



DESCRIPTION

The A6058F is an 100V high voltage linear regulator, The A6058F is stable with any output capacitance above 2.2μF and input capacitance above 0.47μF.

The A6058F has enable pin (EN) compatible with standard CMOS logic to enable low current shutdown mode.

The A6058F is available in SOT-25 and PSOP8 packages.

FEATURES

- Vin Up To 100V
- Adjustable Output: 1.2~5.0V
- ±1.5% Output Voltage Tolerance Over Temperature
- Adjustable Output Voltage Range
- Low Quiescent Current 23uA
- 8ua Quiescent Current During Shutdown
- Built-In Thermal Protection
- Built-In Overcurrent Protection

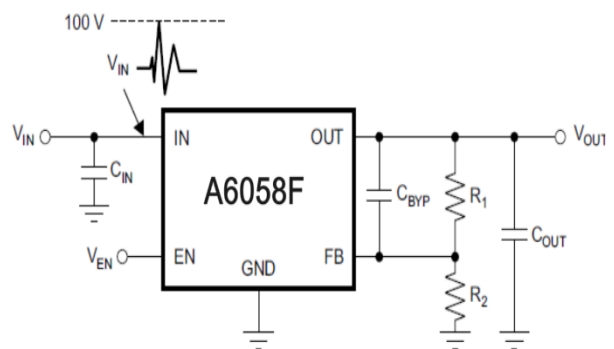
APPLICATION

- Microprocessors, Microcontrollers Powered by Industrial Buses (with High Voltage Transients)
- Industrial Automation (BMS, Robotics, Etc.)
- Telecom Infrastructure
- Vehicle Electronics
- Power Over Ethernet (Poe)
- LED Lighting
- Bias Supply

ORDERING INFORMATION

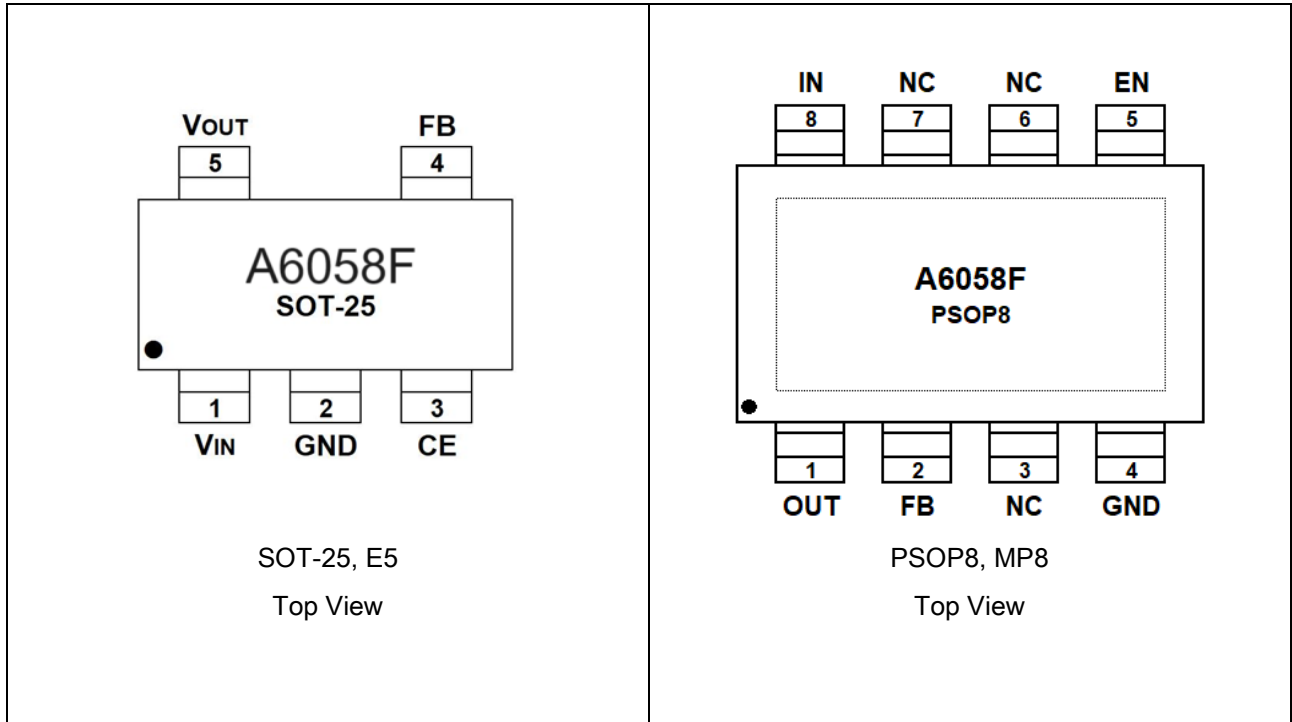
Package Type	Part Number	
SOT-25 SPQ: 3,000pcs/Reel	E5	A6058FE5R-ADJ
		A6058FE5VR-ADJ
PSOP8 SPQ: 4,000pcs/Reel	MP8	A6058FMP8R
		A6058FMP8VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

TYPICAL APPLICATION





PIN CONFIGURATION



Pin #		Symbol	Function
SOT-25	ESOP8		
5	1	VOUT	Output Voltage Pin
4	2	FB	Feedback Pin
-	3	NC	No connected
2	4	GND	Ground
3	5	EN	Enable Pin
-	6	NC	No connected
-	7	NC	No connected
1	8	VIN	Input Voltage pin

**ABSOLUTE MAXIMUM RATINGS**

V _{IN} , Input Voltage	-0.3V ~ + 110V
V _{OUT} , Output voltage	-0.3V ~ +60V
V _{EN} , Feedback Voltage	-0.3V ~ +5.5V
V _{OUT} , Enable voltage	-0.3V ~ +110V
-, Lead Temperature (Soldering, 10 sec.)	300°C
T _{stg} , Storage Temperature	-65°C ~ +150°C
T _{STG} , Junction Temperature	125°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

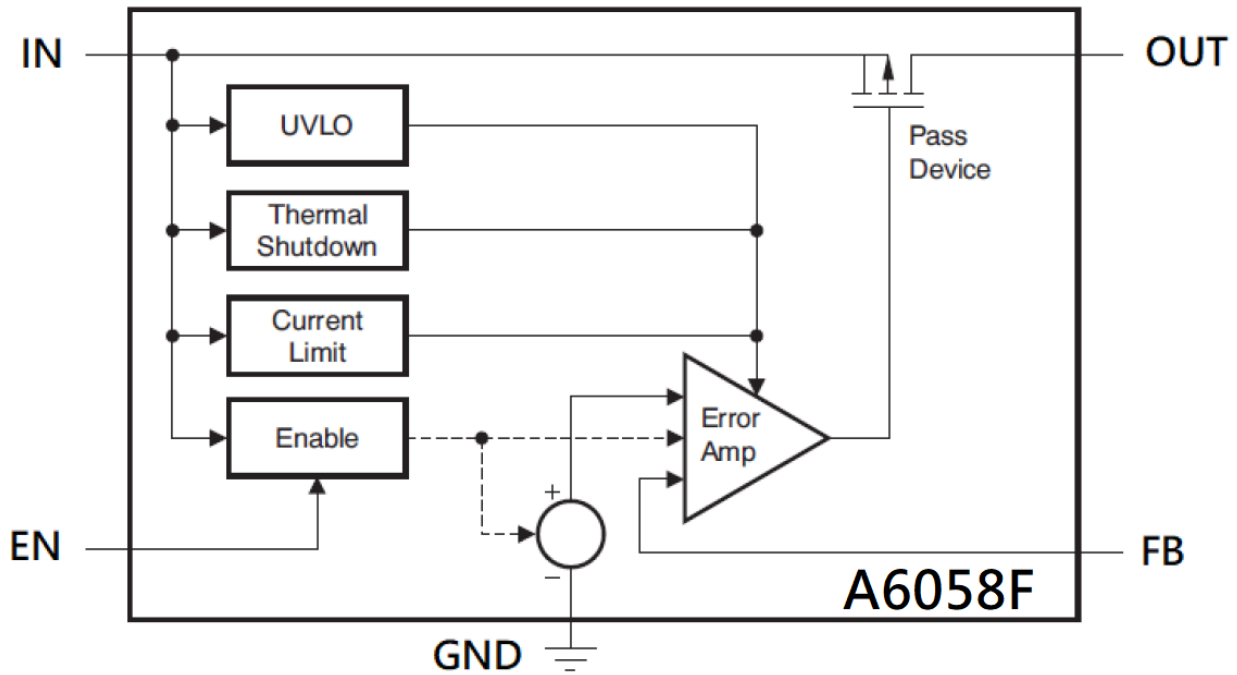
RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Conditions
Input Voltage	V _{IN}	7V ~ 100V
Output Voltage	V _{OUT}	1.2V ~ 50V
Enable Voltage	V _{EN}	0V ~ 100V
Output Current	I _{OUT}	0mA ~ 50mA
Junction Temperature	T _j	-40°C ~ + 125°C

ELECTRICAL CHARACTERISTICS

V_{IN}=V_{OUT}+3V, or V_{IN}=7V (whichever is greater), I_{OUT}=100μA, C_{IN}= 1μF, C_{OUT}=4.7μF , T_J=25°C, unless otherwise specified

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
Input Voltage	V _{IN}		7		100	V
Internal Reference	V _{REF}		0.788	0.80	0.812	V
Line Regulation	ΔV _{LINE}	V _{IN} = 7V ~100V		3	20	mV
Load Regulation	ΔV _{LOAD}	100μA < I _{OUT} < 50mA		0.400		%
Dropout Voltage	V _{DROP}	I _{OUT} = 20mA		1		V
		I _{OUT} = 50mA		3		V
Quiescent Current	I _Q	I _{OUT} = 0mA,		23	40	μA
Shutdown Current	I _{SD}	V _{EN} = 0V		8	15	μA
Current Limit	I _{CL}	V _{OUT} = 90% V _{OUT} (NOM)	55	120		mA
Enable High Level	V _{ENHI}		1.50		V _{IN}	V
Enable Low Level	V _{ENLO}		0		0.40	V
Enable Pin Current	I _{EN}	7V<V _{IN} <100V, V _{IN} =V _{EN}		0.02	1	μA
Feedback Pin Current	I _{FB}			0.01	0.11	μA
Thermal Shutdown	T _{SD}	Shutdown, temperature increasing		150		°C
		Reset, temperature decreasing		130		°C





TYPICAL PERFORMANCE CHARACTERISTICS

$V_{IN}=12V$, $V_{OUT}=5V$, $I_{OUT}=1mA$, $C_{IN}=0.47\mu F$, $C_{OUT}=2.2\mu F$, $T_J=25^\circ C$, unless otherwise specified

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

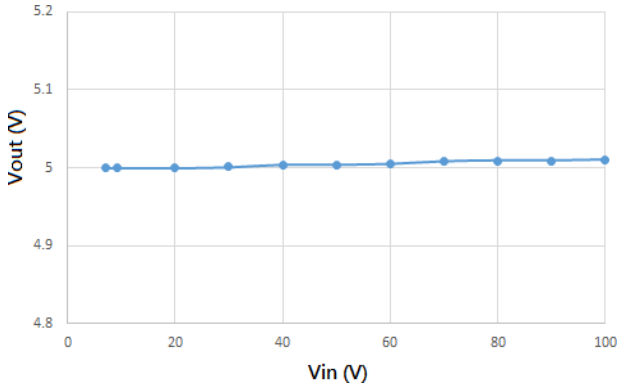


Fig 2. I_Q vs V_{IN}

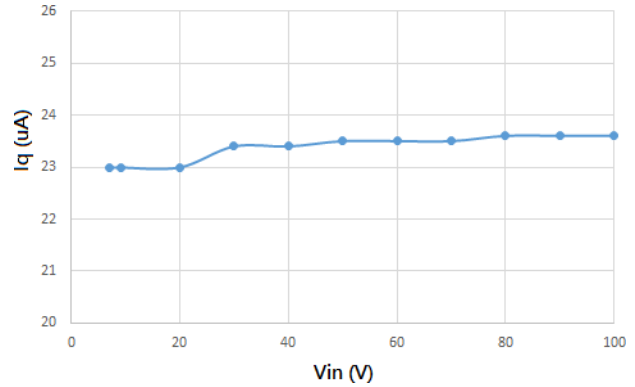


Fig 3. Load Transient 0 to 50mA

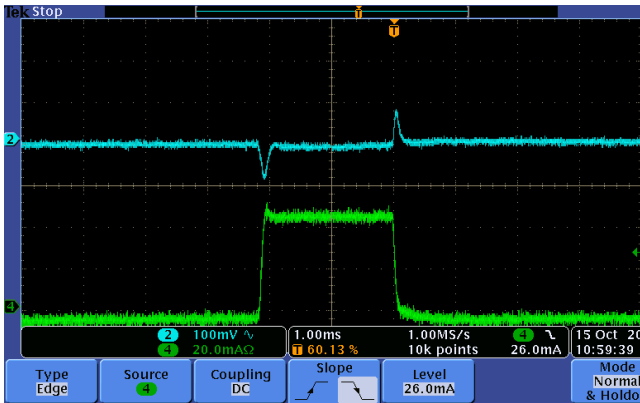


Fig 4. Enable ON/OFF

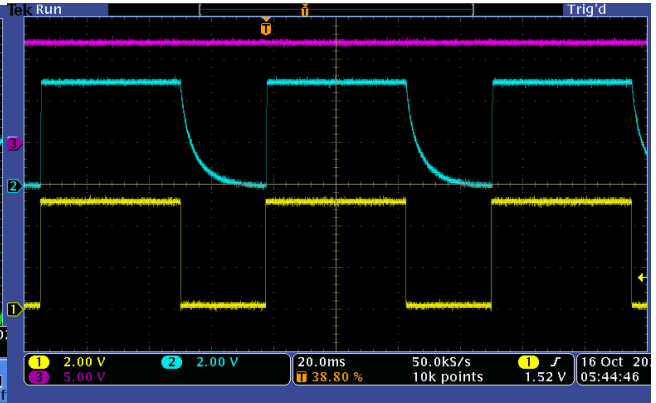


Fig5 $V_{IN}=100V$, V_{OUT} Short to GND

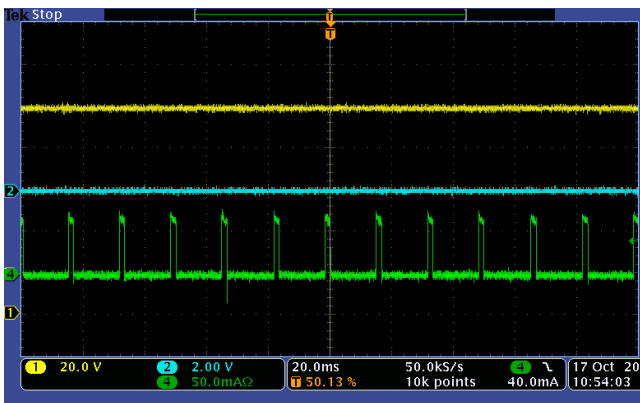
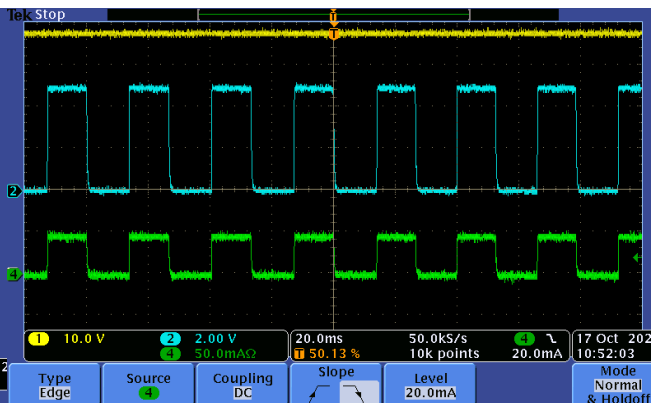


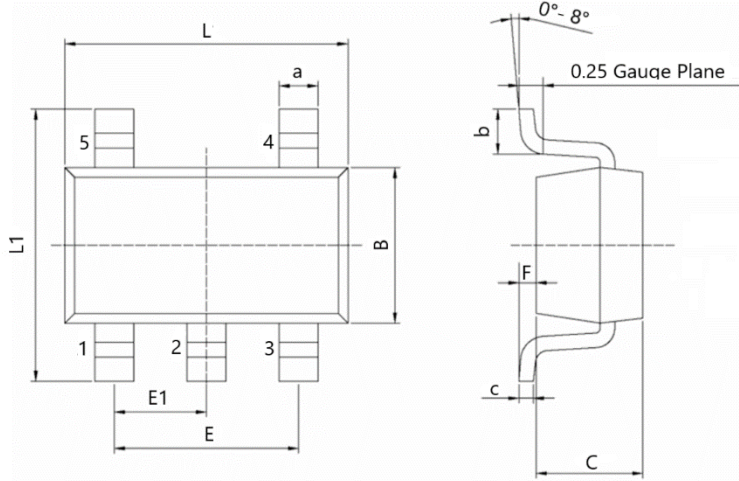
Fig 6. $V_{IN}=36V$, $V_{OUT}=5V$, $R_{LOAD}=100\Omega$, Thermal Protect





PACKAGE INFORMATION

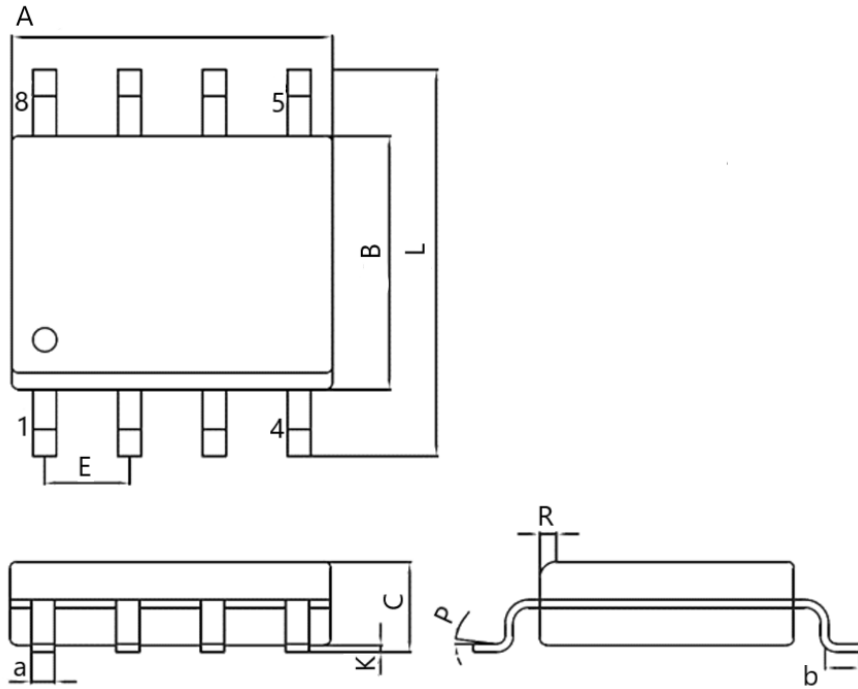
Dimension in SOT-25 (Unit: mm)



Symbol	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
E1	0.850	1.050
F	0	0.15
L	2.820	3.020
L1	2.600	3.000



Dimension in PSOP8 (Unit: mm)



Symbol	Min.	Max.
A	4.700	5.100
a	0.350	0.490
B	3.700	4.100
b	0.400	1.250
C	1.350	1.750
E	1.270 BSC.	
K	0.100	0.220
L	5.800	6.200
P	0°	7°
R	0.300	0.600



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