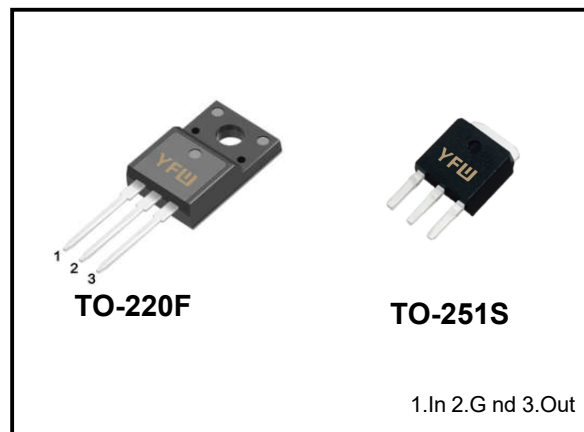


Three-terminal positive voltage regulator

FEATURES

- ◆ Output current up to 1.5A
- ◆ output voltage V_o : 12V
- ◆ Thermal overload protection
- ◆ Short circuit protection
- ◆ Output transistor SOA protection



ABSOLUTE MAXIMUM RATINGS

Operating temperature range applies unless otherwise specified

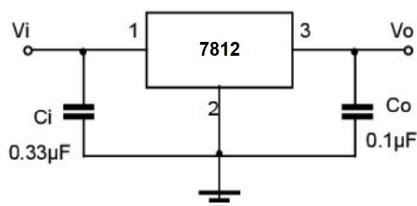
Characteristics	Symbols	Value	Units
Input Voltage	V	35	V
Operating Junction Temperature Range	T_{OPR}	-40~+125	°C
Storage Temperature Range	T_{stg}	-65~+150	°C
Power Dissipation-1(No Heatsink)	PD1	1.9	W
Power Dissipation-2(Infinite Heatsink)	PD2	30	W

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION

($V_i=10V$, $I_o=500mA$, $C_i=0.33\mu F$, $C_o=0.1\mu F$, unless otherwise specified)

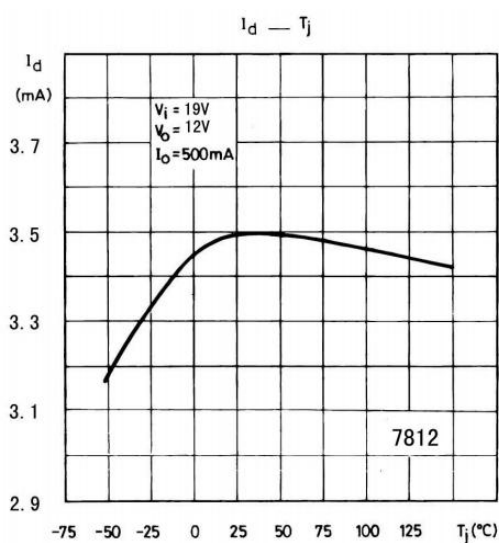
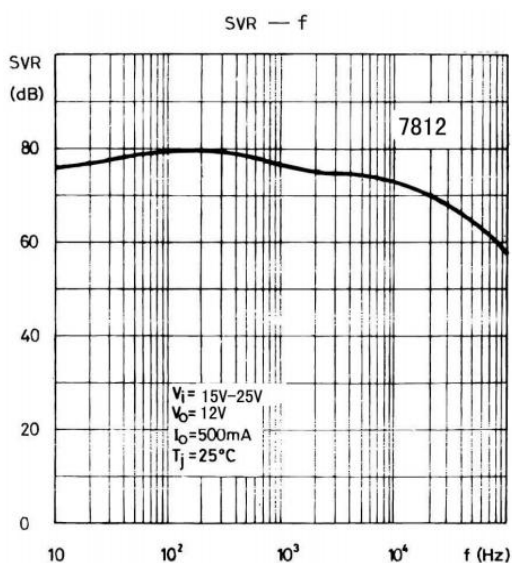
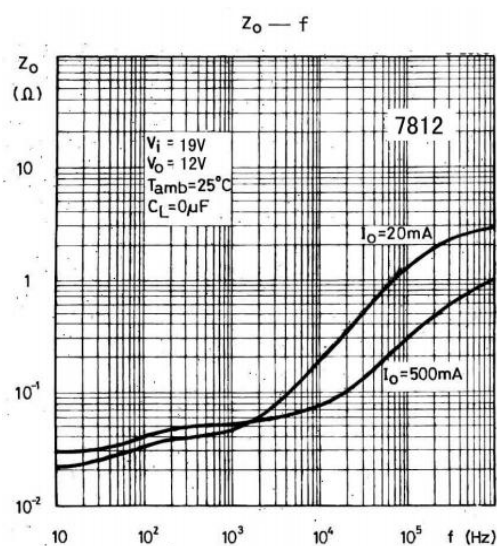
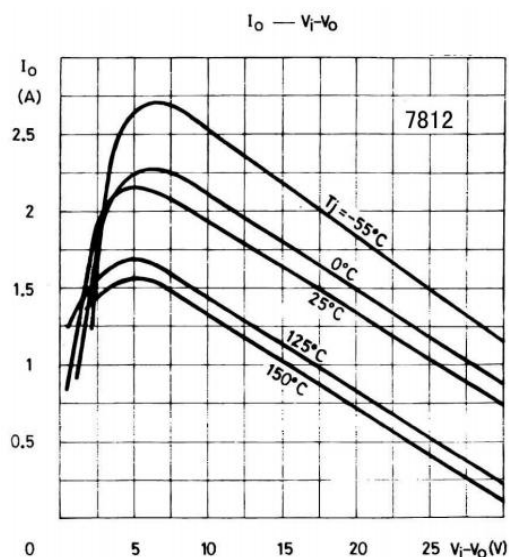
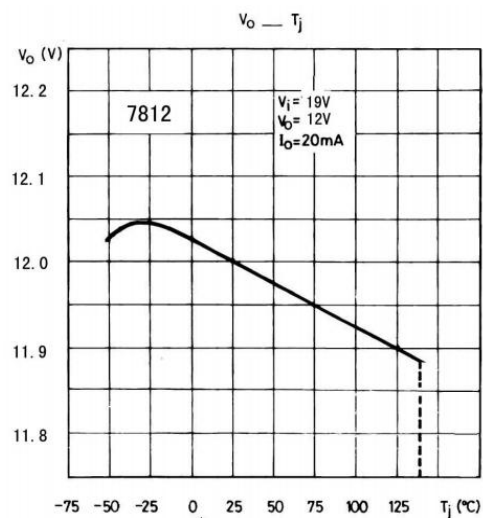
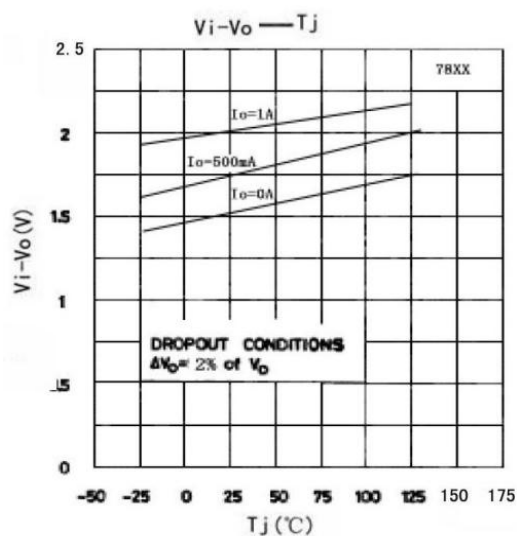
Parameter	Test conditions		Symbol	Min.	Typ.	Max.	Unit
Output Voltage		25°C	V_o	11.5	12	12.5	V
	14.5V≤ V_i ≤27V, $I_o=5mA-1A$ P_o ≤ 15W	0~125°C		11.4	12	12.6	V
Load Regulation	$I_o=5mA-1.5A$	25°C	ΔV_o	-	12	240	mV
	$I_o=250mA-750mA$	25°C		-	5	120	mV
Line Regulation	14.5V≤ V_i ≤30V, $I_o=500mA$	25°C	ΔV_o	-	10	240	mV
	16V≤ V_i ≤22V, $I_o=500mA$	25°C		-	3	120	mV
Quiescent Current		25°C	I_q	-	5.1	8	mA
Quiescent Current Change	15V≤ V_i ≤30V, $I_o=500mA$	0~125°C	ΔI_q	-	-	0.8	mA
	5mA≤ I_o ≤1A	0~125°C		-	-	0.5	mA
Output Noise Voltage	10Hz≤ f ≤100KHz	25°C	V_N	-	76	-	uV/V_o
Ripple Rejection	15V≤ V_i ≤25V, f=120Hz, $I_o=500mA$	0~125°C	RR	-	64	-	dB
Dropout Voltage	$I_o=1A$	25°C	VD	-	2	-	V
Short Circuit Current	$V_i=35V$	25°C	ISC	-	230	-	mA
Peak Current		25°C	I_{pk}	-	2.2	-	A

TYPICAL APPLICATION

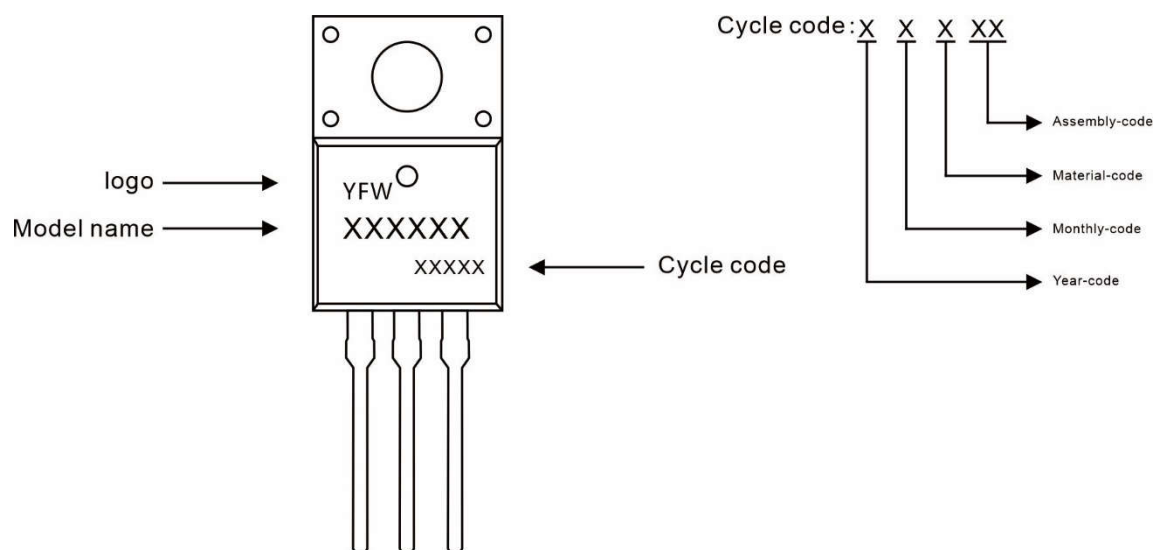


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to

RATINGS AND CHARACTERISTIC CURVES



Marking Diagram



Ordering information

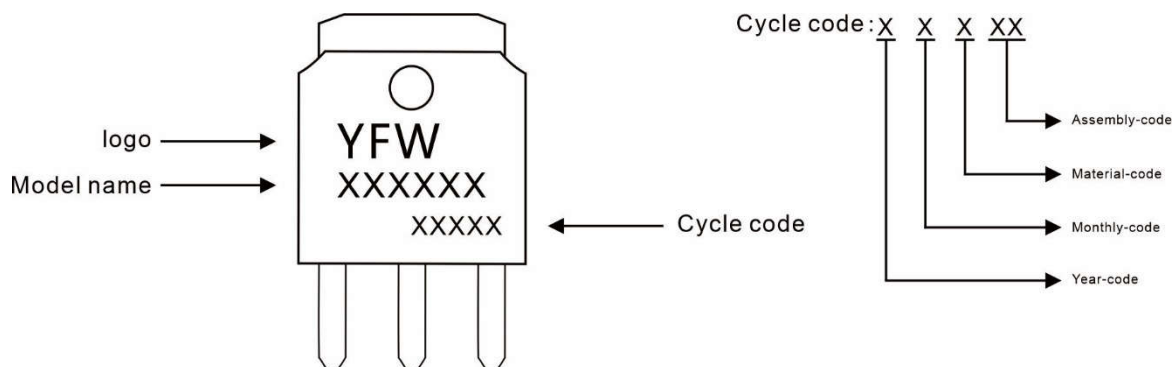
Model name	Package	Unit Weight	Base Quantity	Packing Quantity
7812AF	TO-220F	0.06oz(1.74g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220F

Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.50	4.90	0.177	0.193
A1	2.34	2.74	0.092	0.108
A2	2.66	2.86	0.105	0.113
b	0.75	0.85	0.030	0.033
b1	1.24	1.44	0.049	0.057
c	0.40	0.60	0.016	0.024
D	10.00	10.32	0.394	0.406
E	15.75	16.05	0.620	0.632
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	3.10	3.5	0.122	0.138
L	13.50	13.90	0.531	0.547
L1	2.90	3.30	0.114	0.130
Φ	3.10	3.30	0.122	0.130

Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
7812AMJ	TO-251S	0.011oz(0.32g)	80pcs/tube	4000pcs/box 24000pcs/Carton

Package Dimensions

TO-251S

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.1	2.5	0.083	0.098
A1	6.3	6.9	0.248	0.271
A2	0.9	1.1	0.035	0.043
A3	TYP0.5		TYP0.019	
b	0.6	0.8	0.024	0.031
c	0.4	0.5	0.015	0.020
D	5.3	5.5	0.209	0.217
D2	3.65	4.05	0.144	0.159
E	5.8	6.4	0.228	0.252
E2	0.9	1.4	0.035	0.055
e	TYP2.29		TYP0.090	
e1	TYP4.58		TYP0.180	
L	3.7	4.3	0.146	0.169

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