

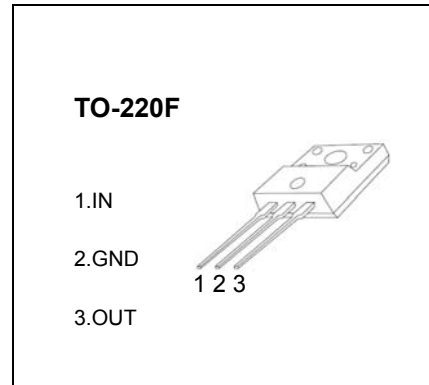


TO-220F Plastic-Encapsulate Voltage Regulators

CJ7812F Three-terminal positive voltage regulator

FEATURES

- Maximum Output current I_{OM} : 1.5 A**
- Output voltage V_o : 12 V**
- Continuous total dissipation**
 - P_D : 1.5 W ($T_a = 25\text{ }^\circ\text{C}$)
 - 15 W ($T_c = 25\text{ }^\circ\text{C}$)



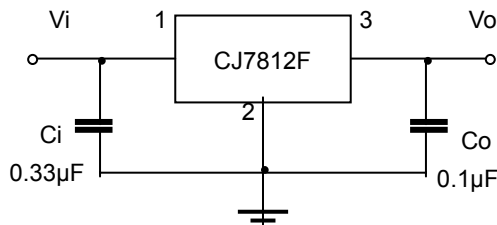
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	V_i	40	V
Thermal Resistance from Junction to Air	$R_{\theta JA}$	83.3	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	8.33	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_{OPR}	0-150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=19V, I_o=500mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

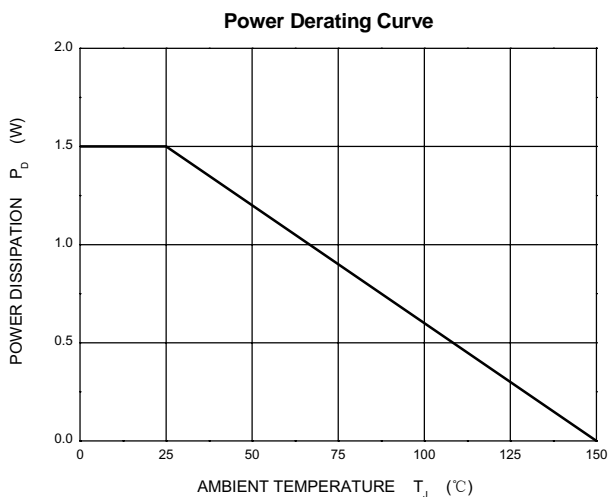
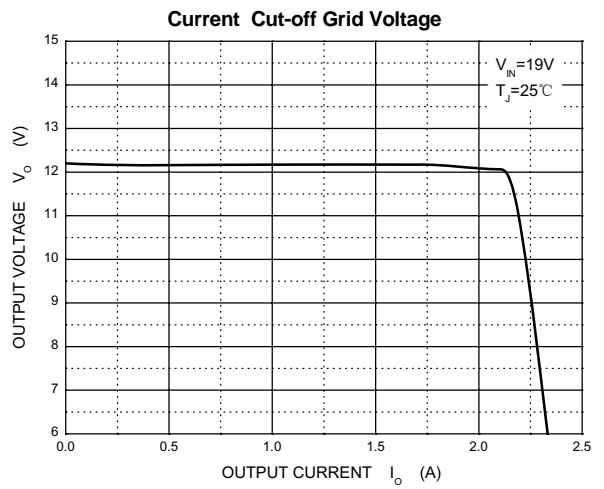
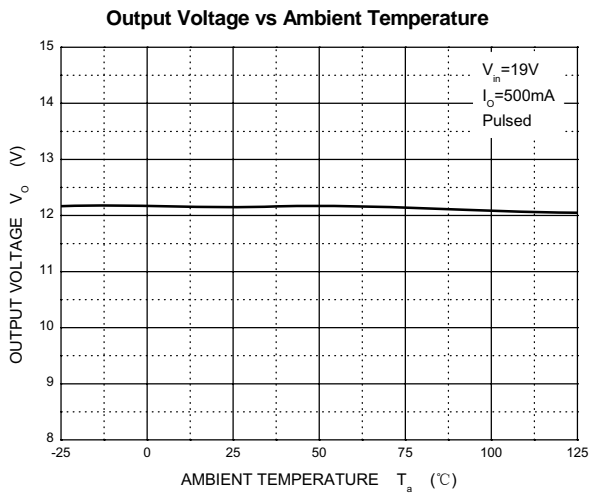
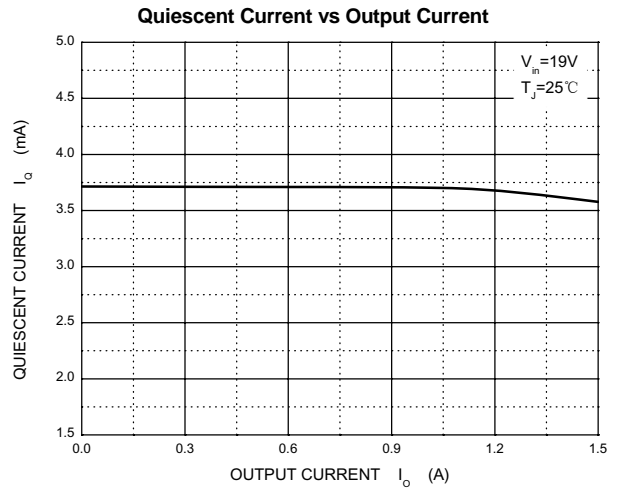
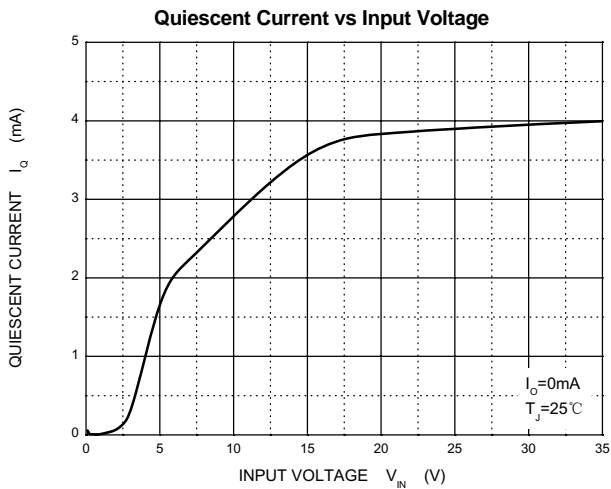
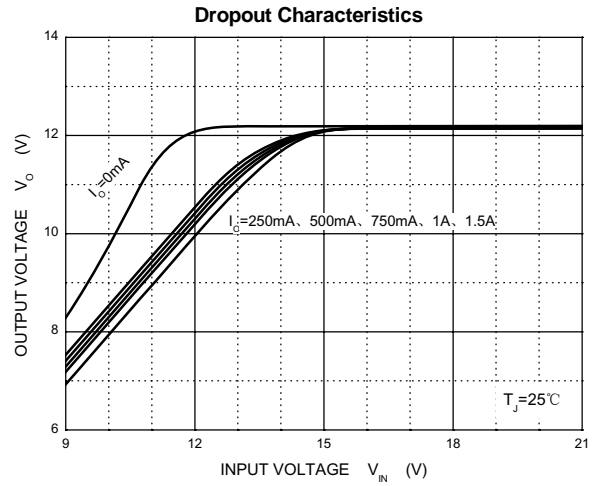
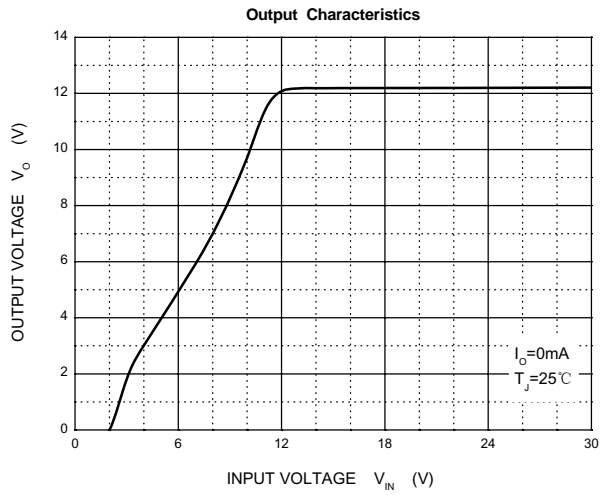
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$25\text{ }^\circ\text{C}$	11.5	12.0	12.5	V
		$I_o = 5mA-1A, 14.5V \leq V_i \leq 27V, P \leq 15W$ $0-125\text{ }^\circ\text{C}$	11.4	12	12.6	V
Load Regulation	ΔV_o	$14.5V \leq V_i \leq 30V$ $25\text{ }^\circ\text{C}$		10	240	mV
		$16V \leq V_i \leq 22V$ $25\text{ }^\circ\text{C}$		3	120	mV
Line Regulation	ΔV_o	$I_o = 5mA - 1.5A$ $25\text{ }^\circ\text{C}$		12	240	mV
		$I_o = 250mA - 750mA$ $25\text{ }^\circ\text{C}$		4	120	mV
Quiescent Current	I_q	$25\text{ }^\circ\text{C}$		4.3	8	mA
Quiescent Current Change	ΔI_q	$5.0mA \leq I_o \leq 1.0A$ $0-125\text{ }^\circ\text{C}$			0.5	mA
		$14.5V \leq V_i \leq 30V$ $0-125\text{ }^\circ\text{C}$			1.0	mA
Output Voltage Drift	$\Delta V_o / \Delta T$	$I_o = 5mA$ $0-125\text{ }^\circ\text{C}$		-1		$mV/^\circ\text{C}$
Output Noise Voltage	V_N	$f = 10Hz \text{ to } 100KHz$ $25\text{ }^\circ\text{C}$		75		μV
Ripple Rejection	RR	$f = 120Hz, 15V \leq V_i \leq 25V$ $0-125\text{ }^\circ\text{C}$	55	71		dB
Dropout Voltage	V_d	$I_o = 1.0A$ $25\text{ }^\circ\text{C}$		2		V
Output Resistance	R_o	$f = 1KHz$ $0-125\text{ }^\circ\text{C}$		18		$m\Omega$
Short Circuit Current	I_{sc}	$25\text{ }^\circ\text{C}$		350		mA
Peak Current	I_{pk}	$25\text{ }^\circ\text{C}$		2.2		A

TYPICAL APPLICATION

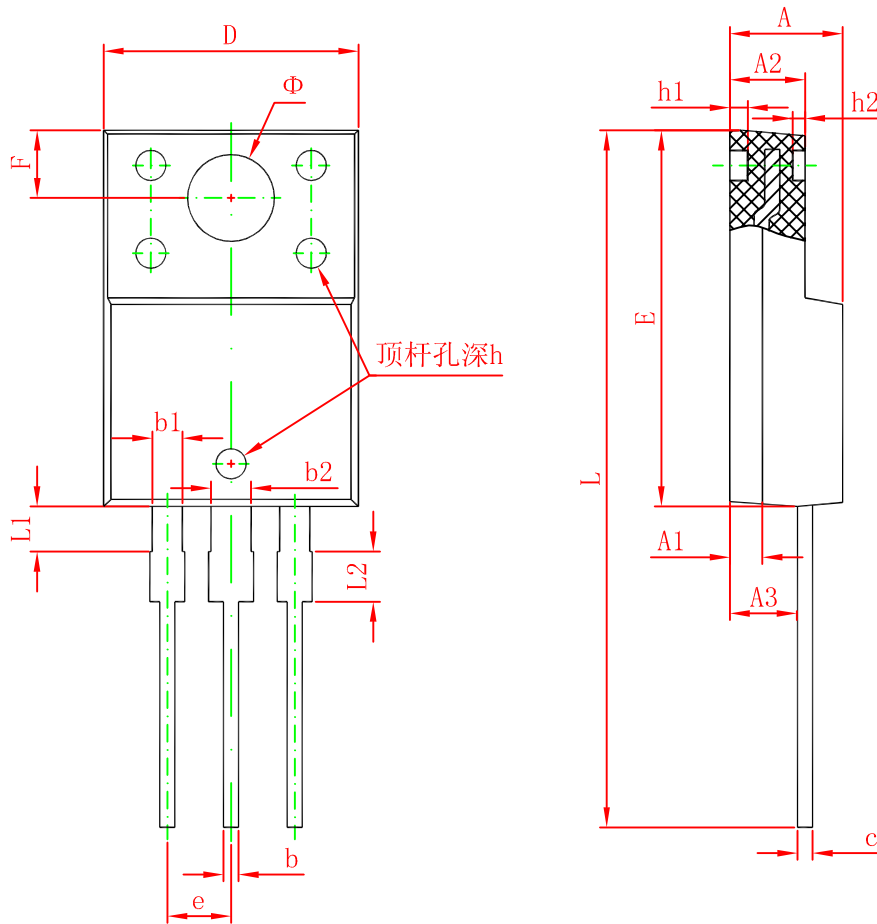


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics



TO-220F Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.300 REF.		0.051 REF.	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.500	0.750	0.020	0.030
b1	1.100	1.350	0.043	0.053
b2	1.500	1.750	0.059	0.069
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP.		0.100 TYP.	
F	2.700 REF.		0.106 REF.	
Φ	3.500 REF.		0.138 REF.	
h	0.000	0.300	0.000	0.012
h1	0.800 REF.		0.031 REF.	
h2	0.500 REF.		0.020 REF.	
L	28.000	28.400	1.102	1.118
L1	1.700	1.900	0.067	0.075
L2	1.900	2.100	0.075	0.083