

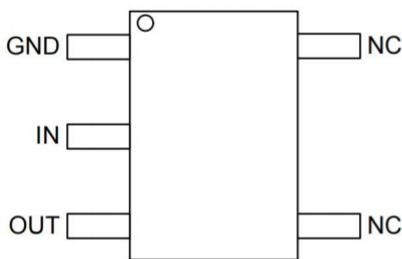
## Features

- 2.5 $\mu$ A Current at no Load
- $\pm$ 2% Output Accuracy
- 150mA Output Current
- Current Limit Protection

## Applications

- Industrial Controls
- Home Automation
- Wireless power tools
- Motor driver and control board

## PIN CONFIGURATION

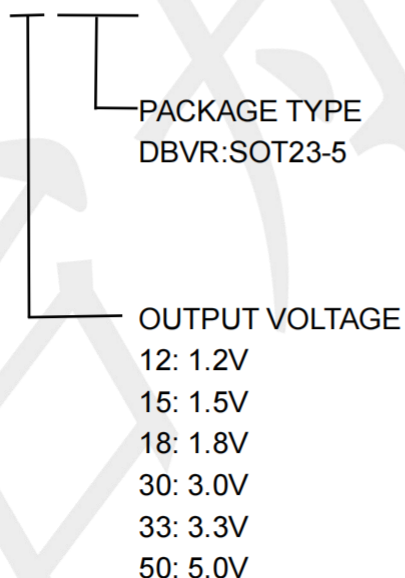


SOT23-5

Pin Number	Pin Name	Pin Function
1	GND	Ground
2	VIN	Input of Supply Voltage
3	VOUT	Output of the Regulator
4	NC	NO Connected
5	NC	NO Connected

## Ordering Information

TLV704 XX DBVR



**Example: TLV70450DBVR**

→ 3.3V Version, in SOT23-5 Package & Tape & Reel Packing Type

**TLV70433DBVR Marking:PAO**

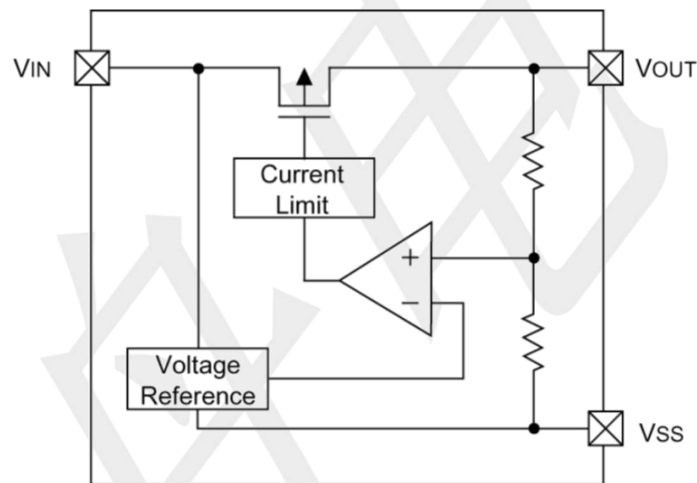
**TLV70450DBVR Marking:PAX**

## Absolute Maximum Ratings

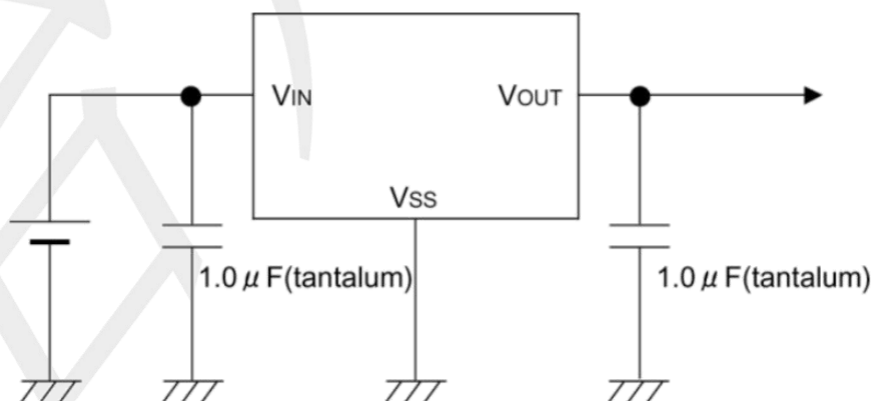
over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
VIN	Continuous input voltage range	-0.3	28	V
VOUT	Output voltage range	-0.3	5	
Current	Maximum output current	Internally limited		mA
Temperature	Operating Temperature, Topr	-40	85	°C
	Storage, Tstg	-55	125	
Power Dissipation	SOT23-5 Pd	300		mW
ESD	HBM mode, ESDA/JEDECJS-001-2017	2000		V

## BLOCK DIAGRAM



## Typical Application Circuit



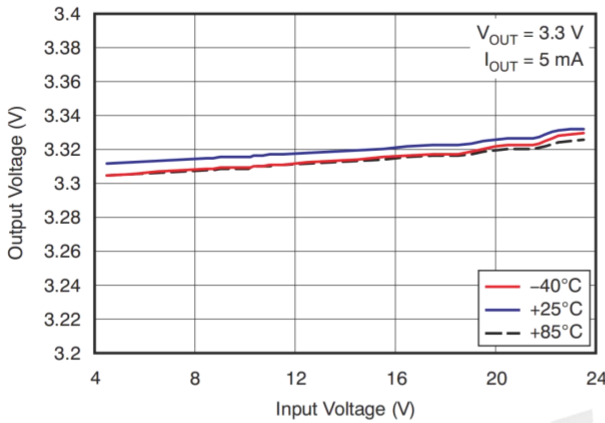
## Electrical Characteristics

(TA=25°C, unless otherwise specified)

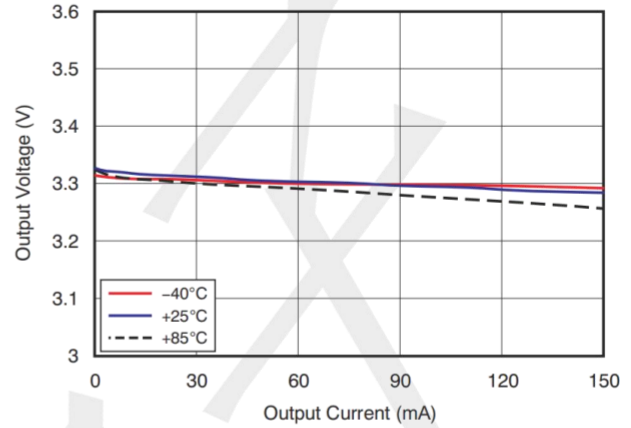
PARAMETER	SYMBOL	TEST Conditions	MIN	TYP	MAX	UNIT
Supply Voltage	V <sub>IN</sub>		2.2	--	24	V
Output current	I <sub>OUT</sub>		0	150	200	mA
DC Output Voltage Accuracy		I <sub>OUT</sub> = 0.1mA	-2	--	2	%
Dropout Voltage (V <sub>IN</sub> -V <sub>OUT</sub> )	I <sub>OUT</sub> = 100mA	V <sub>OUT</sub> = 1.5V	--	400	--	mV
		V <sub>OUT</sub> = 1.8V	--	380	--	
		V <sub>OUT</sub> = 3.0V	--	350	--	
		V <sub>OUT</sub> = 3.3V	--	330	--	
		V <sub>OUT</sub> = 5.0V	--	300	--	
Ground Current (I <sub>OUT</sub> = 0mA)	I <sub>Q</sub>	V <sub>OUT</sub> = 3.3V	--	1.5	2.5	uA
Shutdown Ground Current	I <sub>SD</sub>	V <sub>EN</sub> = 0V, V <sub>OUT</sub> = 0V	--	0.01	0.5	
V <sub>OUT</sub> Shutdown Leakage Current	I <sub>LEAK</sub>		--	0.01	0.5	
Line Regulation	ΔLINE	I <sub>OUT</sub> = 1mA, 10 ≤ V <sub>IN</sub> ≤ 18V	--	0.3	--	%
Load Regulation	ΔLOAD	10mA ≤ I <sub>OUT</sub> ≤ 100mA	--	0.3	--	
Output Current Limit	I <sub>LIM</sub>	V <sub>OUT</sub> = 0.9 × V <sub>OUT(NOM)</sub>	250	300	--	mA
Power Supply Rejection Ratio	PSRR	V <sub>OUT</sub> = 5V, I <sub>OUT</sub> = 30mA, V <sub>IN</sub> = 12V, f = 1kHz	--	70	--	dB
Thermal Shutdown Temperature	T <sub>SD</sub>	I <sub>OUT</sub> = 10mA	--	160	--	°C
Thermal Shutdown Hysteresis	ΔT <sub>SD</sub>		--	15	--	
Package Thermal Resistance (Note 1)	SOT23-5 TJA	Thermal Resistance Junction-to-Ambient	--	200	--	°C/W

Note: 1. Test condition: the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.

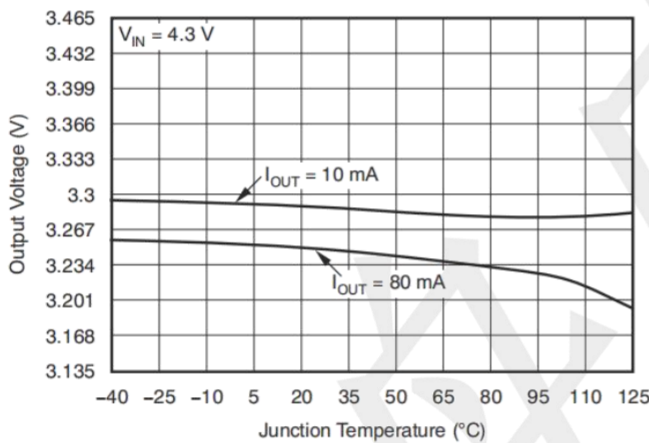
## Typical Operating Characteristics (25 °C, unless otherwise noted)



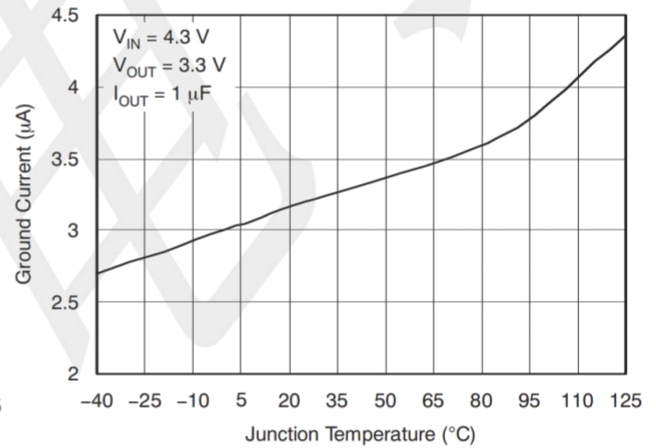
Line Regulation



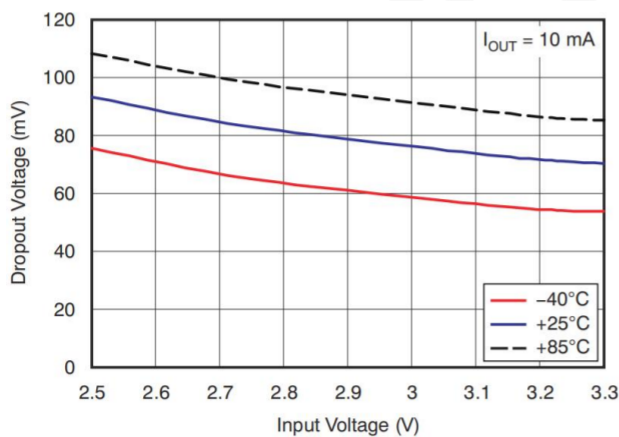
Load Regulation ( $V_{OUT} = 3.3\text{ V}$ )



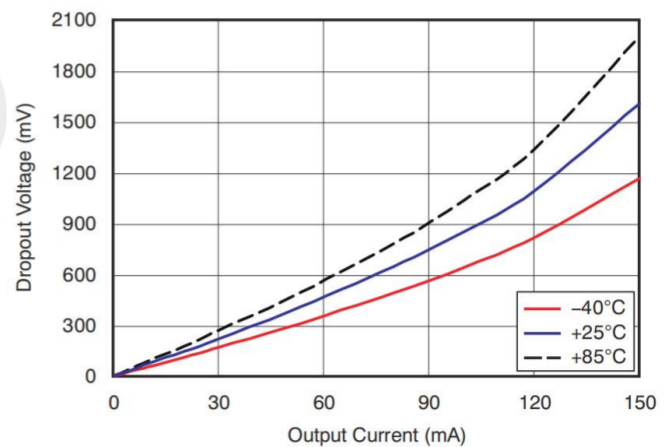
Output Voltage vs Junction Temperature



Ground Current vs Junction Temperature



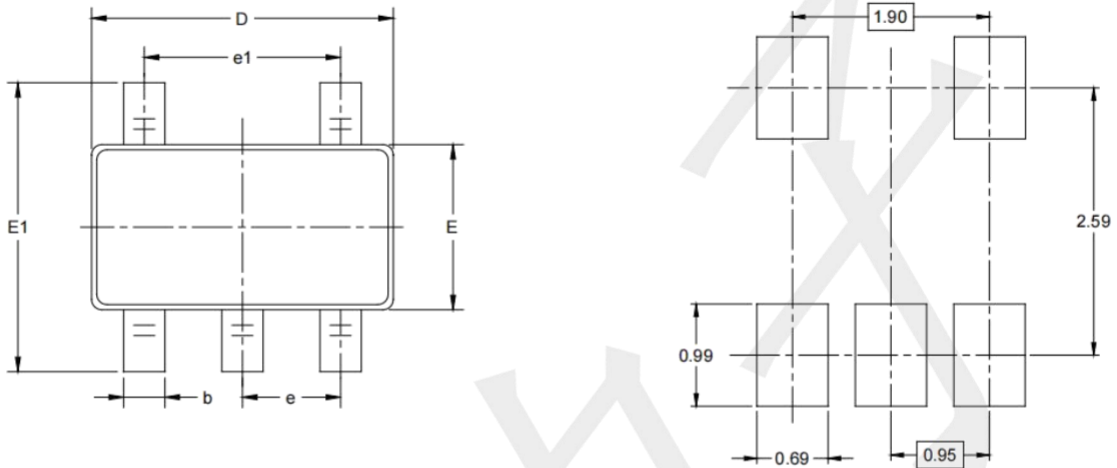
Dropout Voltage vs Input Voltage



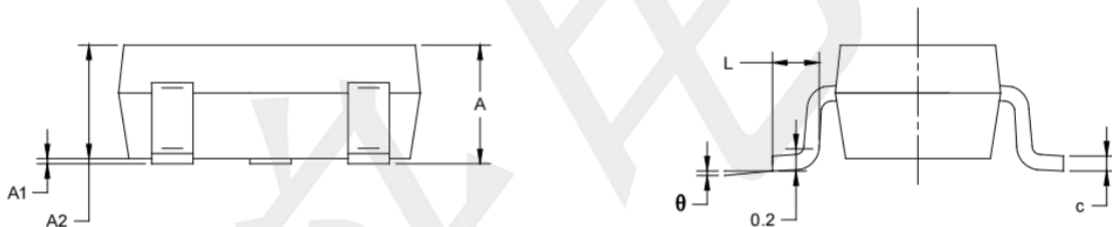
Dropout Voltage vs Output Current

## Package information

SOT23-5



RECOMMENDED LAND PATTERN (Unit: mm)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950 BSC		0.037 BSC	
e1	1.900 BSC		0.075 BSC	
L	0.300	0.600	0.012	0.024
$\theta$	0°	8°	0°	8°

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