



DESCRIPTION

The A6254F is a high ripple rejection, low power, low dropout, short circuit protected CMOS voltage regulator.

The A6254F quiescent current at no-load is as low as 1.5uA, and it can provide an output current of 250mA under the condition that the input and output voltage difference is extremely small, and it can still maintain a good regulation rate.

The A6254F design suitable for portable battery-powered products, watch Meters and security products, etc.

The A6254F is available in SOT-23, SOT-25 and SOT89-3 Packages.

FEATURES

- ±2% Output Voltage Tolerance
- Vin Range Up To 36V
- Ultra-Low Quiescent Current 1.5uA
- Built-In Thermal Protection
- Built-In Overcurrent Protection
- Compatible with Low ESR Ceramic Capacitors
- Available in SOT-23, SOT-25 and SOT89-3 Packages

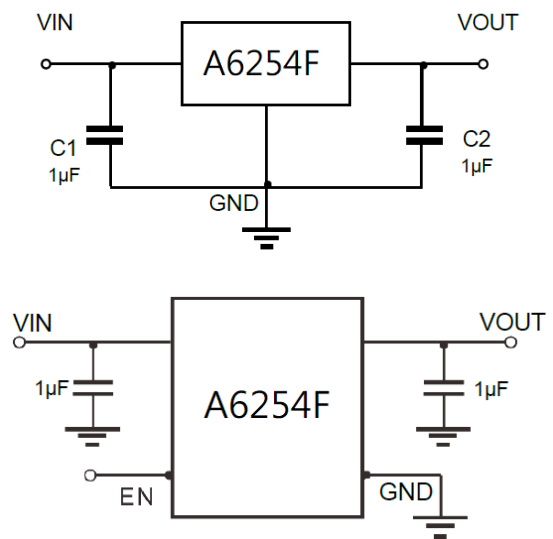
APPLICATION

- Portable Battery Powered Devices (Sensor Lights, Sterilization Boxes, Etc.)
- Security (Fire Alarms, Smoke Detectors, Etc.)
- Smart Meters (Electricity, Gas, Etc.)
- Communication Equipment (Mobile Phone, PDA, Etc.)
- Home Appliances (Light Strips, Desk Lamps, Etc.)
- Sensors

ORDERING INFORMATION

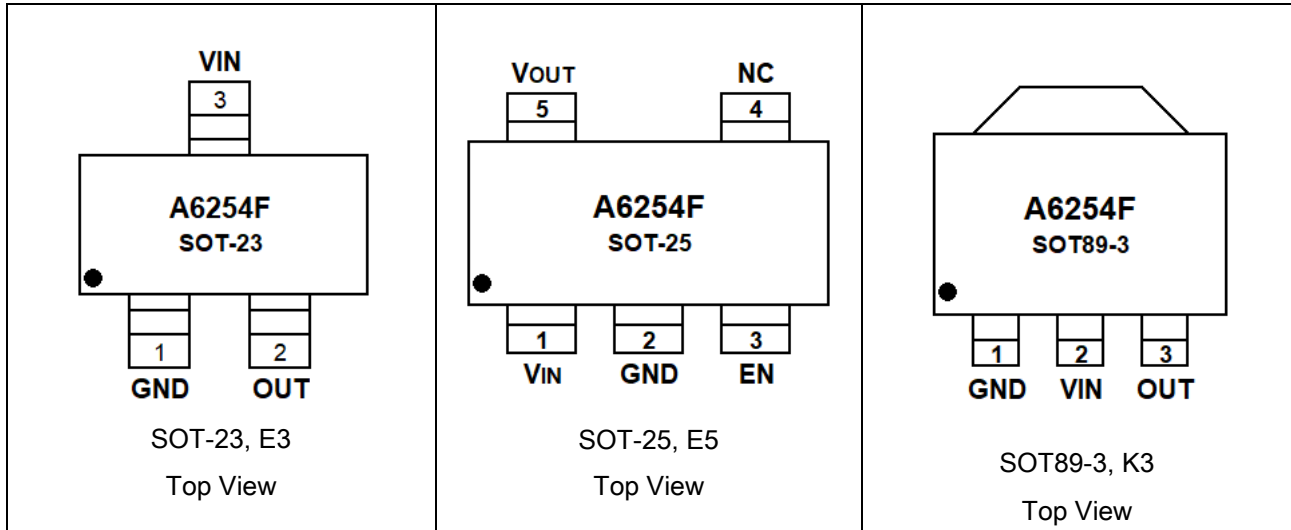
Package Type	Part Number	
SOT-23 SPQ: 3,000pcs/Reel	E3	A6254FE3R-XX
		A6254FE3VR-XX
SOT-25 SPQ: 3,000pcs/Reel	E5	A6254FE5R-XX
		A6254FE5VR-XX
SOT89-3 SPQ: 1,000pcs/Reel	K3	A6254FK3R-XX
		A6254FK3VR-XX
Note	XX: Output Voltage 18=1.8V 33=3.3V 50=5.0V V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

TYPICAL APPLICATION





PIN DESCRIPTION



Pin #			Symbol	Function
SOT-23	SOT-25	SOT89-3		
1	2	1	GND	Ground
2	5	3	V _{OUT}	Output Voltage Pin
3	1	2	V _{IN}	Output Voltage Pin
-	3	-	EN	Enable Pin
-	4	-	NC	Not Connect

**ABSOLUTE MAXIMUM RATINGS**

V_{IN} , Input Voltage	-0.3V ~ 39V
V_{EN} , EN Voltage Range	-0.3V ~ V_{IN}
V_{OUT} , Output Voltage Range	-0.3V ~ +6V
Lead Temperature (Soldering, 10 sec.)	300°C
T_{STG} , Storage Temperature	-65°C~150°C
T_J , Junction Temperature	125°C

Stress beyond above listed "Absolute Maximum Ratings" may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

RECOMMENDED WORK CONDITIONS

Parameter	Symbol	Min	Max	Unit
Input Voltage	V_{IN}	5	36	V
Junction Temperature	T_J	-40	100	°C

ELECTRICAL CHARACTERISTICS

$V_{IN} = 12V$, $I_{OUT} = 1mA$, $C_{IN} = C_{OUT} = 1\mu F$, $T_J = 25^\circ C$, unless otherwise noted.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	V_{OUT}		-2%	-	2%	V
Line Regulation	ΔV_{LINE}	$V_{IN} = (V_{OUT} + 1V) \sim 36V$, or $V_{IN} = 5V \sim 36V$, if $V_{OUT} < 4V$	-	2	12	mV
Load Regulation	ΔV_{LOAD}	$I_{OUT} = 1mA \sim 100mA$, $V_{IN} = V_{OUT} + 2V$	-	28	45	mV
		$I_{OUT} = 1mA \sim 250mA$, $V_{IN} = V_{OUT} + 2V$	-	75	120	
Dropout Voltage	V_{DROP}	$I_{OUT} = 100mA$, $V_{OUT} = 3.3V$	-	400	-	mV
		$I_{OUT} = 500mA$, $V_{OUT} = 3.3V$	-	1200	-	
Quiescent Current	I_Q	$I_{OUT} = 0mA$	-	1.50	4	μA
Current Limit	I_{CL}	-	270	340	-	mA
Enable High Level	V_{ENHI}	-	0.90	-	-	V
Enable Low Level	V_{ENLO}	-	-	-	0.40	V
Enable Pin Pull High Current	I_{EN}	-	-	0.10	-	μA
Power-Supply Rejection Ratio	PSRR	$f = 100Hz$	-	70	-	dB
Thermal Shutdown	T_{SD}		-	140	-	°C
Thermal Shutdown HY	T_{SDHY}		-	20	-	°C



TYPICAL PERFORMANCE CHARACTERISTICS

$V_{IN} = 12V$, $I_{OUT} = 1mA$, $C_{IN} = C_{OUT} = 1\mu F$, $T_J = 25^\circ C$, unless otherwise noted.

Fig 1. V_{OUT} vs. V_{IN}

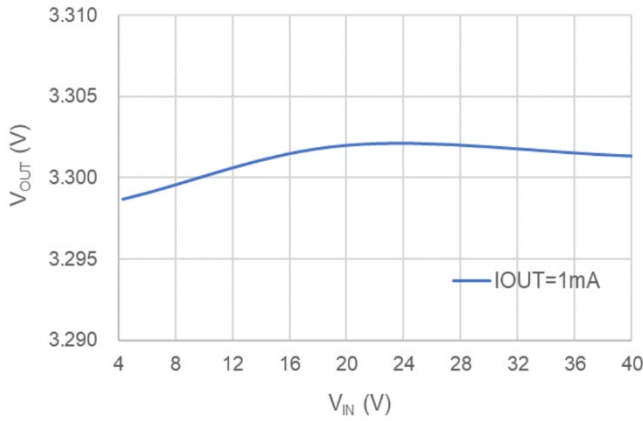


Fig 2. I_Q vs. V_{IN}

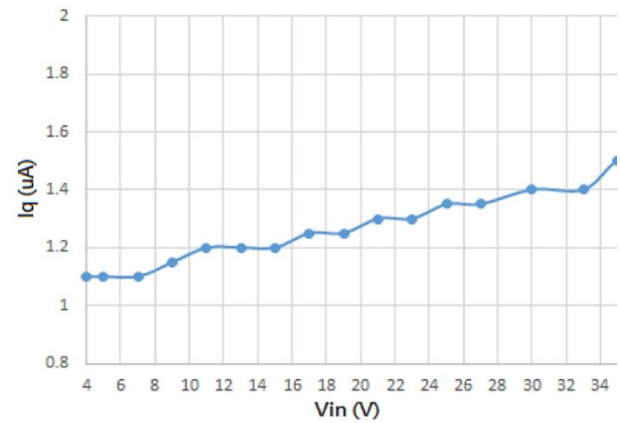


Fig 3. V_{OUT} vs. Load

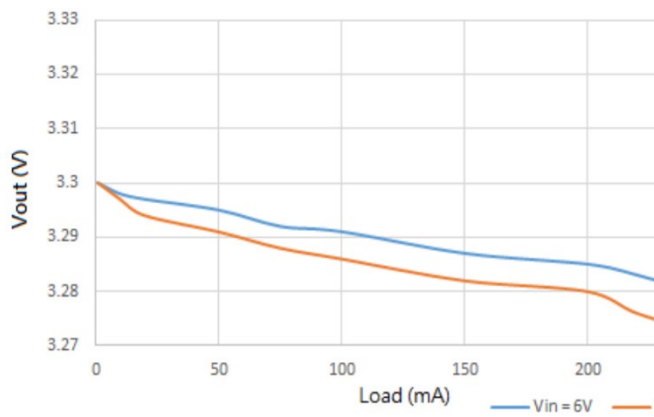


Fig 4. Dropout vs Load

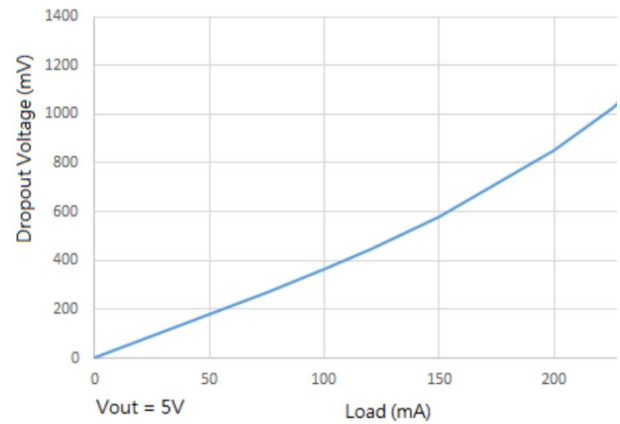


Fig 5. V_{OUT} (3.3V) vs. Temperature

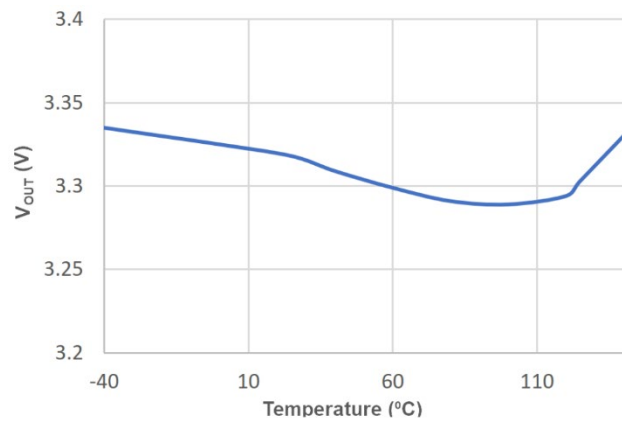
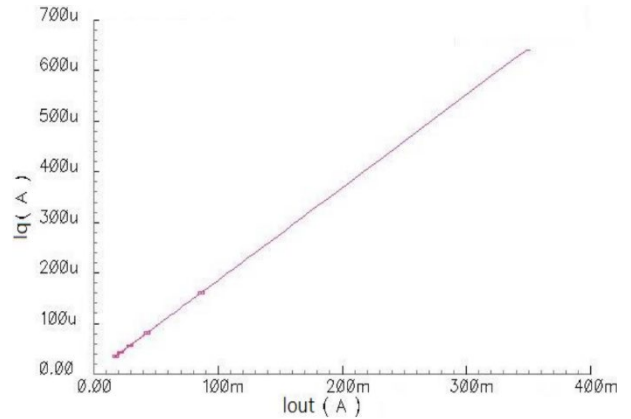
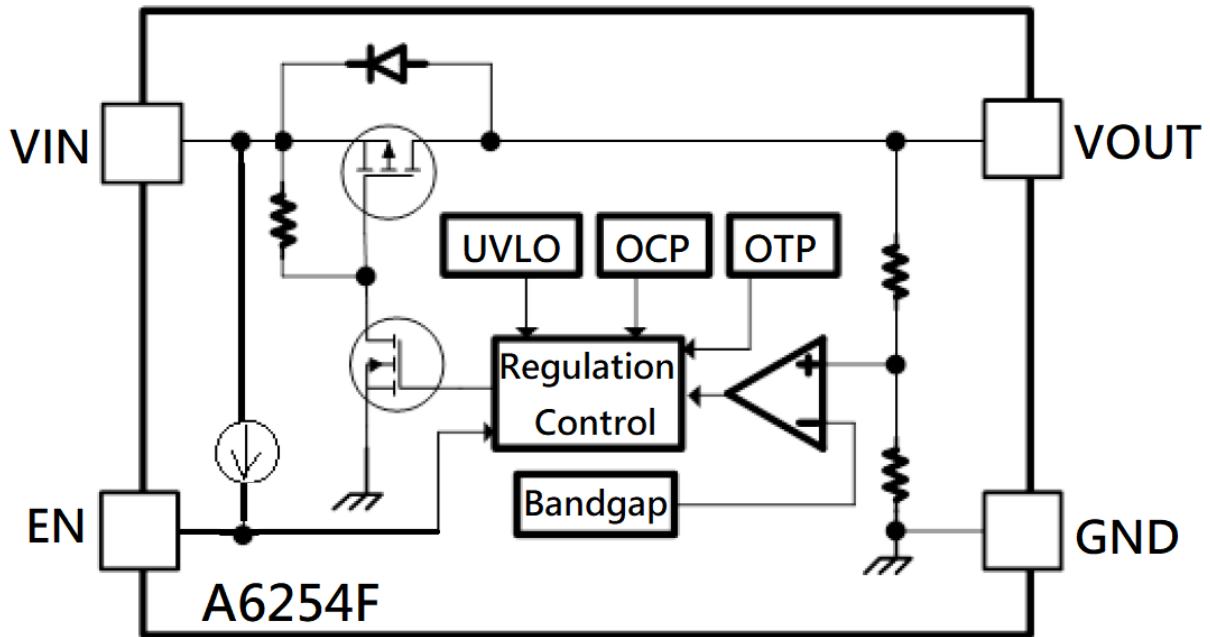


Fig 6. I_Q vs. Load





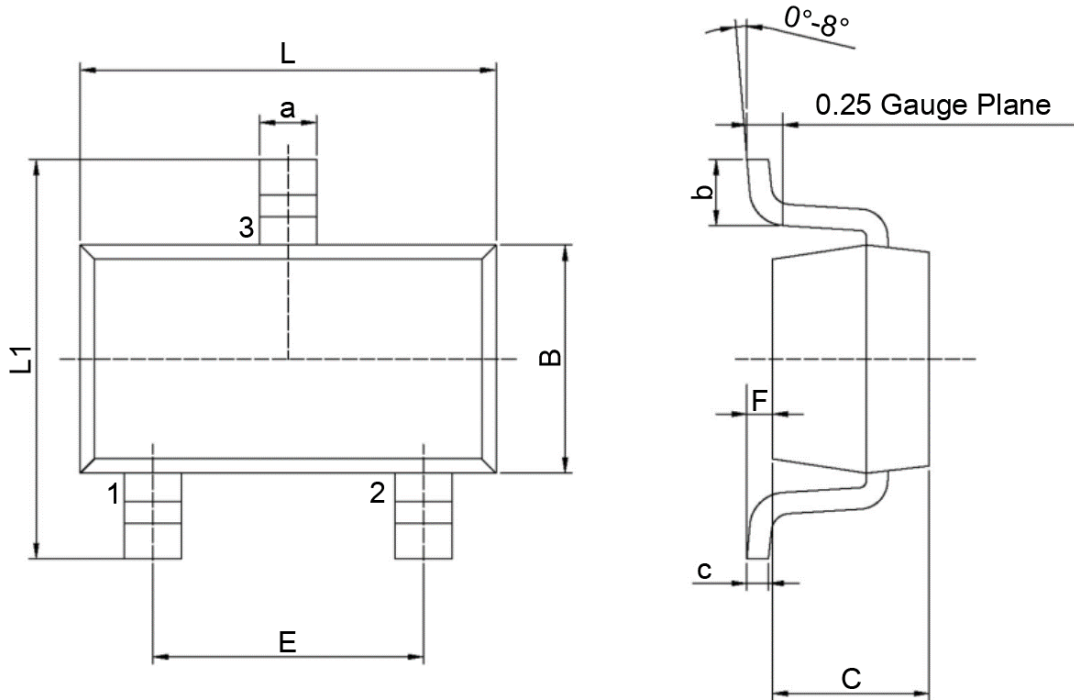
BLOCK DIAGRAM





PACKAGE INFORMATION

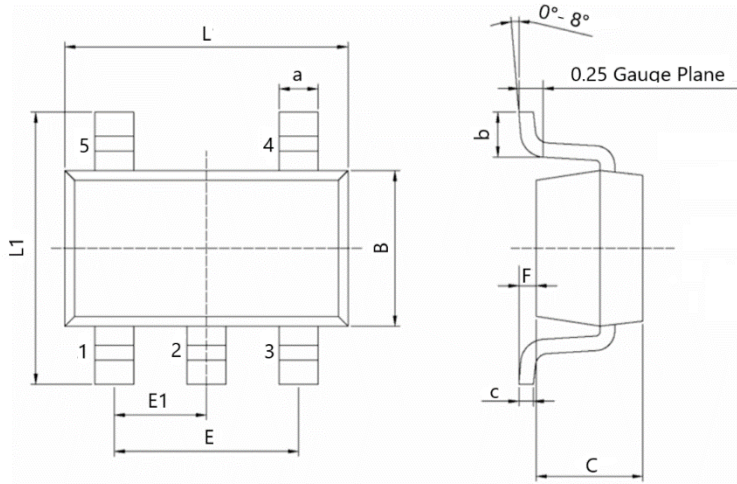
Dimension in SOT-23 (Unit: mm)



Symbol	MILLIMETERS	
	Min.	Max.
a	0.350	0.500
B	1.500	1.700
b	0.350	0.550
C	0.900	1.300
c	0.100	0.200
E	1.800	2.000
F	0	0.150
L	2.820	3.020
L1	2.600	3.000



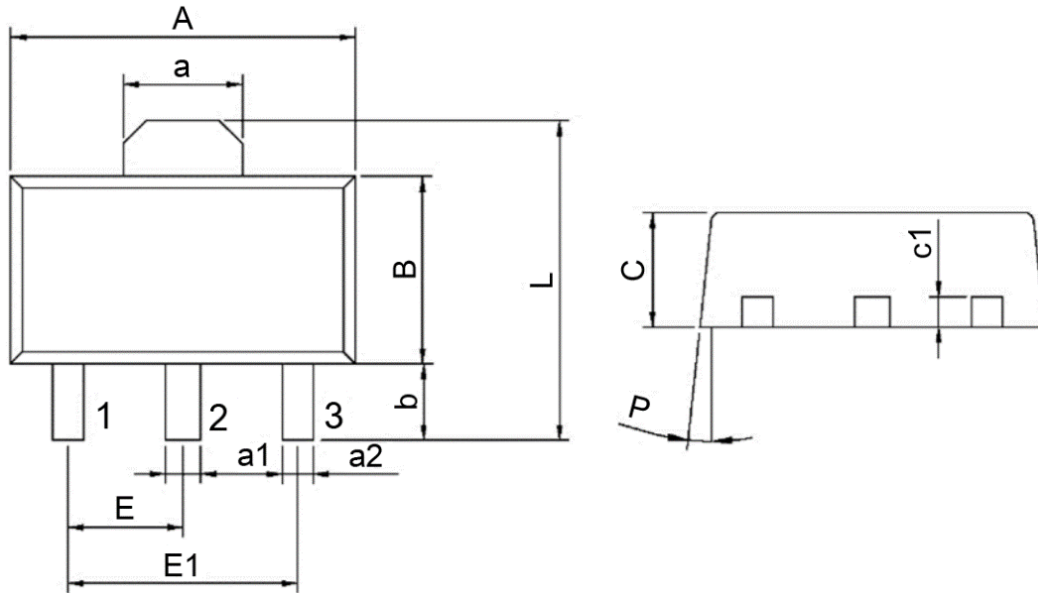
Dimension in SOT-25 (Unit: mm)



Symbol	Min.	Max.
a	0.35	0.50
B	1.50	1.70
b	0.35	0.55
C	0.90	1.30
c	0.10	0.20
E	1.80	2.00
E1	0.85	1.05
F	0	0.15
L	2.82	3.02
L1	2.60	3.00



Dimension in SOT89-3 (Unit: mm)



Symbol	Millimeters	
	Min	Max
A	4.400	4.700
a	1.450	1.650
a1	0.360	0.560
a2	0.300	0.500
B	2.350	2.650
b	0.800	1.200
C	1.400	1.700
c1	0.350	0.500
E	1.400	1.600
E1	2.800	3.200
L	3.878	4.478
P	6°	



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