

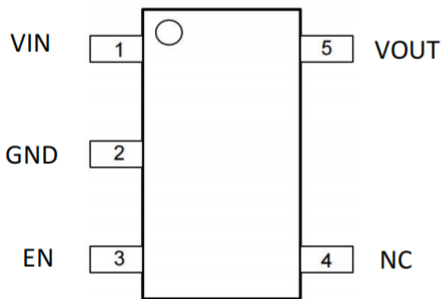
Features

- 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

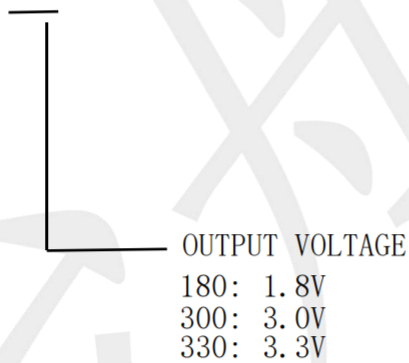


SOT23-5

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

TPNCP163ASN180T1G



Marking:

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

Absolute Maximum Ratings

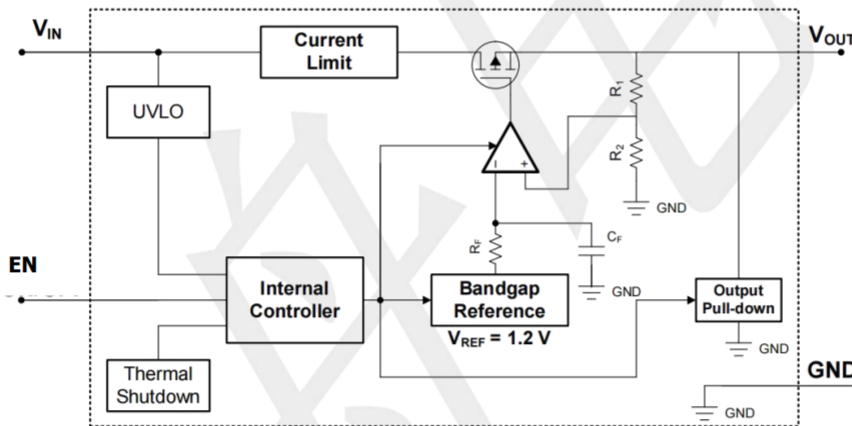
over operating free-air temperature range (unless otherwise noted)

		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	

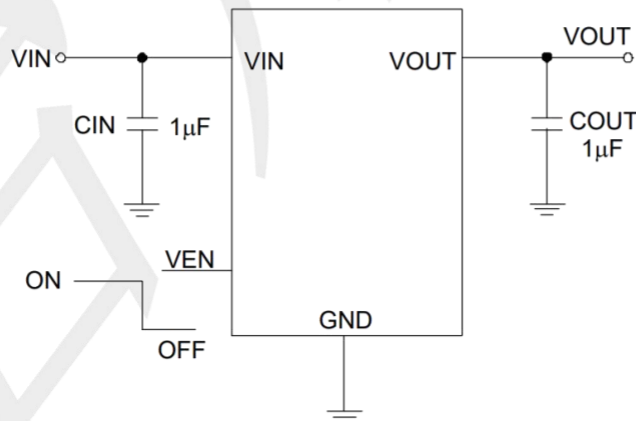
ESD Ratings

			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} .

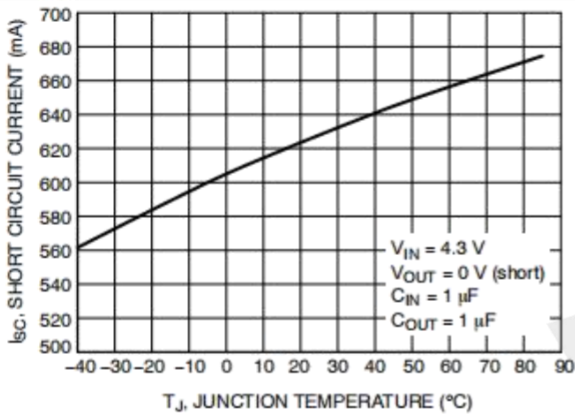


Figure Short Circuit Current vs. Temperature

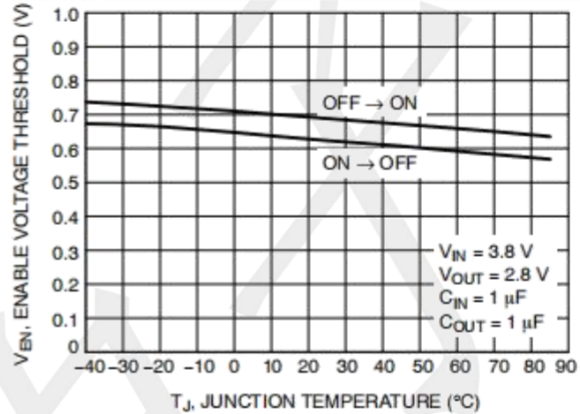


Figure Enable Thresholds Voltage

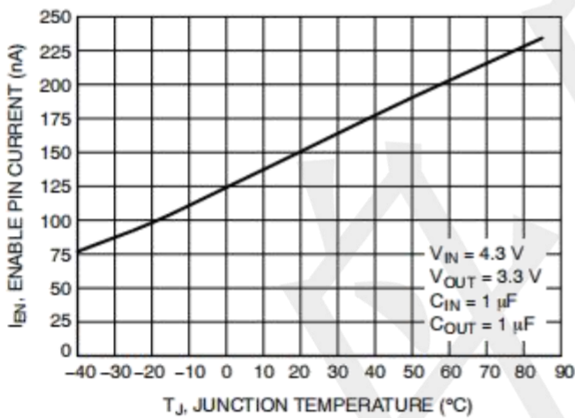


Figure Current to Enable Pin vs. Temperature

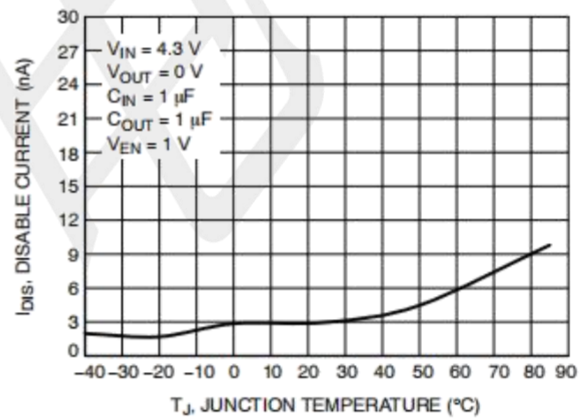


Figure Disable Current vs. Temperature

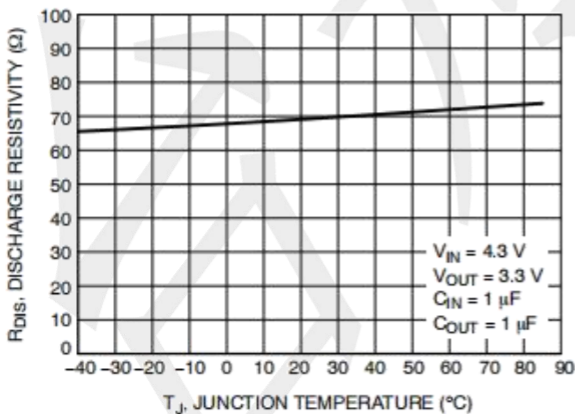


Figure Discharge Resistance vs. Temperature

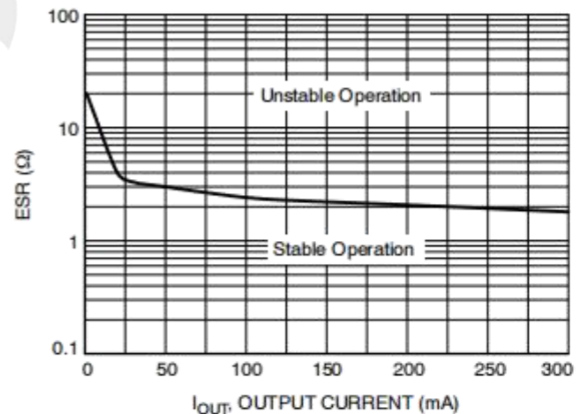
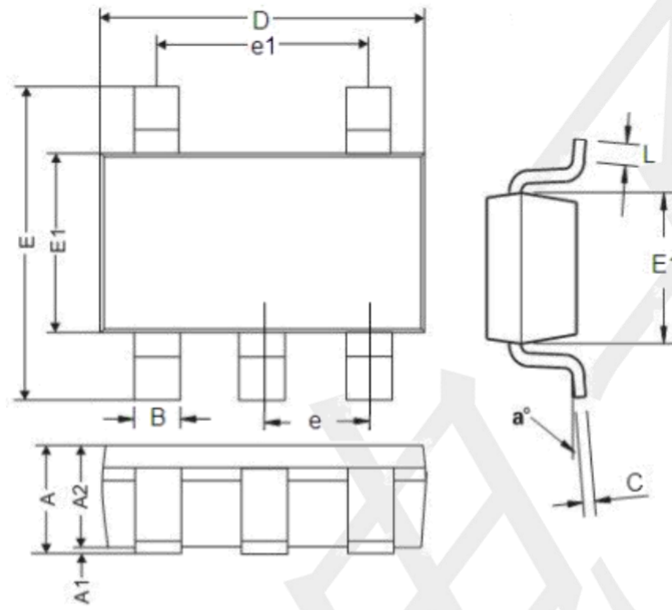


Figure Maximum C_{OUT} ESR Value vs. Load Current

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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