

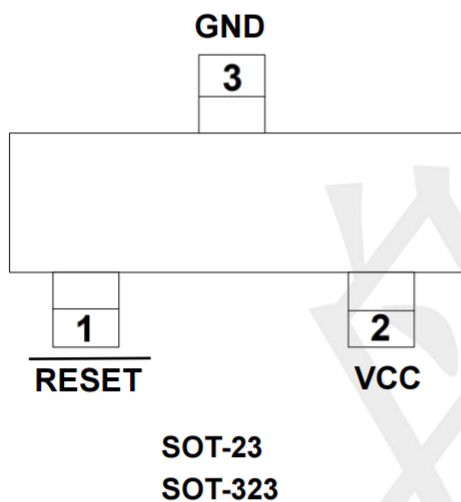
Features

- High Accurate $\pm 2\%$
- Precision VCC Monitoring of +2.5V, +3V, +3.3V and +5V Supplies
- Power Supply Transient Immunity
- Guaranteed Reset Valid to $V_{CC} = +1V$
- Fully Specified Over Temperature
- 2 μA Supply Current
- Available in One Output Configuration: Open-Drain Active-Low $\overline{RESET}$ Output
- Packages SOT-23, SOT-323

Applications

- Computers
- Embedded Systems
- Battery-Powered Equipments
- Intelligent Instruments
- CPU and Logic Circuit Reset
- Power Fail Detectors
- Automotive

Pin Definition



Ordering Information

TPMCP121T-xxxE/xx

RESET VOLTAGE:

475=4.63V
450=4.38V
315=3.08V
300=2.93V
270=2.63V
240=2.32V

PACKAGE TYPE

TT:SOT-23
LB:SOT-323

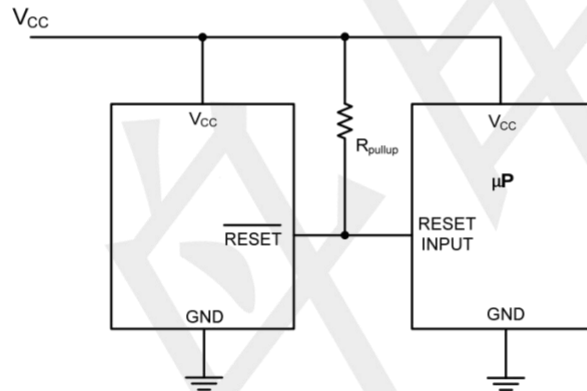
PIN CONFIGURATION

PIN	NAME	FUNCTION
1	GND	Ground
2	$\overline{RESET}$	$\overline{RESET}$ Output remains low while VCC is below the reset threshold, and for at least 140ms after VCC rises above the reset threshold.
3	VCC	+5V, +3.3V, +3V or +2.5V Supply Voltage .

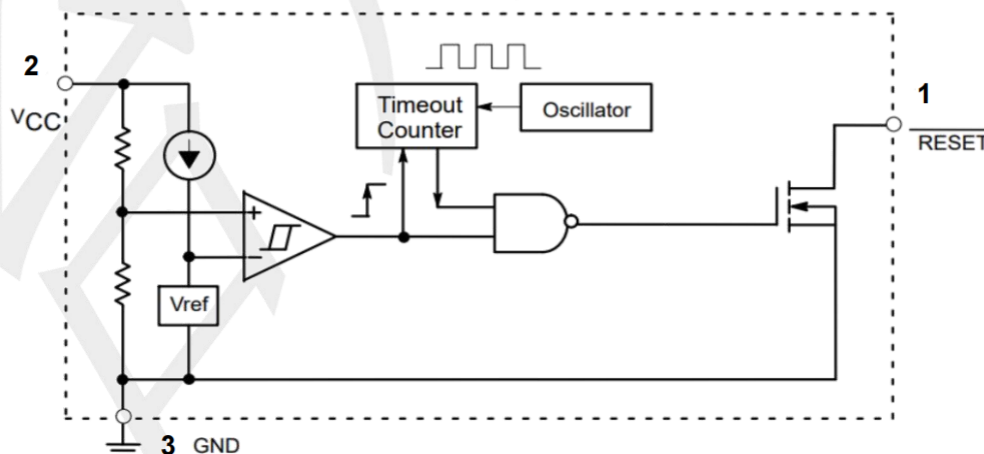
Absolute Maximum Ratings

Symbol	Parameter	Value	UNIT
VCC	Supply Voltage	-0.3 to +6.0	V
	$\overline{\text{RESET}}$	-0.3 to +6.0	V
ICC	Input Current, VCC	20	mA
IO	Output Current, $\overline{\text{RESET}}$	20	mA
	Rate of Rise, VCC	100	V/ μ s
PD	Continuous Power Dissipation Derate 4mW/°C above 70°C	320	mW
TA	Operating Temperature Range	-40 to +105	°C
TSTG	Storage Temperature Range	-65 to +150	°C
$R_{\theta JC}$	Thermal Resistance from Junction to Case	110	°C/W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	250	°C/W

TYPICAL APPLICATION CIRCUIT



FUNCTIONAL BLOCK DIAGRAM



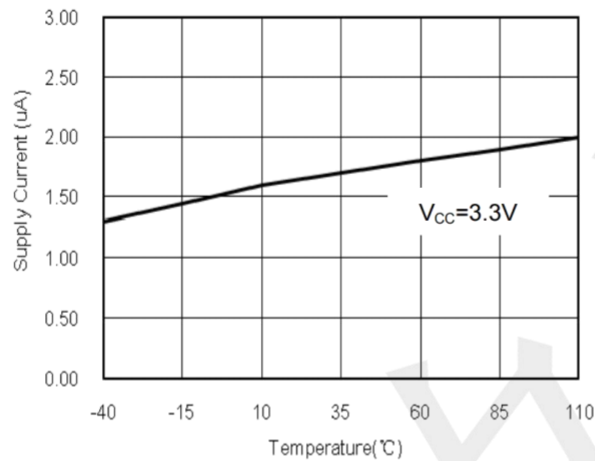
Electrical Characteristics

(VCC=5V for L/M/J versions, VCC=3.3V for T/S versions, VCC=3V for R version, and VCC=2.5V for Z version, TA=-40°C to +85°C, unless otherwise noted. Typical values are at TA=+25°C.)

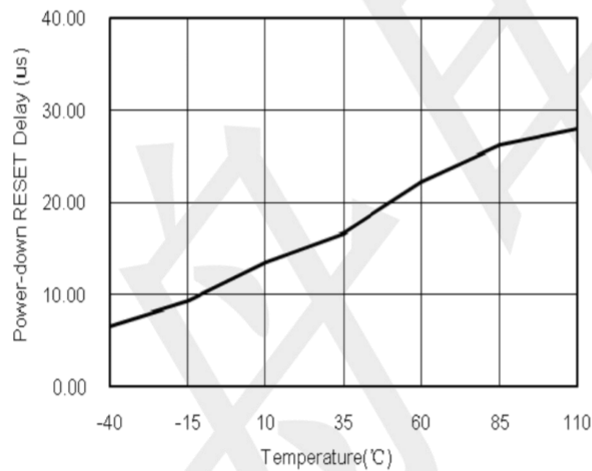
Symbol	Parameter	Conditions	MIN	Typ	MAX	UNIT
VCC	Supply Voltage Range	TA=0°C to +70°C	1.0	--	5.5	V
ICC	Supply Current		--	2.0	--	uA
VTH	Reset Threshold	TPMCP121T 475E/xx TA=+25°C	4.56	4.63	4.70	V
		TPMCP121T 475E/xx TA=-40°C to +85°C	4.50	--	4.75	
		TPMCP121T 450E/xx TA=+25°C	4.31	4.38	4.45	
		TPMCP121T 450E/xx TA=-40°C to +85°C	4.25	--	4.50	
		TPMCP121T 315E/xx TA=+25°C	3.04	3.08	3.11	
		TPMCP121T 315E/xx TA=-40°C to +85°C	3.00	--	3.15	
		TPMCP121T 300E/xx TA=+25°C	2.89	2.93	2.96	
		TPMCP121T 300E/xx TA=-40°C to +85°C	2.85	--	3.00	
		TPMCP121T 270E/xx TA=+25°C	2.59	2.63	2.66	
		TPMCP121T 270E/xx TA=-40°C to +85°C	2.55	--	2.70	
	Reset Threshold Tempco	TPMCP121T 240E/xx TA=+25°C	2.28	2.32	2.35	V
		TPMCP121T 240E/xx TA=-40°C to +85°C	2.25	--	2.38	
	Reset Threshold Tempco		--	150	--	ppm/°C
	VCC to Reset Delay	VCC=VTH to (VTH-100mV)	--	10	--	μS
TRP	Reset Active Timeout Period		140	240	560	mS
VOL	RESET Output Voltage Low	VCC=VTH min, ISINK=1.2mA	--	--	0.3	V
		VCC=VTH min, ISINK=3.2mA	--	--	0.4	
		VCC>1.0V, ISINK=50μA	--	--	0.3	
	RESET Open-Drain Output Leakage Current	VCC>VTH, RESET Deasserted	--	--	1	μA

Typical Operating Characteristics (TA=+25°C, unless otherwise noted.)

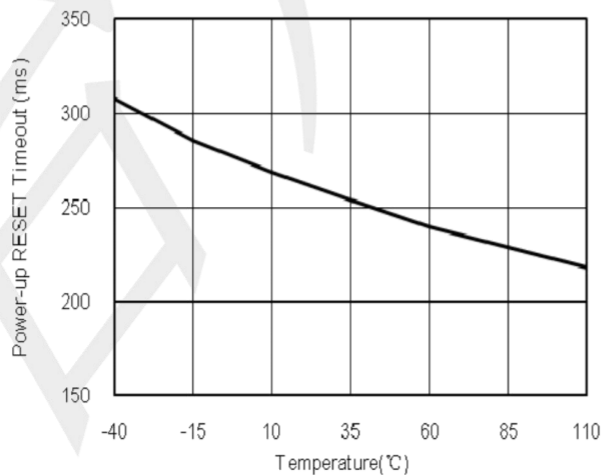
Supply Current vs. Temperature



Power-Down RESET Delay vs. Temperature

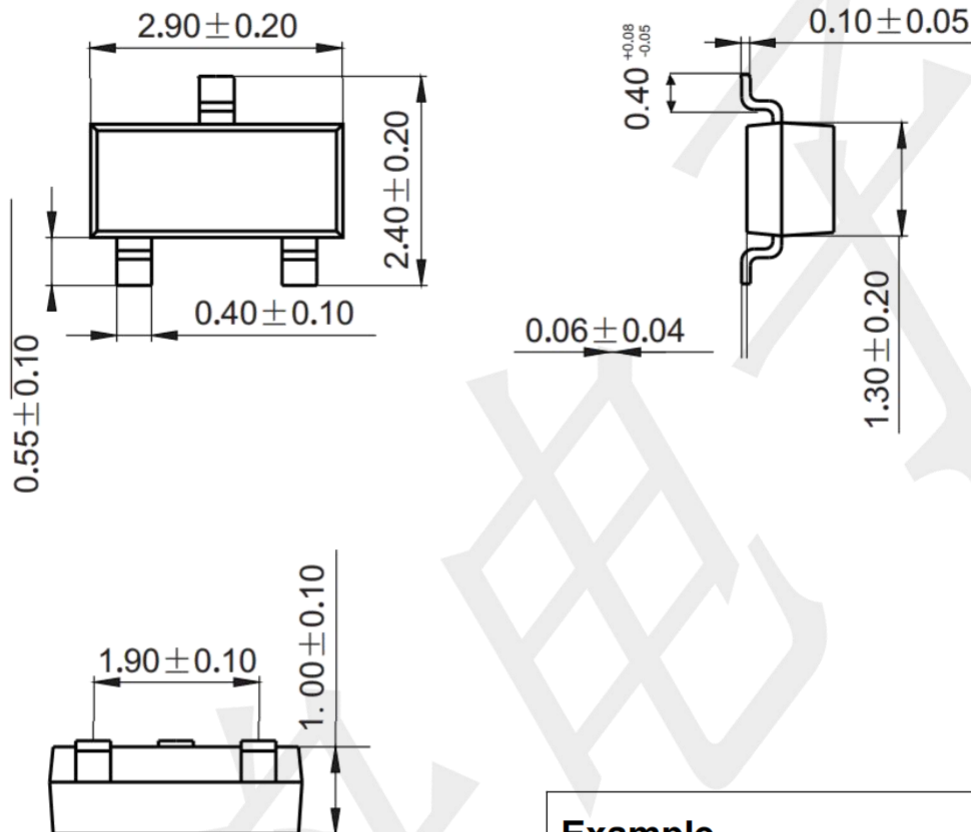


Power-Up RESET Timeout vs. Temperature

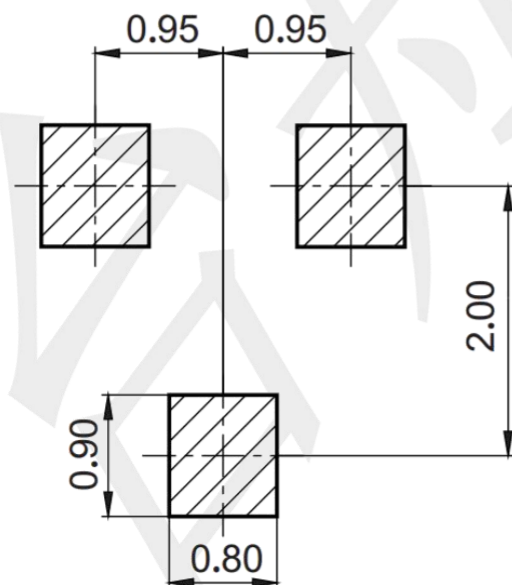


Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

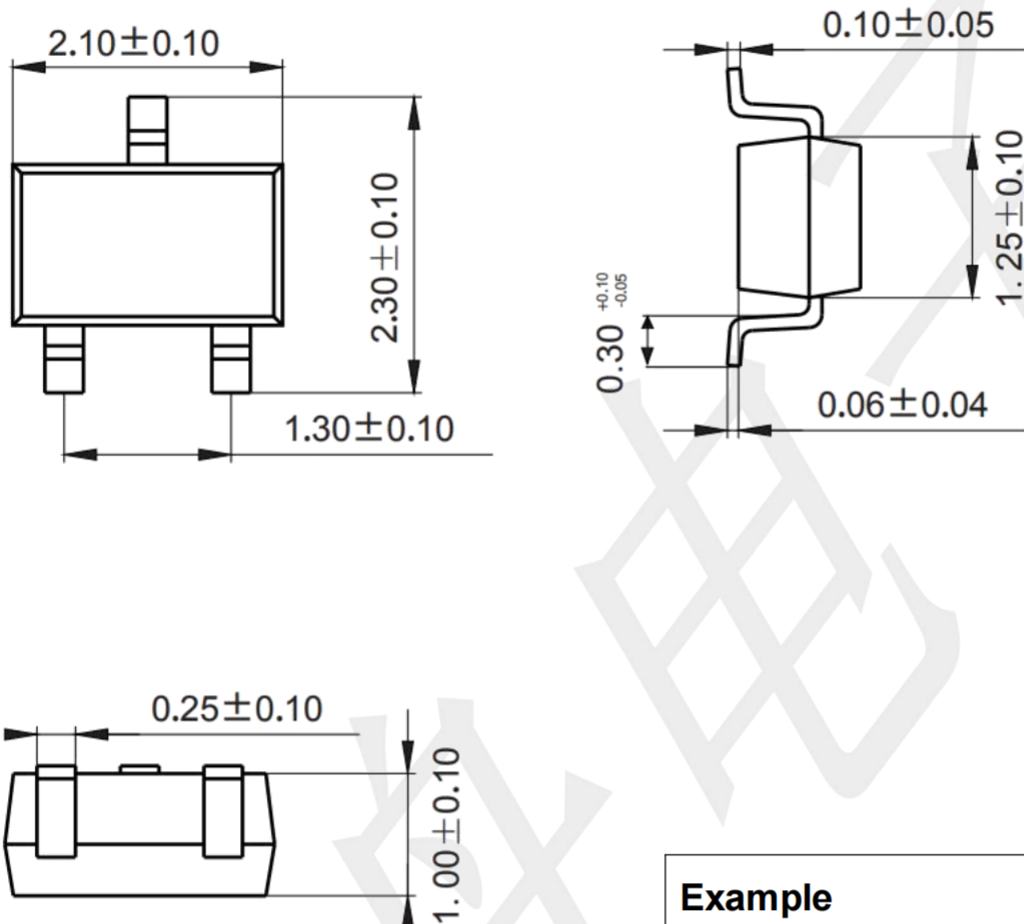


Example

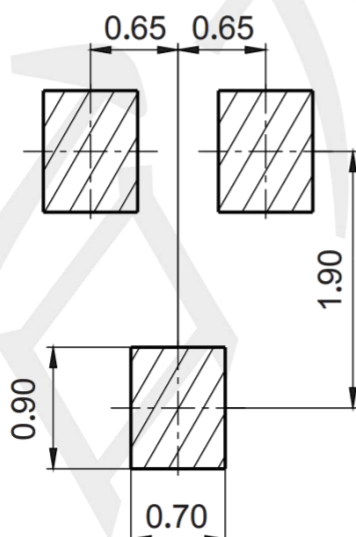
Part Number	Reset Threshold	Packages
TPMCP121T-240E/TT	2.32V	SOT-23
TPMCP121T-270E/TT	2.63V	SOT-23
TPMCP121T-300E/TT	2.93V	SOT-23
TPMCP121T-315E/TT	3.08V	SOT-23
TPMCP121T-450E/TT	4.38V	SOT-23
TPMCP121T-475E/TT	4.63V	SOT-23

Package Outline Dimensions (unit: mm)

SOT-323



Mounting Pad Layout (unit: mm)



Example

Part Number	Reset Threshold	Packages
TPMCP121T-240E/LB	2.32V	SOT-323
TPMCP121T-270E/LB	2.63V	SOT-323
TPMCP121T-300E/LB	2.93V	SOT-323
TPMCP121T-315E/LB	3.08V	SOT-323
TPMCP121T-450E/LB	4.38V	SOT-323
TPMCP121T-475E/LB	4.63V	SOT-323