

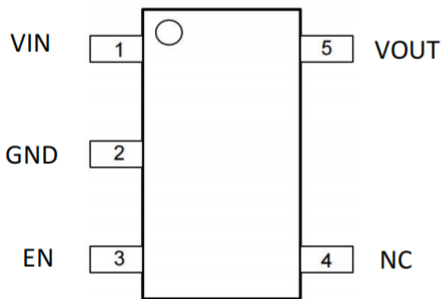
Features

- 12 μ A Current at no Load
- $\pm 2\%$ Output Accuracy
- 250mA Output Current
- Current Limit Protection

Applications

- Industrial Controls
- Home Automation
- Low Power Microcontrollers
- Portable, Battery Powered Equipment

PIN CONFIGURATION

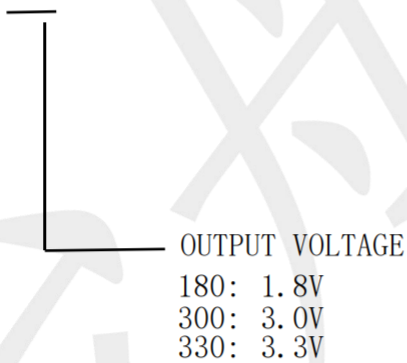


SOT23-5

Pin Number	Pin Name	Pin Function
SOT23-5		
1	VIN	Input of Supply Voltage
2	GND	Ground
3	EN	Enable Control Input
4	NC	No Internal Connection
5	VOUT	Output of the Regulator

Ordering Information

TPNCP163ASN330T1G



Marking:

TPNCP163ASN180T1G Marking:KAATPC
TPNCP163ASN300T1G Marking:KAFTPC
TPNCP163ASN330T1G Marking:KAGTPC

Absolute Maximum Ratings

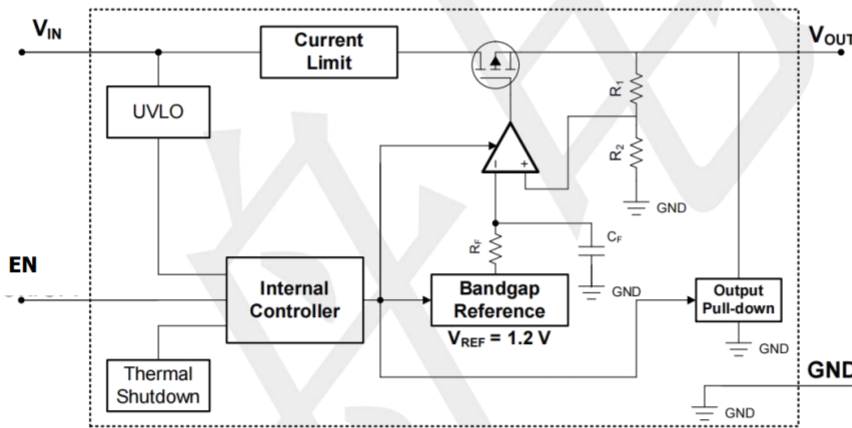
over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
V _{IN}	Continuous input voltage range	-0.3	6	V
V _{OUT}	Output voltage range	-0.3	6	
EN	EN pin voltage range	-0.3	6	
Current	Maximum output current	Internally limited		mA
Temperature	Operating junction, T _J	-40	150	°C
	Storage, T _{stg}	-55	150	

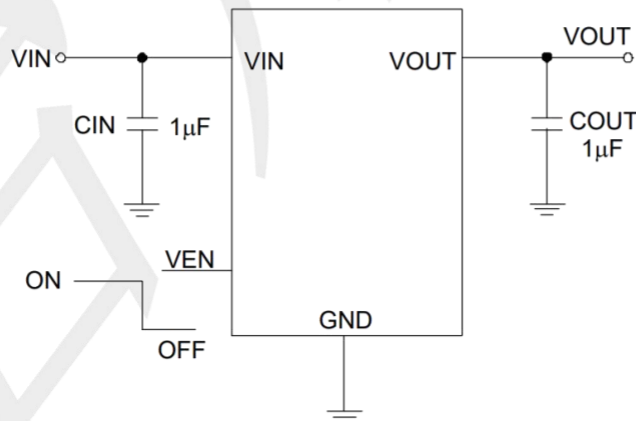
ESD Ratings

			VALUE	UNIT
V(ESD)	Electrostatic discharge	Human body model (HBM)	±2000	V
		Machine Model (MM)	±200	

BLOCK DIAGRAM



Typical Application Circuit



Electrical Characteristics

(VIN=15V, VEN=5V, TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST Conditions	MIN	TYP	MAX	UNIT
Supply Voltage	VIN		2.2	--	6	V
Output current	IOUT		0	--	250	mA
DC Output Voltage Accuracy		IOUT = 0.1mA	-2	--	2	%
Dropout Voltage (VIN-VOUT)	IOUT = 200mA	VOUT = 1.8V	--	180	--	mV
		VOUT = 2.5V	--	110	--	
		VOUT = 2.8V	--	90	--	
		VOUT = 3.0V	--	90	--	
		VOUT = 3.2V	--	85	--	
		VOUT = 3.3V	--	80	--	
		VOUT = 3.5V	--	75	--	
		VOUT = 4.5V	--	70	--	
VOUT = 5.0V	--	65	--			
Ground Current (IOUT = 0mA)	Iq	VOUT = 3.3V	--	12	--	uA
Shutdown Ground Current	ISD	VEN = 0V,	--	0.01	0.5	
VOUT Shutdown Leakage Current	I _{LEAK}	VOUT = 0V	--	0.01	0.5	
Enable Threshold Voltage	V _{IH}	EN Rising	1.2	--	--	V
	V _{IL}	EN Falling	--	--	0.4	
EN Input Current	I _{EN}	VEN = 6V	--	10	100	nA
Line Regulation	Δ _{LINE}	IOUT = 1mA, 3 ≤ VIN ≤ 6V	--	0.3	--	%
Load Regulation	Δ _{LOAD}	10mA ≤ IOUT ≤ 100mA	--	0.3	--	
Output Current Limit	I _{LIM}	VOUT = 0.9 × VOUT(NOM)	250	300	--	mA
Power Supply Rejection Ratio	PSRR	VOUT = 3.3V, IOUT = 30mA, VIN = 6V, f = 1kHz	--	70	--	dB
Thermal Shutdown Temperature	T _{SD}	IOUT = 10mA	--	160	--	°C
Thermal Shutdown Hysteresis	Δ _{TSD}		--	15	--	
Package Thermal Resistance (Note 1)	T _{JA}	Thermal Resistance Junction-to-Ambient	--	200	--	°C/W

Note: 1. Test condition: For SOT23-5, the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.

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

Unless otherwise specified: $T_A = 25^\circ\text{C}$, $V_{IN} = V_O(\text{NOM}) + 1\text{ V}$, $C_{OUT} = 1\ \mu\text{F}$, $C_{IN} = 1\ \mu\text{F}$ all voltage options, EN pin tied to V_{IN} .

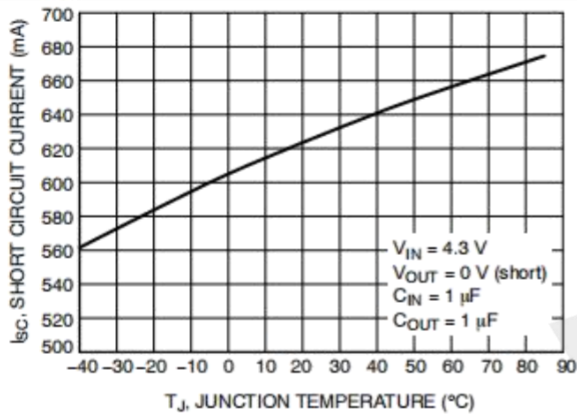


Figure Short Circuit Current vs. Temperature

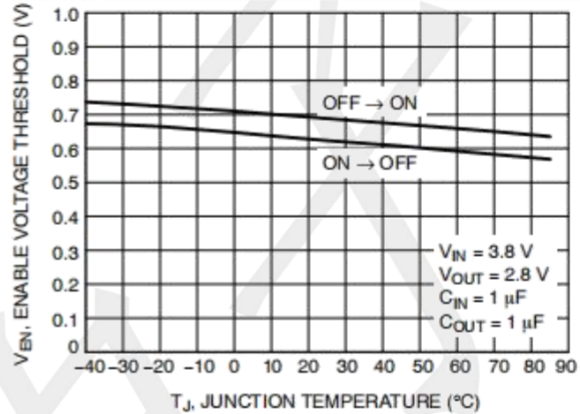


Figure Enable Thresholds Voltage

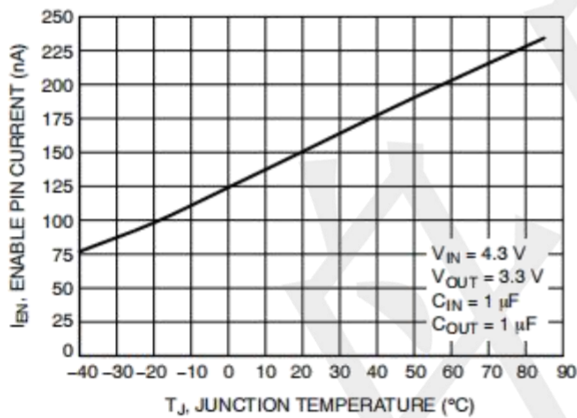


Figure Current to Enable Pin vs. Temperature

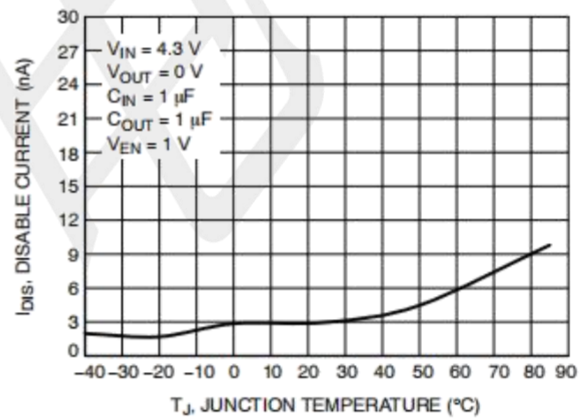


Figure Disable Current vs. Temperature

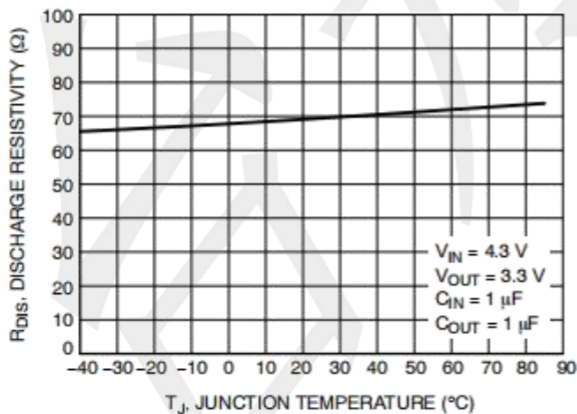


Figure Discharge Resistance vs. Temperature

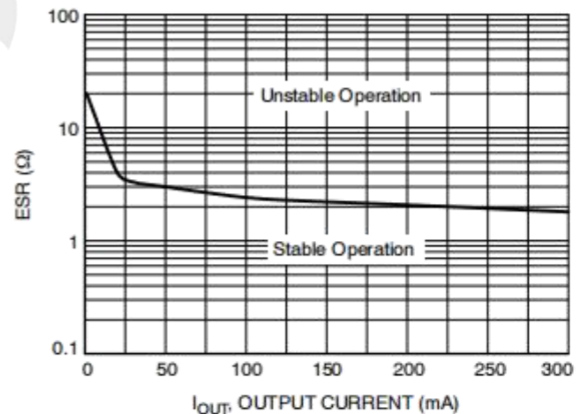
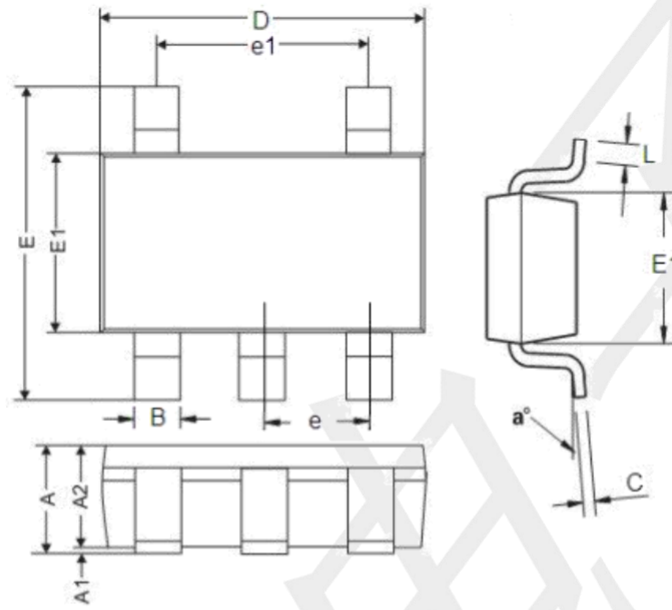


Figure Maximum COUT ESR Value vs. Load Current

Package informantion

SOT23-5



参数	尺寸 (mm)		尺寸 (Inch)	
	最小值	最大值	最小值	最大值
A	0.9	1.45	0.0354	0.0570
A1	0	0.15	0	0.0059
A2	0.9	1.3	0.0354	0.0511
B	0.2	0.5	0.0078	0.0196
C	0.09	0.26	0.0035	0.0102
D	2.7	3.10	0.1062	0.1220
E	2.2	3.2	0.0866	0.1181
E1	1.30	1.80	0.0511	0.0708
e	0.95REF		0.0374REF	
e1	1.90REF		0.0748REF	
L	0.10	0.60	0.0039	0.0236
a°	0°	30°	0°	30°

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