissipation of the device is given by:

$$P_D = P_{IN} - P_{OUT} = (V_{IN} \text{ X } I_{IN}) - (V_{OUT} \text{ X } I_{OUT})$$
$$= (V_{IN} \text{ X } (I_{OUT} + I_{GND})) - (V_{OUT} \text{ X } I_{OUT}) = (V_{IN} - V_{OUT}) \text{ X } I_{OUT} + V_{IN} \text{ X } I_{GND}$$

where I_{GND} is the operating ground current of the device which is specified at the Electrical Characteristics. The maximum allowable temperature rise (T_{Rmax}) depends on the maximum ambient temperature (T_{Amax}) of the application, and the maximum allowable junction temperature (T_{Jmax}):

$$T_{Rmax} = T_{Jmax} - T_{Amax}$$

The maximum allowable value for junction-to-ambient thermal resistance, θ_{JA}, can be calculated using the formula:

$$\theta_{JA} = T_{Rmax} / P_D$$

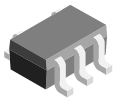
REVISION NOTICE

The description in this datasheet is subject to change without any notice to describe its electrical characteristics properly.

600mA CMOS LDO Regulator TPS740xx

FEATURES

- Guaranteed Output Current of 600mA
- Highly Output Accuracy: ±1.5%
- Very Low Quiescent Current
- Very Low Dropout Voltage
- Excellent Line and Load Regulation
- Fixed Output Voltage: 1.2V, 1.8V, 2.5V, and 3.3V
- Adjustable Output Voltage: 1.27V to 5.0V
- Logic Controlled Shutdown Option
- Stable with Low ESR MLCC
- Over Current Protection
- Over Temperature Protection
- Available in SOT-23-5L Package



SOT-23-5L

ORDERING INFORMATION

Device	Package
TPS740xxSF5	SOT-23-5L

xx: Output Voltage

APPLICATIONS

- Mobile Phones and Smart Phones
- Digital Cameras and Camcorders
- Portable Communication Devices
- GPS, PDAs and handhelds
- Battery-Powered Devices

DESCRIPTION

The TPS740xx is a series of 600mA high performance low dropout linear voltage regulator ideal for mobile or portable applications with high output voltage accuracy, very low quiescent current, and very low dropout voltage.

The series are available with fixed output voltages between 1.2V to 3.3V and adjustable output voltage from 1.27V to 5.0V.

The TPS740xx include enable function to save power and it is stable with 1.0 µF MLCC.

The TPS740xx series are available in a SOT-23-5L package which are ideal for high density form factor portable equipment.

Please contact us for more information about this product.

ES France - Département Composants & Modules
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Fax. 01 47 01 16 22
e-mail : comp@es-france.com
Site Web : www.es-france.com

600mA Ultra Low Dropout Linear Regulator TJ4306

FEATURES

- Ultra-Low Dropout Voltage
- Compatible with low ESR MLCC as Input/ Output Capacitor
- Good Line and Load Regulation
- Guaranteed Output Current of 600 mA
- Adjustable Output Voltage up to 4.5 V
- Output Auto Discharge Function
- Over-Temperature/ Over-Current Protection
- Available in SOT-23-5L Package

SOT-23-5L

ORDERING INFORMATION

Device	Package
TJ4306GSF5-ADJ	SOT-23-5L

APPLICATIONS

- LCD TVs and SETTOP Boxes
- Battery Powered Equipment
- Motherboards and Graphic Cards
- Microprocessor Power Supplies
- Peripheral Cards
- High Efficiency Linear Regulators
- Battery Chargers

DESCRIPTION

The TJ4306 of high performance ultra-low dropout linear regulator operates from 2.5 V to 6.0 V input supply and provides ultra-low dropout voltage, high output current with low ground current. Wide range of preset output voltage options are available. These ultra-low dropout linear regulators respond fast to step changes in load which makes them suitable for low voltage micro-processor applications. The TJ4306 is developed on a CMOS process technology which allows low quiescent current operation independent of output load current. This CMOS process also allows the TJ4306 to operate under extremely low dropout conditions.

Please contact us for more information about this product.

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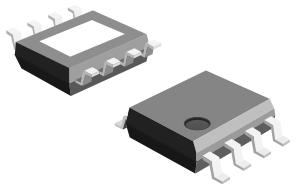
e-mail : comp@es-france.com
Site Web : www.es-france.com

Dual Channel Fixed Voltage ULDO Linear Regulator LM2C1117

FEATURES

- Dual Channel Ultra Low Dropout Voltage
- Master (Channel 1) - Slave (Channel 2) Configuration
- Compatible with low ESR MLCC as Input / Output Capacitor
- Guaranteed Output Current of 600 / 600mA
- Available in SOP8 and SOP8-PP
- Fixed Output Voltage: 1.0V ~ 3.6V
- Over-Temperature Protection
- Over-Current Protection

SOP8 / SOP8-PP



ORDERING INFORMATION

Device	Package
LM2C1117GD-XXYY	SOP8
LM2C1117GDP-XXYY	SOP8-PP

XX : Output Voltage Code of Channel 1 (VOUT1)
YY : Output Voltage Code of Channel 2 (VOUT2)

APPLICATION

- LCD TVs and SETTOP Boxes
- Battery Powered Equipment
- Motherboards and Graphic Cards
- Microprocessor Power Supplies
- Peripheral Cards
- High Efficiency Linear Regulators
- Battery Chargers

DESCRIPTION

The LM2C1117 is a dual channel ultra low-dropout voltage regulator capable of sourcing 0.6A per channel with low dropout voltage and operates from 2.5V to 5.5V input supply. The device is designed to have a fast transient response and is stable with 1μF low ESR capacitor. It is available in fixed output-voltage variants from 1.0V to 3.6V for each channel.

The LM2C1117 features master and slave configuration. Channel 1 is the master channel and generates reference voltage. Channel 2 is the slave channel and uses reference voltage generated from channel 1. To operate channel 2, channel 1 must be turned on.

ABSOLUTE MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	MIN.	MAX.	UNIT
Input Supply Voltage (Survival)	V_{IN1}, V_{IN2}	-	6.5	V
Enable Input Voltage (Survival)	V_{EN1}, V_{EN2}	-	6.5	V
Maximum Continuous Output Current	I_{MAX}	-	600 / 600	mA
Lead Temperature	T_{SOL}		260	ºC
Storage Temperature Range	T_{STG}	-65	150	ºC
Operating Junction Temperature Range	T_{JOPR}	-40	125	ºC
Package Thermal Resistance *	$\Theta_{JA\text{-}SOP8\text{-}PP}$	68		ºC/W
	$\Theta_{JC\text{-}SOP8\text{-}PP}$	15		

* Calculated from package in still air, mounted to 2.6mm X 3.5mm(minimum foot print) 2 layer PCB without thermal vias per JESD51 standards.

Please contact us for more information about this product.

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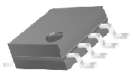
e-mail : comp@es-france.com
Site Web : www.es-france.com

Dual Channel Fixed Voltage ULDO Linear Regulator TJ5641

FEATURES

- Dual Channel Ultra Low Dropout Voltage
- Compatible with low ESR MLCC as Input / Output Capacitor
- Good Line and Load Regulation
- Guaranteed Output Current of 600/600mA
- Available in SOP-8, SOP-8PP
- Fixed Output Voltage: 1.0V ~ 3.3V
- Over-Temperature Protection
- Over-Current Protection

SOP-8 / SOP-8PP



APPLICATION

- LCD TVs and SETTOP Boxes
- Battery Powered Equipments
- Motherboards and Graphic Cards
- Microprocessor Power Supplies
- Peripheral Cards
- High Efficiency Linear Regulators
- Battery Chargers

DESCRIPTION

The TJ5641 of two channels high performance ultra-low dropout linear regulators operates from 2.5V to 5.5V input supply and provides ultra-low dropout voltage with low ground current. These ultra-low dropout linear regulators respond fast to step changes in load which makes them suitable for low voltage micro-processor applications. The TJ5641 is developed on a CMOS process technology which allows low quiescent current operation independent of output load current. This CMOS process also allows the TJ5641 to operate under extremely low dropout conditions.

ORDERING INFORMATION

Device	Package
TJ5641GD-XXYY	SOP-8
TJ5641HGD-XXYY	
TJ5641GDP-XXYY	SOP-8PP
TJ5641HGDP-XXYY	

XX : Output Voltage code of channel 1 (VOUT1)
YY : Output Voltage code of channel 2 (VOUT2)

ABSOLUTE MAXIMUM RATINGS

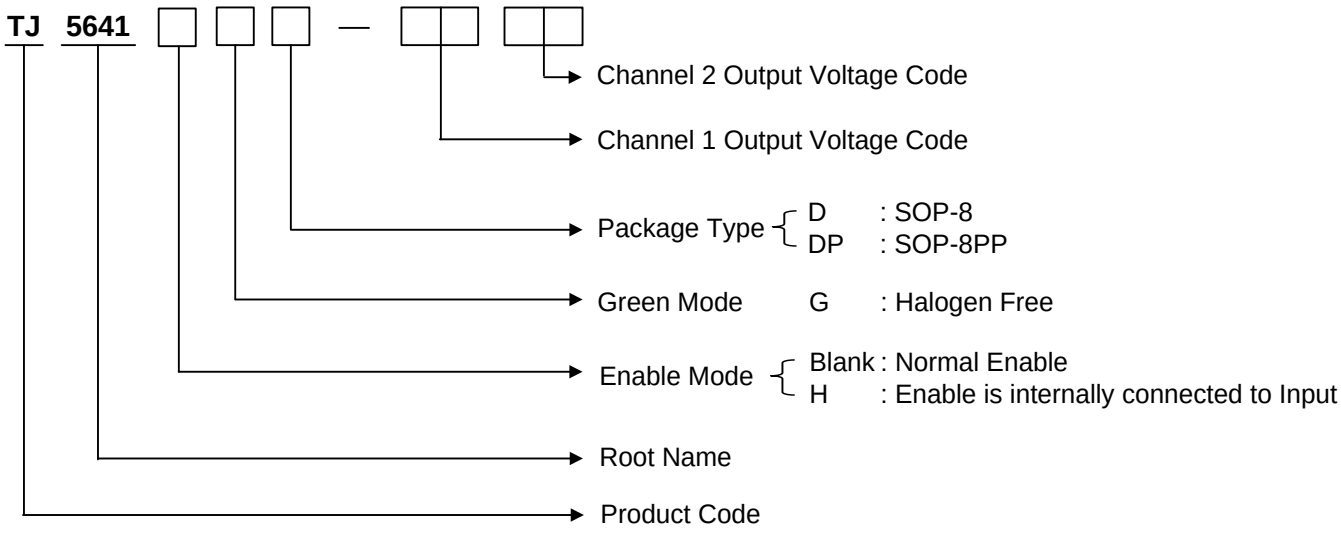
CHARACTERISTIC	SYMBOL	MIN.	MAX.	UNIT
Input Supply Voltage (Survival)	V_{IN1}, V_{IN2}	-	6.5	V
Enable Input Voltage (Survival)	V_{EN1}, V_{EN2}	-	6.5	V
Maximum Continuous Output Current	I_{MAX}	-	600/600	mA
Lead Temperature	T_{SOL}		260	ºC
Storage Temperature Range	T_{STG}	-65	150	ºC
Operating Junction Temperature Range	T_{JOPR}	-40	125	ºC
Package Thermal Resistance *	$\Theta_{JA\text{-}SOP\text{-}8PP}$	68		ºC/W
	$\Theta_{JC\text{-}SOP\text{-}8PP}$	15		

* Calculated from package in still air, mounted to 2.6mm X 3.5mm(minimum foot print) 2 layer PCB without thermal vias per JESD51 standards.

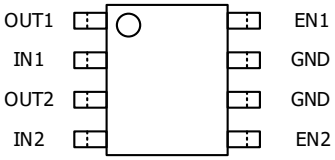
ORDERING INFORMATION

Package	Order No.	Channel 1 Output Voltage [V]	Channel 2 Output Voltage [V]	Description	Package Marking	Status
SOP-8	TJ5641GD – XXYY	X.X	Y.Y	Fixed, Enable	XXYY TJ5641G	Contact Us
	TJ5641HGD – XXYY	X.X	Y.Y	Fixed	XXYY TJ5641HG	Contact Us
SOP-8PP	TJ5641GDP – XXYY	X.X	Y.Y	Fixed, Enable	XXYY TJ5641G	Contact Us
	TJ5641HGDP – XXYY	X.X	Y.Y	Fixed	XXYY TJ5641HG	Contact Us

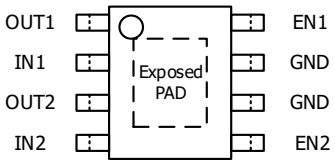
X.X = 1.0, 1.2, 1.5, 1.8, 2.5, 2.8, and 3.3
Y.Y = 1.0, 1.2, 1.5, 1.8, 2.5, 2.8, and 3.3
* Customer can choose one of the above output voltages on each channel.



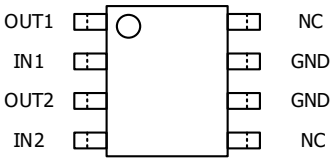
PIN CONFIGURATION



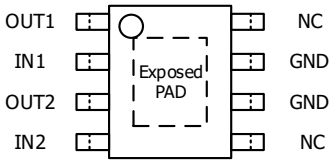
SOP-8 (TJ5641GD)



SOP-8PP (TJ5641GDP)



SOP-8 (TJ5641HGD)



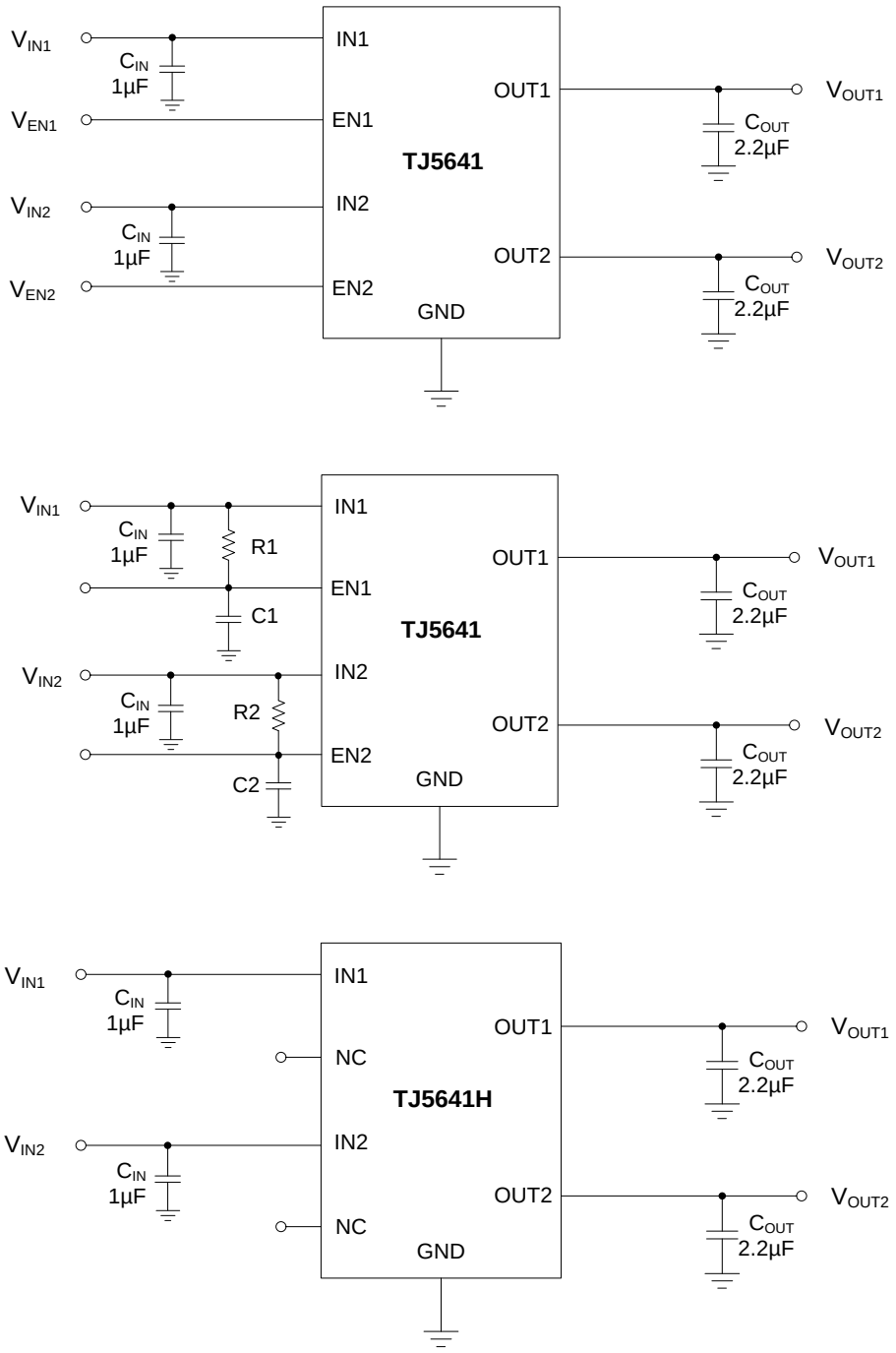
SOP-8PP (TJ5641HGDP)

PIN DESCRIPTION

Pin No.	Name		
	TJ5641 (SOP-8/SOP-8PP)	TJ5641H (SOP-8/SOP-8PP)	Function
1	OUT1	OUT1	Channel 1 Output Voltage
2	IN1	IN1	Channel 1 Input Voltage
3	OUT2	OUT2	Channel 2 Output Voltage
4	IN2	IN2	Channel 2 Input Voltage
5	EN2	NC	Channel 2 Chip Enable or No Connection (TJ5641H:Enable Version)
6	GND	GND	Ground
7	GND	GND	Ground
8	EN1	NC	Channel 1 Chip Enable or No Connection (TJ5641H:Enable Version)

- Exposed Pad of SOP-8PP package should be connected to GND.

TYPICAL APPLICATION



* The output current is limited by the restriction of power dissipation which differs from packages. A heat sink may be required depending on the maximum power dissipation and maximum ambient temperature of application. With respect to the applied package, the maximum continuous output current of each channel may be still undeliverable.

* See Application Information.

ELECTRICAL CHARACTERISTICS(Note 1)

Limits in standard typeface are for T_J=25ºC, and limits in **boldface type** apply over the **full operating temperature range**.
Unless otherwise specified: V_{IN}(Note 2) = $V_{O(NOM)}$ + 1V, I_L = 10 mA, C_{IN} = 1 µF, C_{OUT} = 2.2 µF, V_{EN} = V_{IN} - 0.3 V

PARAMETER		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage Tolerance		$V_{OUT1, 2}$		-2 **-3**	-	+2 **+3**	%
VIN Shutdown Current(Note 7)		$I_{GND.OFF}$	V_{EN1} = V_{EN2} = 0V	-	0.1	2	µA
VIN Supply Current(Note 6,7)		$I_{GND.ON}$	V_{EN1} = V_{EN2} = 5V, I_{OUT} = 0A	-	140	220	
Line Regulation(Note 3)		ΔV_{LINE}	V_{IN} = V_{OUT}+1V to 5V	-	0.25	-	%/V
Load Regulation(Note 3, 4)		ΔV_{LOAD}	10mA ≤ I_{OUT} ≤ 300mA	-	15	30	mV
			10mA ≤ I_{OUT} ≤ 600mA	-	30	50	mV
Dropout Voltage(Note 5)		V_{DROP}	V_{OUT} = 3.3V, I_{OUT} = 600mA	-	240	360	mV
Ripple Rejection		PSRR	V_{IN} = V_{OUT}+2V, f = 1kHz	-	55	-	dB
Output Current Limit		I_{LIM}		700	-	-	mA
Thermal Shutdown Temperature		T_{SD}		-	150	-	℃
Enable Threshold(Note 7)	Logic High	V_{IH}	Output = High	1.6	-	-	V
	Logic Low	V_{IL}	Output = Low	-	-	0.4	V

Note 1. Stresses listed as the absolute maximum ratings may cause permanent damage to the device. These are for stress ratings. Functional operating of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may remain possibly to affect device reliability.

Note 2. The minimum operating value for input voltage is equal to either ($V_{OUT,NOM}$ + V_{DROP}) or 2.5V, whichever is greater.

Note 3. Output voltage line regulation is defined as the change in output voltage from the nominal value due to change in the input line voltage. Output voltage load regulation is defined as the change in output voltage from the nominal value due to change in load current.

Note 4. Regulation is measured at constant junction temperature by using a 10ms current pulse. Devices are tested for load regulation in the load range from 10mA to 600mA.

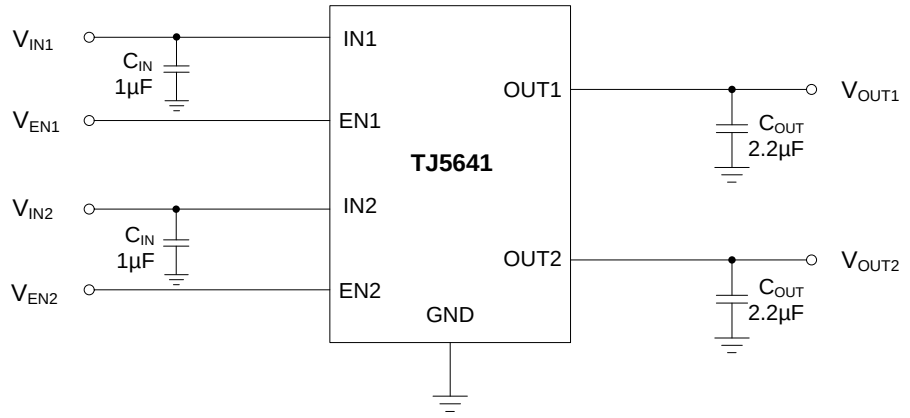
Note 5. Dropout voltage is defined as the minimum input to output differential voltage at which the output drops 2% below the nominal value. Dropout voltage specification applies only to output voltages of 2.5V and above. For output voltages below 2.5V, the dropout voltage is nothing but the input to output differential, since the minimum input voltage is 2.5V.

Note 6. Ground current, or quiescent current, is the difference between input and output currents. It's defined by I_{GND1} = $I_{IN\,1}$- I_{OUT1} under the given loading condition. The total current drawn from the supply is the sum of the load current plus the ground pin current.

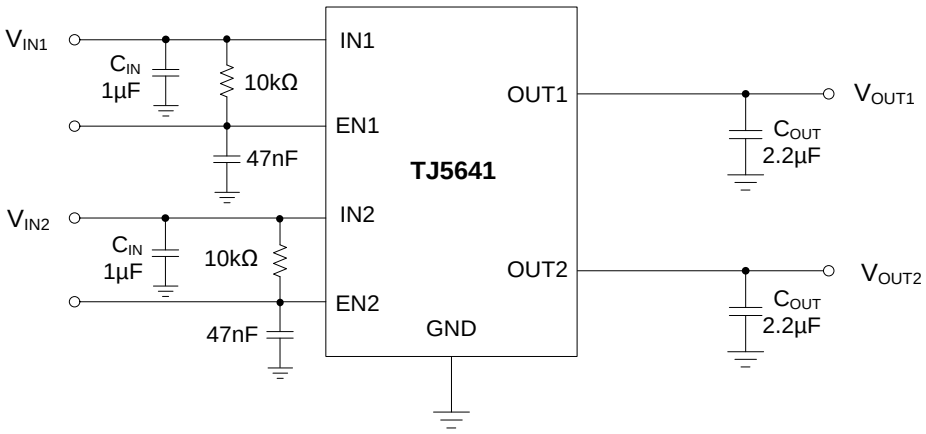
Note 7. Enable Mode Normal Version only. Enable Mode H version is not applied.

TYPICAL OPERATING CHARACTERISTICS

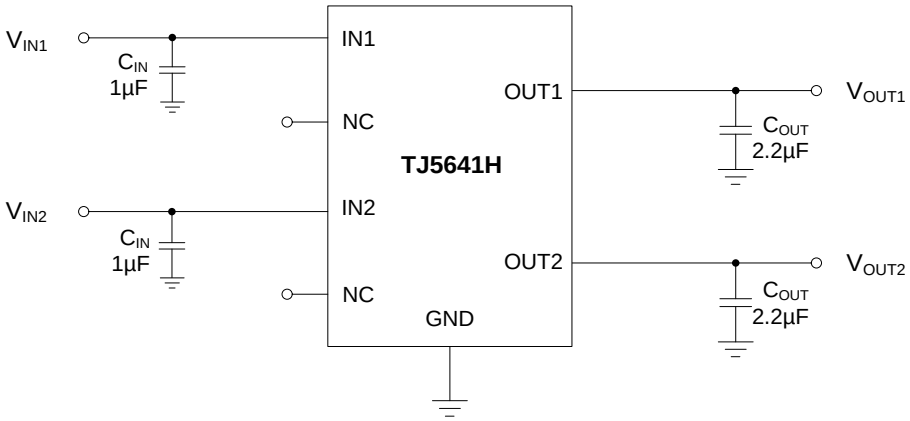
TEST CIRCUIT



Circuit 1



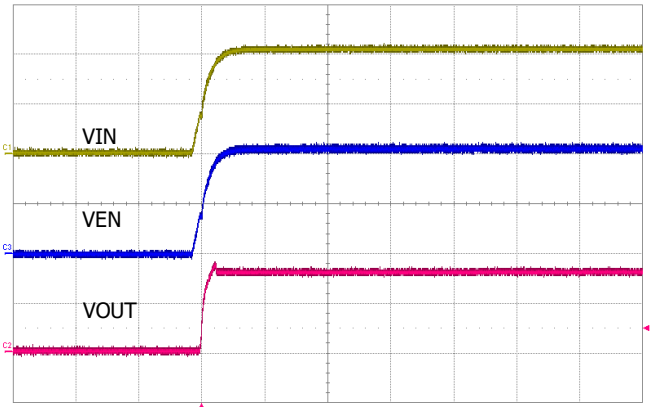
Circuit 2



Circuit 3

Channel 1 (VOUT=3.3V)

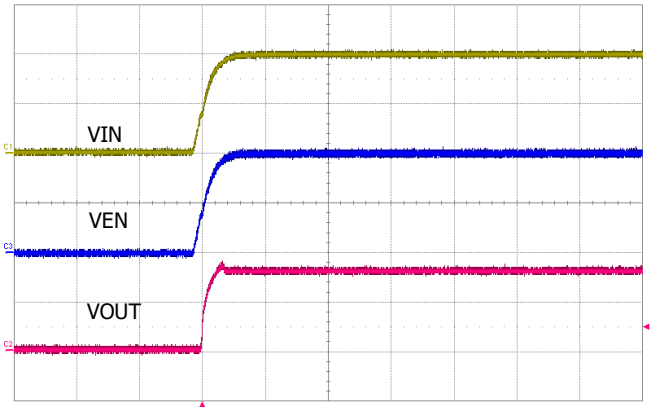
Circuit 1



VIN: 2.0V/div, VEN: 2.0V/div, VOUT: 2.0V/div, Time: 1ms/div

Start Up @ IOUT=10mA

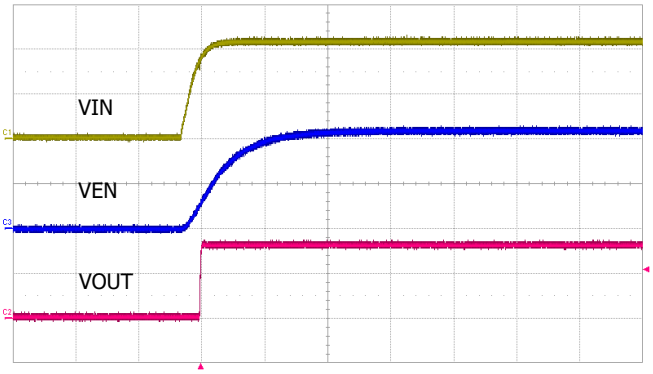
Circuit 1



VIN: 2.0V/div, VEN: 2.0V/div, VOUT: 2.0V/div, Time: 1ms/div

Start Up @ IOUT=600mA

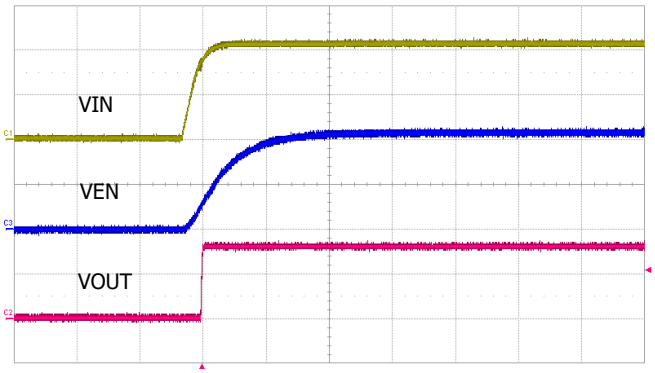
Circuit 2



VIN: 2.0V/div, VEN: 2.0V/div, VOUT: 2.0V/div, Time: 1ms/div

Start Up @ IOUT=10mA

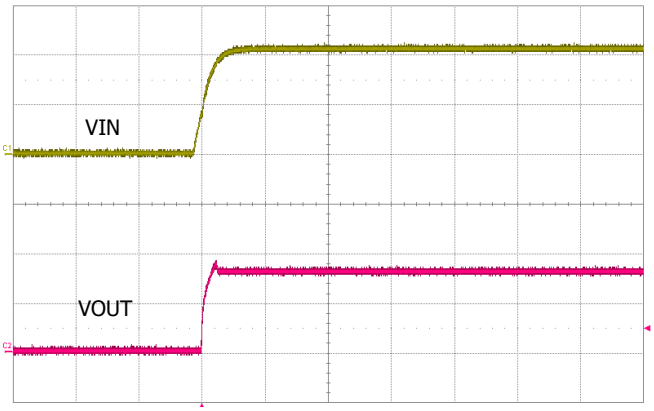
Circuit 2



VIN: 2.0V/div, VEN: 2.0V/div, VOUT: 2.0V/div, Time: 1ms/div

Start Up @ IOUT=600mA

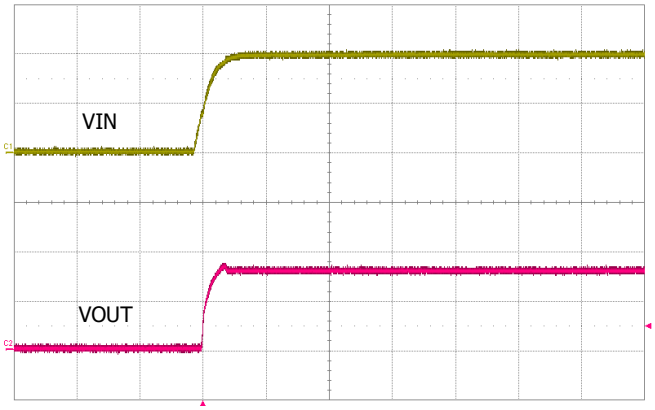
Circuit 3



VIN: 2.0V/div, VOUT: 2.0V/div, Time: 1ms/div

Start Up @ IOUT=10mA

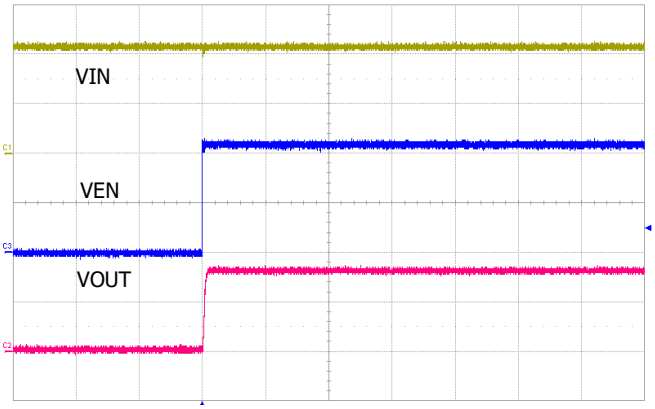
Circuit 3



VIN: 2.0V/div, VOUT: 2.0V/div, Time: 1ms/div

Start Up @ IOUT=600mA

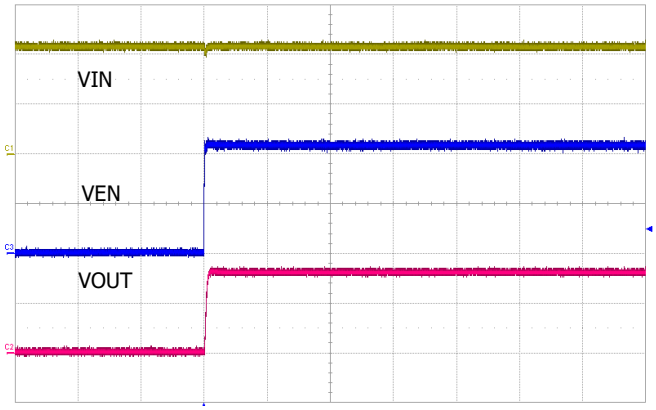
Circuit 1



VIN: 2.0V/div, VEN: 2.0V/div, VOUT: 2.0V/div, Time: 500µs/div

Start Up by External EN @ IOUT=10mA

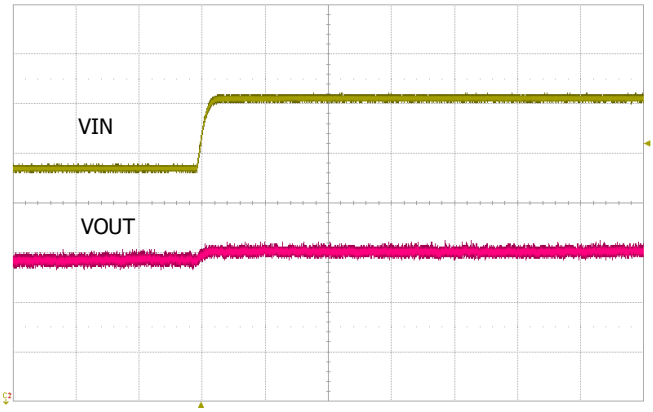
Circuit 1



VIN: 2.0V/div, VEN: 2.0V/div, VOUT: 2.0V/div, Time: 500µs/div

Start Up by External EN @ IOUT=600mA

Circuit 1, 2, 3

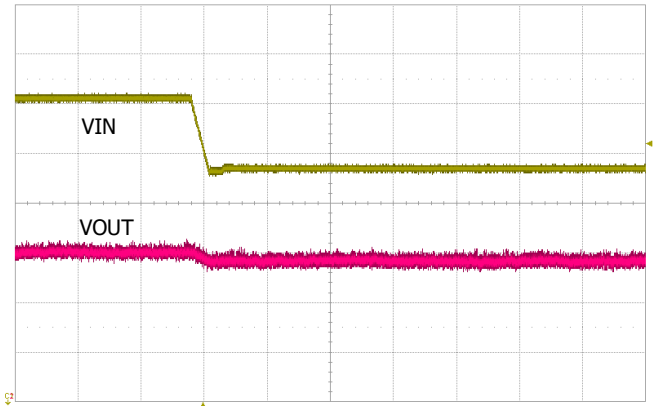


VIN: 0.5V/div, VOUT: 50mV/div, Time: 2ms/div

VIN:4.3 to 5.0V @ IOUT=10mA

Line Transient Response

Circuit 1, 2, 3

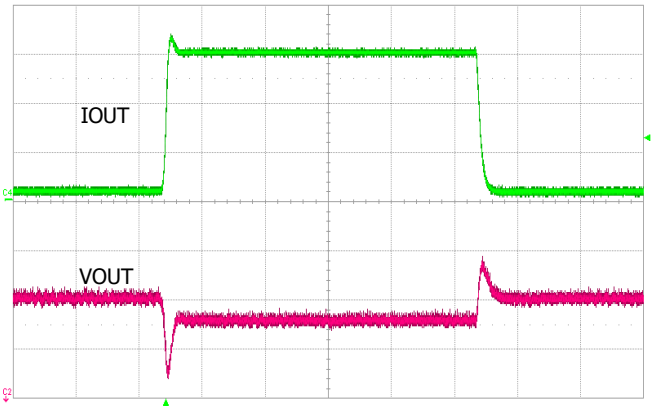


VIN: 0.5V/div, VOUT: 50mV/div, Time: 2ms/div

VIN:5.0 to 4.3V @ IOUT=10mA

Line Transient Response

Circuit 1, 2, 3

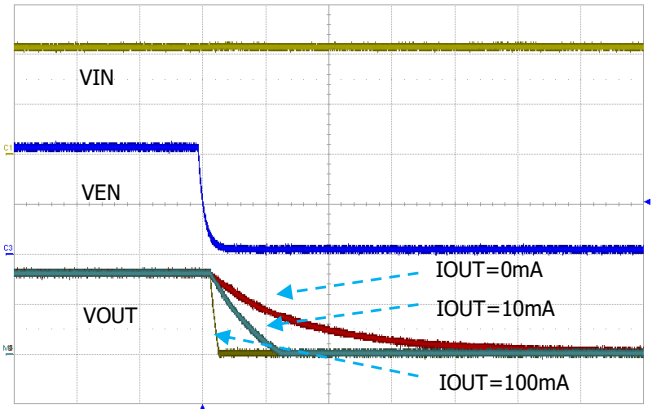


IOUT: 200mA/div, VOUT: 50mV/div, Time: 200µs/div

VIN=VEN=4.3V @ IOUT=10mA to 600mA

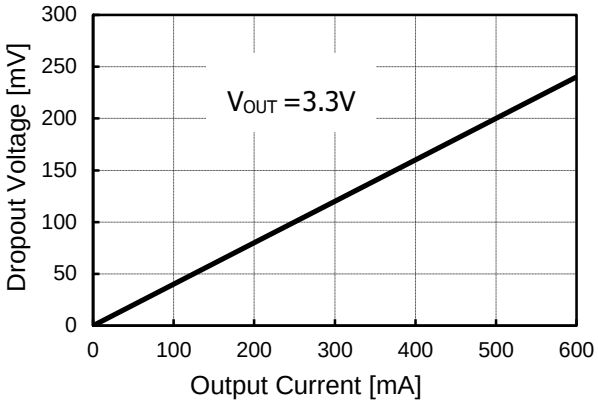
Load Transient Response

Circuit 1



VIN: 2.0V/div, VEN: 2.0V/div, VOUT: 2.0V/div, Time : 1ms/div

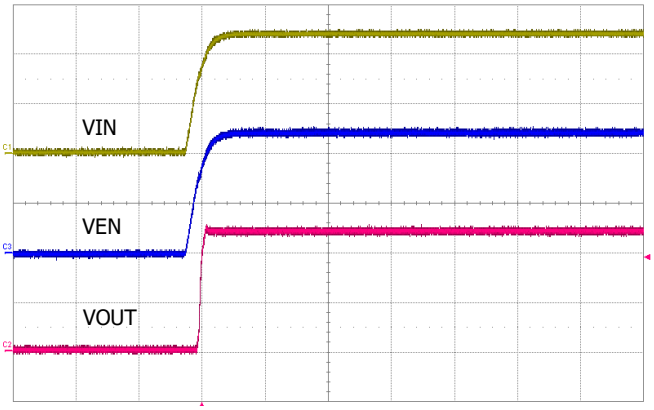
EN off



Dropout Voltage

Channel 2 (VOUT=1.2V)

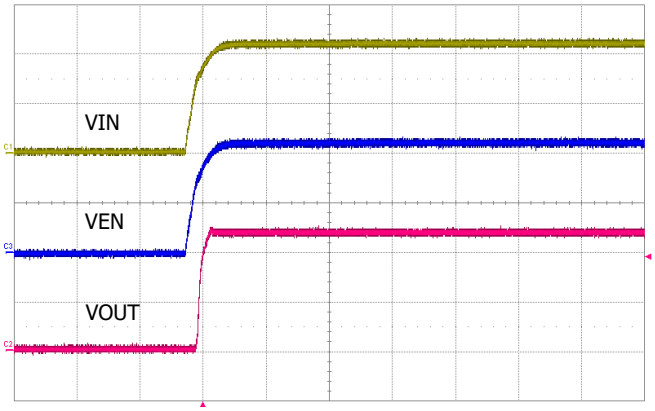
Circuit 1



VIN: 1.0V/div, VEN: 1.0V/div, VOUT: 0.5V/div, Time: 1ms/div

Start Up @ IOUT=10mA

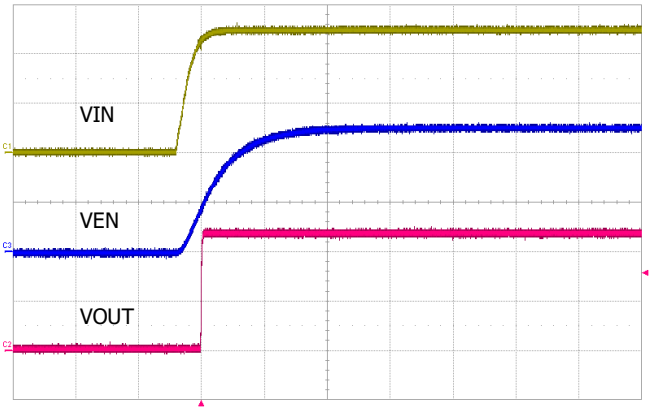
Circuit 1



VIN: 1.0V/div, VEN: 1.0V/div, VOUT: 0.5V/div, Time: 1ms/div

Start Up @ IOUT=600mA

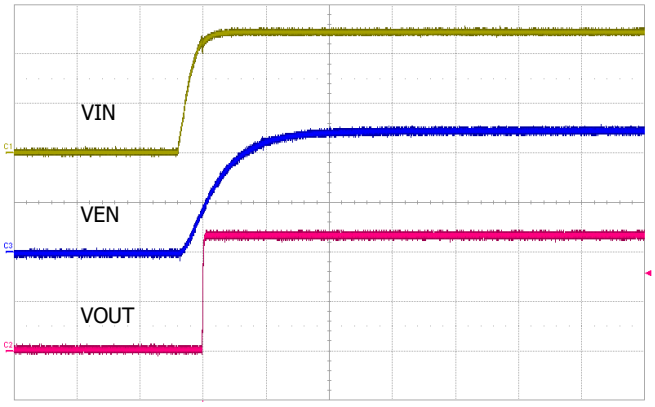
Circuit 2



VIN: 1.0V/div, VEN: 1.0V/div, VOUT: 0.5V/div, Time: 1ms/div

Start Up @ IOUT=10mA

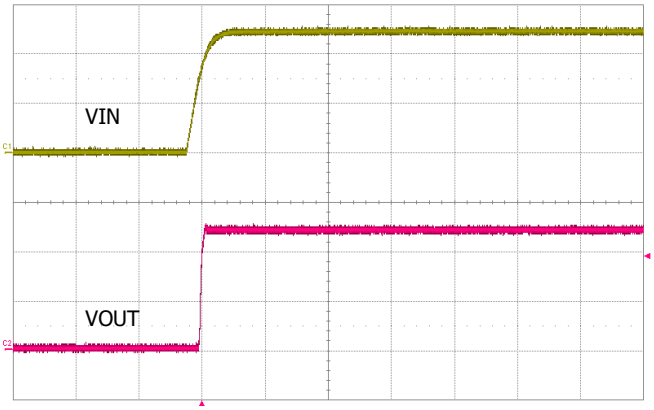
Circuit 2



VIN: 1.0V/div, VEN: 1.0V/div, VOUT: 0.5V/div, Time: 1ms/div

Start Up @ IOUT=600mA

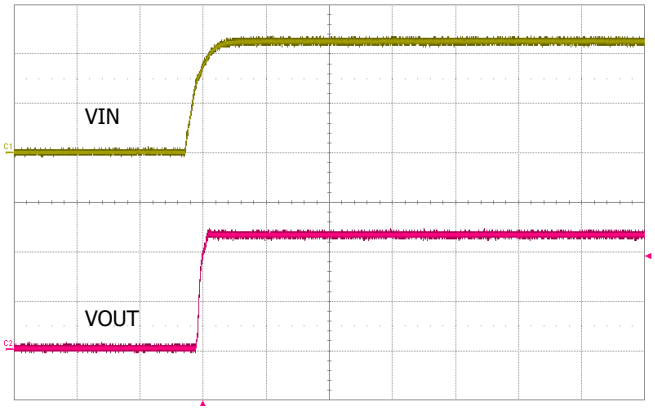
Circuit 3



VIN: 1.0V/div, VOUT: 0.5V/div, Time: 1ms/div

Start Up @ IOUT=10mA

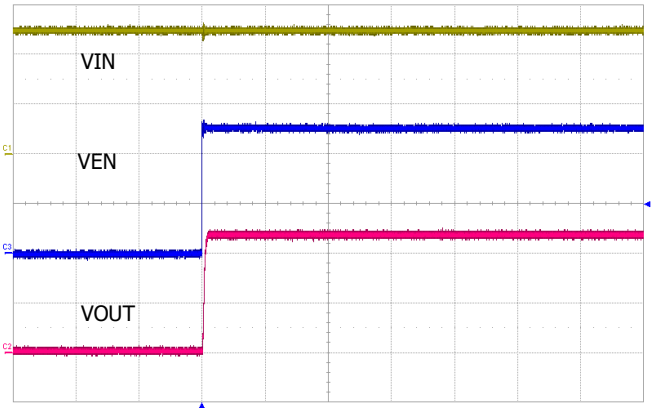
Circuit 3



VIN: 1.0V/div, VOUT: 0.5V/div, Time: 1ms/div

Start Up @ IOUT=600mA

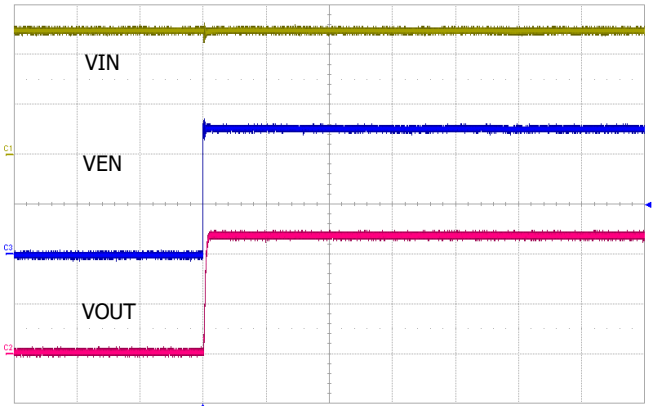
Circuit 1



VIN: 1.0V/div, VEN: 1.0V/div, VOUT: 0.5V/div, Time: 0.5ms/div

Start Up By External EN @ IOUT=10mA

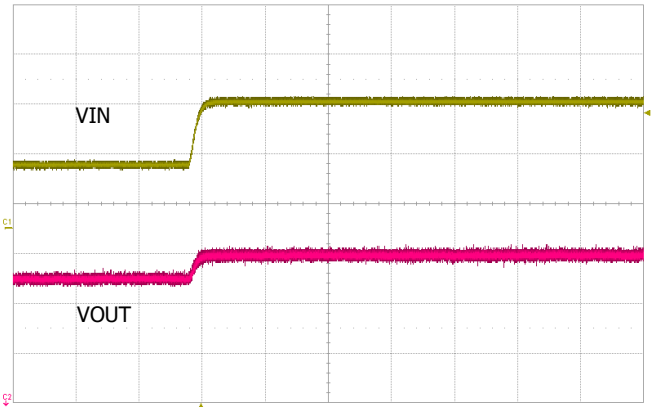
Circuit 1



VIN: 1.0V/div, VEN: 1.0V/div, VOUT: 0.5V/div, Time: 0.5ms/div

Start Up By External EN @ IOUT=600mA

Circuit 1, 2, 3

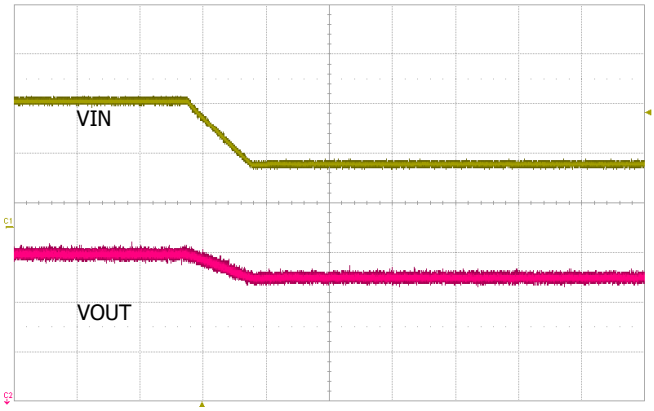


VIN: 0.5V/div, VOUT: 50mV/div, Time: 2ms/div

VIN:2.5 to 5.0V @ IOUT=10mA

Line Transient Response

Circuit 1, 2, 3

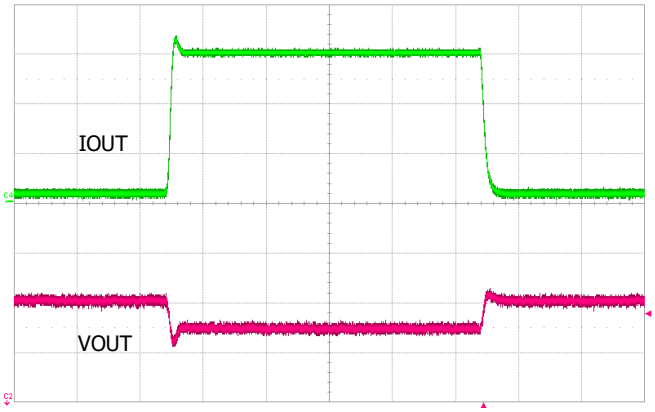


VIN: 0.5V/div, VOUT: 50mV/div, Time: 2ms/div

VIN:5.0 to 2.5V @ IOUT=10mA

Line Transient Response

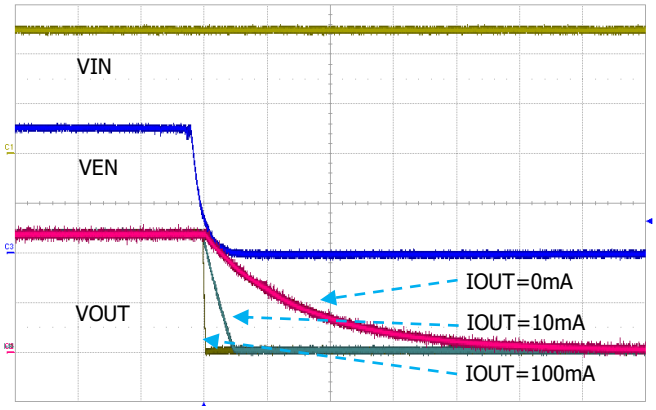
Circuit 1, 2, 3



IOUT: 200mA/div, VOUT: 50mV/div, Time: 200µs/div
VIN=VEN=2.5V @ IOUT=10mA to 600mA

Load Transient Response

Circuit 1



VIN: 1.0V/div, VEN: 1.0V/div, VOUT: 0.5V/div, Time : 1ms/div

EN off

APPLICATION INFORMATION

Introduction

TJ5641 is intended for applications where very low dropout voltage and current capability are required. It provides a simple, low cost solution that occupies very little PCB estate. Additional features include an enable pin to allow for a very low power consumption standby mode.

Component Selection

Input Capacitor

A ceramic capacitance over than 1µF should be closely placed to the input supply pin of the TJ5641 to ensure that the input supply voltage does not sag. Also a minimum of 1µF ceramic capacitor is recommended to be placed directly next to the V_{IN1} and V_{IN2} Pin. It allows for the device being some distance from any bulk capacitor on the rail. Additionally, input droop due to load transients is reduced, improving load transient response. Additional capacitance may be added if required by the application.

Output Capacitor

A minimum ceramic capacitor over than 2.2µF should be very closely placed to the output voltage pin of the TJ5641. Increasing capacitance will improve the overall transient response and stability.

Decoupling (Bypass) Capacitor

In very electrically noisy environments, it is recommended that additional ceramic capacitors be placed from VIN to GND. The use of multiple lower value ceramic capacitors in parallel with output capacitor also allows to achieve better transient performance and stability if required by the application.

Start-Up

To turn on TJ5641, Input Voltage should be supplied prior to Enable Voltage. So, it is recommended to apply delayed start-up by using C1 as shown in Fig. 1. It can adjust proper delay by R1-C1 time constant. It is recommended that R1 and R2 value are greater than 10kΩ. Also, it is suggested that C1 and C2 value are greater than 47nF.

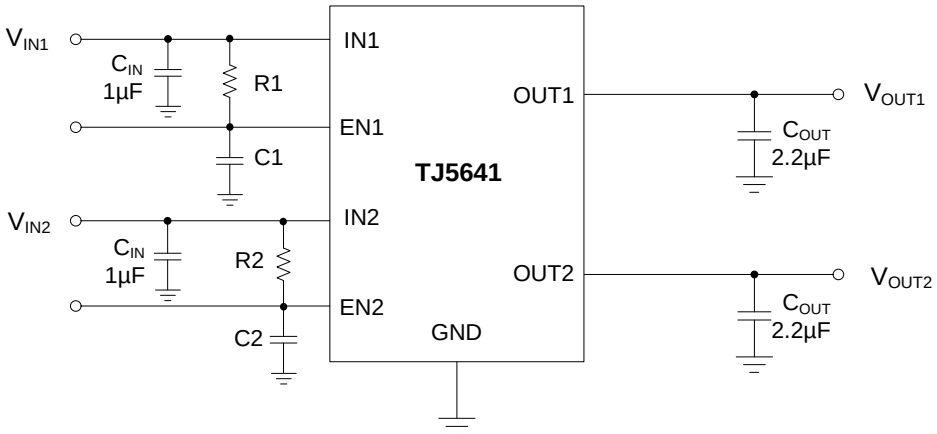


Fig. 1

Maximum Continuous Output Current Capability

The TJ5641 can deliver a continuous current of 600mA/600mA over the full operating junction temperature range. However, the output current is limited by the restriction of power dissipation which differs from packages. A heat sink may be required depending on the maximum power dissipation and

maximum ambient temperature of application. With respect to the applied package, the maximum continuous output current of 600mA may be still undeliverable due to the restriction of the power dissipation of TJ5641. Under all possible conditions, the junction temperature must be within the range specified under operating conditions.
The temperatures over the device are given by:

$T_C = T_A + P_D \times \theta_{CA}$
$T_J = T_C + P_D \times \theta_{JC}$
$T_J = T_A + P_D \times \theta_{JA}$

where T_J is the junction temperature, T_C is the case temperature, T_A is the ambient temperature, P_D is the total power dissipation of the device, θ_{CA} is the thermal resistance of case-to-ambient, θ_{JC} is the thermal

resistance of junction-to-case, and θ_{JA} is the thermal resistance of junction to ambient.
The total power dissipation of the device is given by:

$$P_D = P_{IN} - P_{OUT} = (V_{IN} \times I_{IN}) - (V_{OUT} \times I_{OUT})$$
$$= (V_{IN} \times (I_{OUT} + I_{GND})) - (V_{OUT} \times I_{OUT}) = (V_{IN} - V_{OUT}) \times I_{OUT} + V_{IN} \times I_{GND}$$

where I_{GND} is the operating ground current of the device which is specified at the Electrical Characteristics.

The maximum allowable temperature rise (T_{Rmax}) depends on the maximum ambient temperature (T_{Amax}) of the application, and the maximum allowable junction temperature (T_{Jmax}):

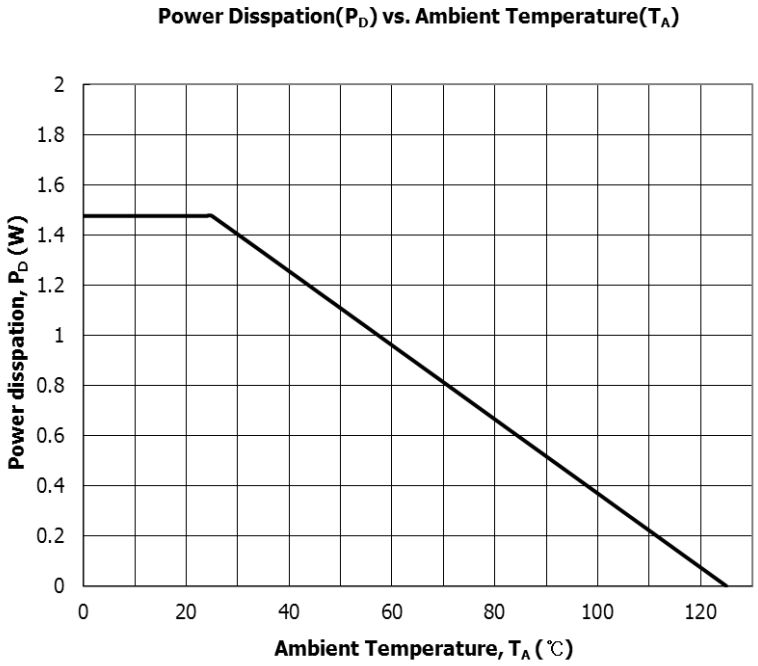
$$T_{Rmax} = T_{Jmax} - T_{Amax}$$

The maximum allowable value for junction-to-ambient thermal resistance, θ_{JA}, can be calculated using the formula:

$$\theta_{JA} = T_{Rmax} / P_D$$

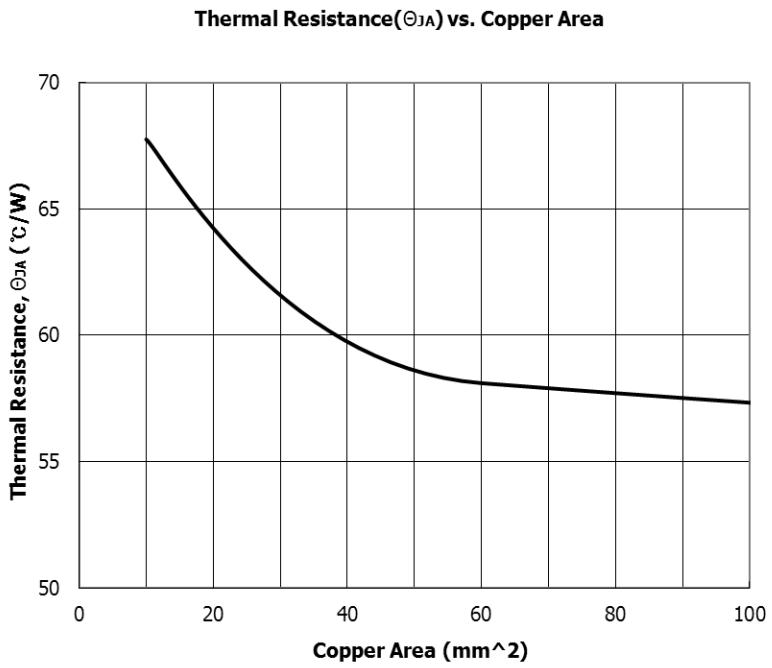
TJ5641 is available in SOP-8 and SOP-8PP packages. The thermal resistance depends on amount of copper area or heat sink, and on air flow.

If proper cooling solution such as heat sink, copper plane area, or air flow is applied, the maximum allowable power dissipation could be increased. However, if the ambient temperature is increased, the allowable power dissipation would be decreased.



The graph above is valid for the thermal impedance specified in the Absolute Maximum Ratings section on page 1.

The θ_{JA} could be decreased with respect to the copper plane area. So, the specification of maximum power dissipation for an application is fixed, the proper plane area could be estimated by following graphs. Wider copper plane area leads lower θ_{JA}.



The maximum allowable power dissipation is also influenced by the ambient temperature. With the θ_{JA}-Copper plane area relationship, the maximum allowable power dissipation could be evaluated with respect to the ambient temperature. As shown in graph, the higher copper plane area leads θ_{JA}. And the higher ambient temperature leads lower maximum allowable power dissipation.

REVISION NOTICE

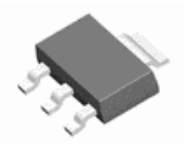
The description in this datasheet can be revised without any notice to describe its electrical characteristics properly.

1A Ultra Low Dropout Linear Regulator TJ1119C/F

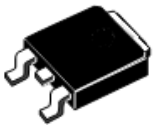
FEATURES

- Ultra Low Dropout Voltage
- Low Ground Pin Current
- Excellent Line and Load Regulation
- Available in SOT-223-3L, TO-252-3L Packages
- Fixed Output Voltages: 1.0V, 1.2V, 1.5V, 1.8V, 2.5V, 2.8V and 3.3V
- Over-Temperature/Over-Current Protection
- -40 ºC to 125 ºC Junction Temperature Range

SOT-223-3L



TO-252-3L



APPLICATION

- Battery Powered Equipment
- Motherboards and Graphic Cards
- Microprocessor Power Supplies
- Peripheral Cards
- High Efficiency Linear Regulators
- Battery Chargers

ORDERING INFORMATION

Device	Package
TJ1119CGS-X.X	SOT-223-3L
TJ1119FGS-X.X	
TJ1119CGRS-X.X	TO-252-3L
TJ1119FGRS-X.X	

X.X = Output Voltage = 1.0, 1.2, 1.5, 1.8, 2.5, 2.8 and 3.3

DESCRIPTION

The TJ1119 series of high performance ultra low-dropout linear regulators operates from 2.5V to 5.5V input supply and provides ultra low-dropout voltage, high output current with low ground current. Wide range of preset output voltage options are available. These ultra low dropout linear regulators respond fast to step changes in load which makes them suitable for low voltage micro-processor applications. The TJ1119 is developed on a CMOS process technology which allows low quiescent current operation independent of output load current. This CMOS process also allows the TJ1119 to operate under extremely low dropout conditions.

ABSOLUTE MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	MIN.	MAX.	UNIT
Input Supply Voltage (Survival)	V_{IN}	-	6.5	V
Maximum Output Current	I_{MAX}	-	1.0 [1)]	A
Lead Temperature (Soldering, 5 sec)	T_{SOL}		260	ºC
Storage Temperature Range	T_{STG}	-65	150	ºC
Operating Junction Temperature Range	T_{JOPR}	-40	125	ºC

1) Maximum output current is limited by the restriction of power dissipation.

Please contact us for more information about this product.

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