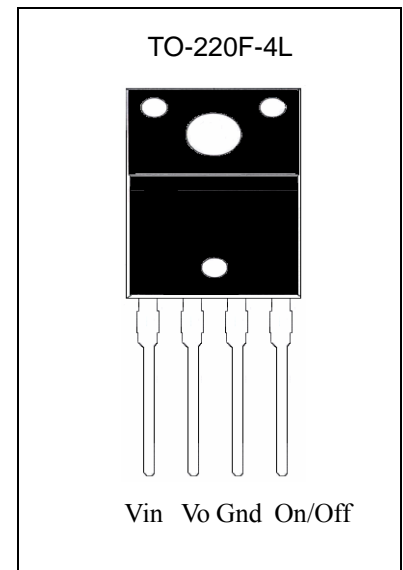


4-TERMINAL LOW DROPOUT VOLTAGE REGULATOR

LM78R12F4


Description

The LM78R12F4 is low dropout voltage regulator suitable for various electronic equipments. It provides constant voltage power source with TO-220 4 terminal lead full molded PKG. The regulator has multi function such as over current protection, overheat protection and ON/OFF control.

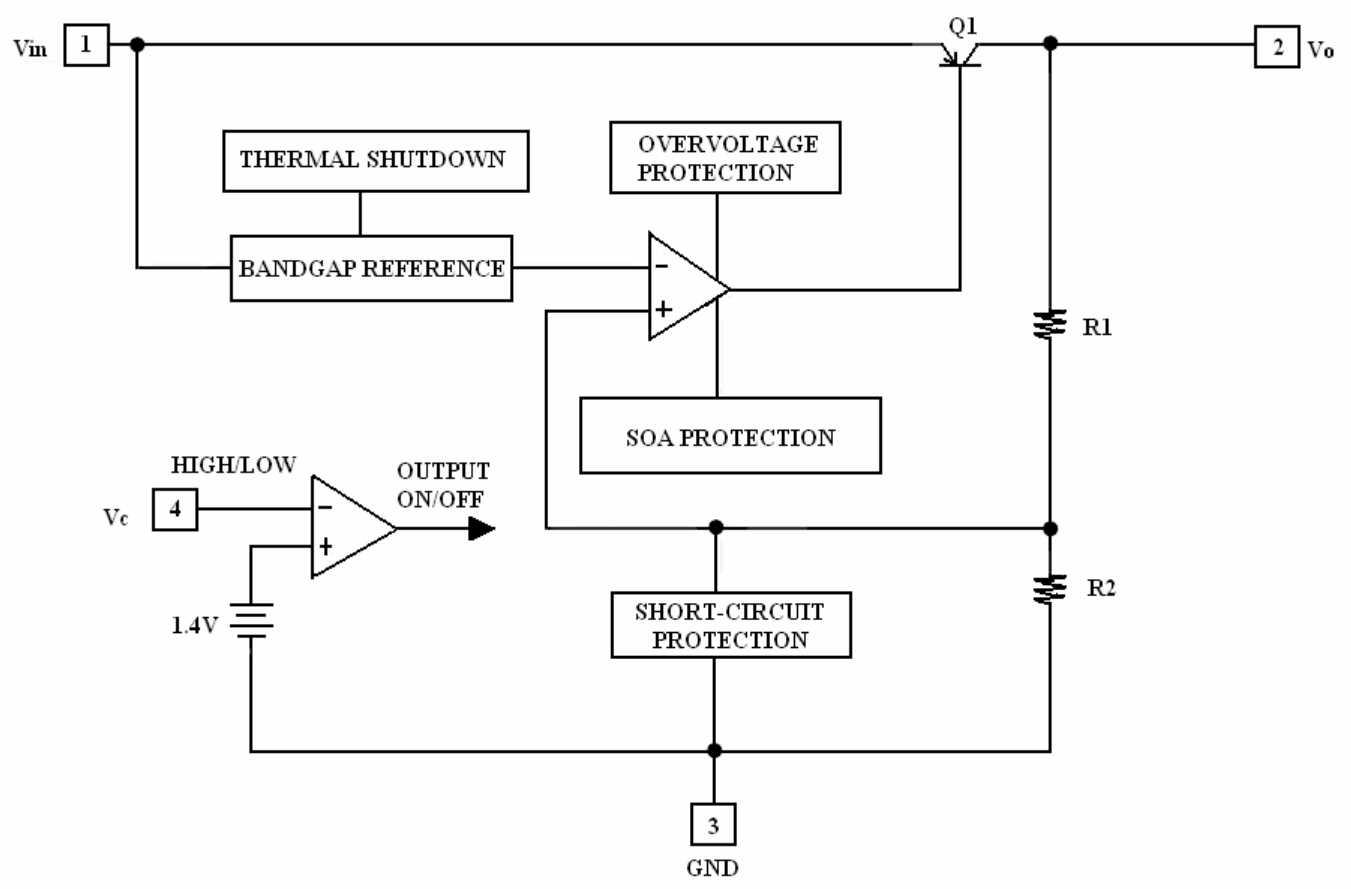
Features

- 1A output low dropout voltage regulator.
- Built-in on/off control terminal.
- Built-in over current protection, over heat protection function.
- Pb-free lead plating package

Absolute Maximum Ratings (Ta=25°C)

Symbol	Parameter	Rating	Unit	Remark
I _O	Output Current	1	A	-
V _{IN}	Input Voltage	35	V	-
V _C	On/Off Control Voltage	35	V	-
P _D	Power Dissipation 1	1.5	W	without heat sink
	Power Dissipation 2	15	W	with heat sink
T _J	Junction Temperature	150	°C	-
T _{OPR}	Operating Junction Temperature Range	-20 ~ +80	°C	-
T _{STG}	Storage Temperature	-30 ~ +125	°C	-
T _{SOL}	Soldering Temperature @ t=10sec	260	°C	-
R _{θJA}	Thermal Resistance, Junction to Air	65	°C/W	-
R _{θJC}	Thermal Resistance, Junction to Case	5	°C/W	-

Internal Blocking Diagram





Electrical Characteristics

$V_{in}=15V$, $I_o=500mA$, $T_a=25^{\circ}C$, unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
V_o	Output Voltage		11.64	12	12.36	V
$\Delta V_o(\text{line})$	Line Regulation	$13V \leq V_{IN} \leq 29V$	-	0.5	2.5	%
$\Delta V_o(\text{load})$	Load Regulation	$5mA \leq I_o \leq 1A$	-	0.5	2	%
RR	Ripple Rejection		45	55	-	dB
V_D	Dropout Voltage	$\Delta V_o=1\%V_o$	-	-	0.5	V
$V_{C(ON)}$	Output ON state for control voltage		2	-	-	V
$I_{C(ON)}$	Output ON state for control current	$V_C=2.7V$	-	-	20	μA
$V_{C(OFF)}$	Output OFF state for control voltage		-	-	0.8	V
$I_{C(OFF)}$	Output OFF state for control current	$V_C=0.4V$	-	-	-0.4	mA
I_Q	Quiescent Current	$I_o=0A$	-	3.1	10	mA

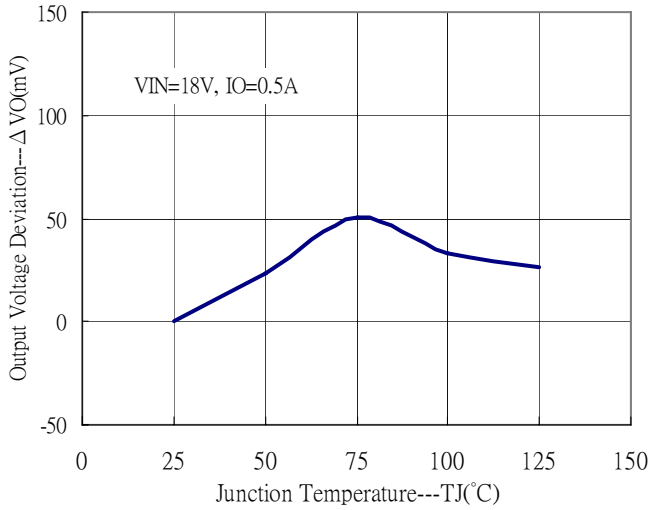
Ordering Information

Device	Package	Shipping
LM78R12F4	TO-220 (RoHS compliant package)	50pcs / tube, 80 tubes/box

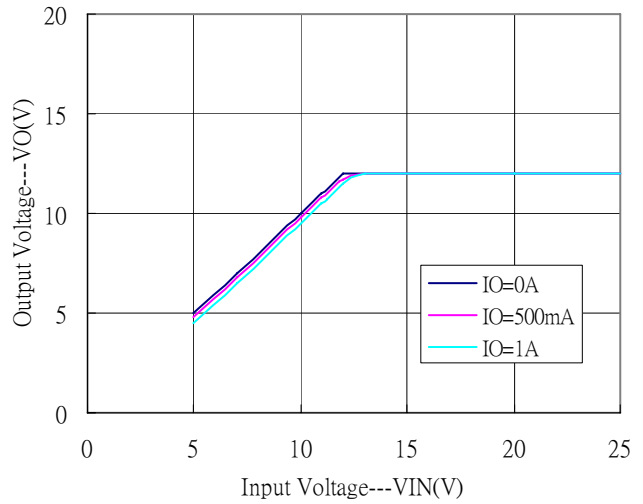


Characteristic Curves

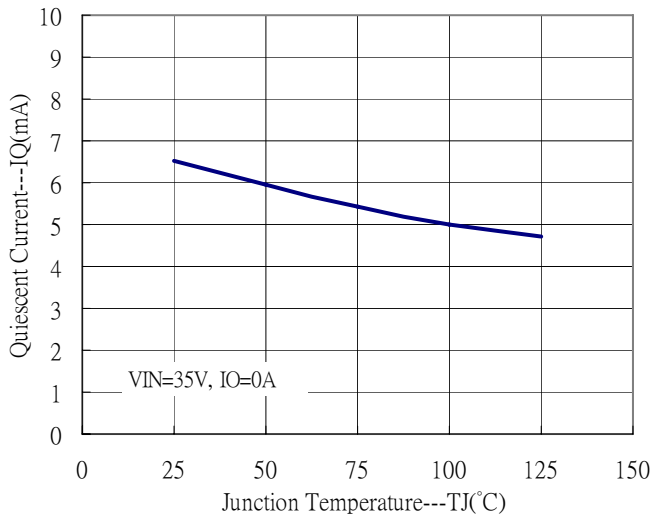
Output Voltage Deviation vs Junction Temperature



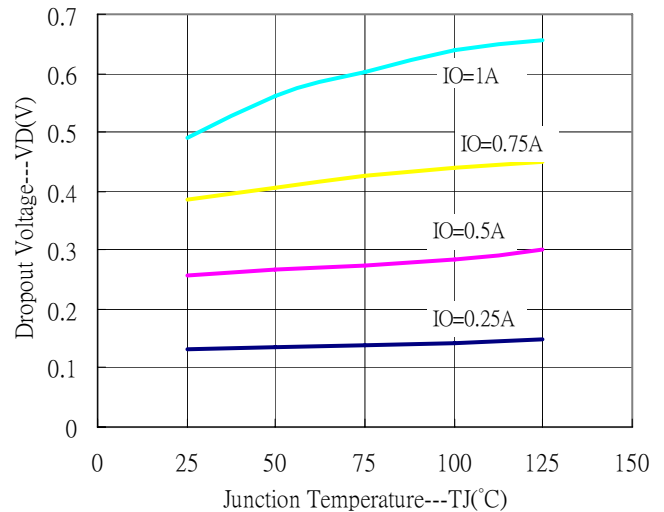
Output Voltage vs Input Voltage



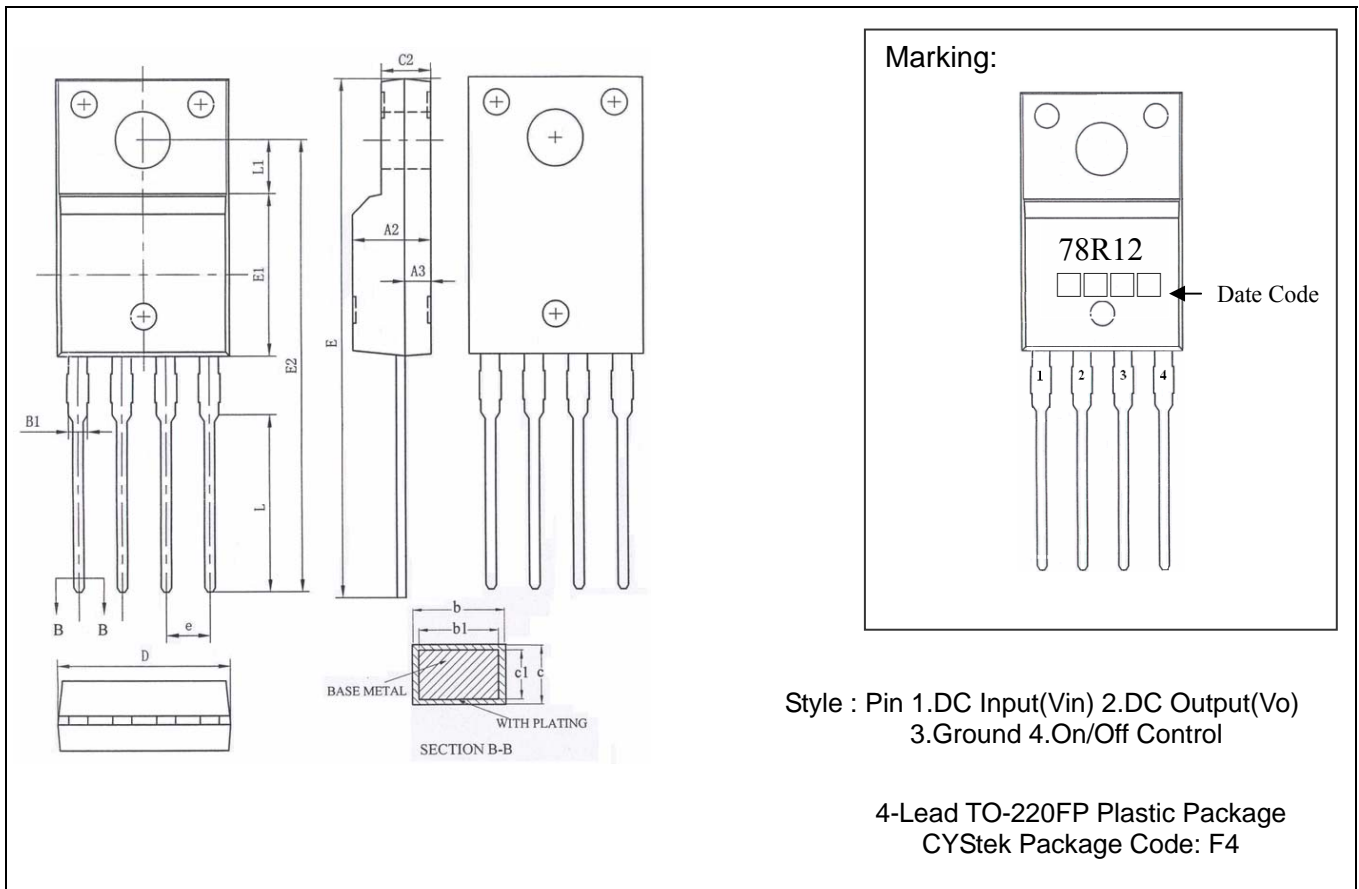
Quiescent Current vs Junction Temperature



Dropout Voltage vs Junction Temperature



TO-220F-4L Dimension



Marking:

78R12
 Date Code
 1 2 3 4

Style : Pin 1.DC Input(Vin) 2.DC Output(Vo)
 3.Ground 4.On/Off Control

4-Lead TO-220FP Plastic Package
 CYStek Package Code: F4

*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A2	4.40	4.60	0.1732	0.1811	D	9.90	10.10	0.3898	0.3976
A3	1.45	1.55	0.0571	0.0610	E	29.15	29.55	1.1476	1.1634
b	0.58	0.68	0.0228	0.0268	E1	9.10	9.30	0.3583	0.3661
b1	0.57	0.63	0.0224	0.0248	E2	25.70	26.10	1.0118	1.0276
c	0.49	0.58	0.0193	0.0228	L	10.30	10.50	0.4055	0.4134
c1	0.47	0.53	0.0185	0.0209	L1	3.05 REF		0.1201 REF	
c2	2.75	2.85	0.1083	0.1122	e	2.54 BSC		0.1000 BSC	
B1	1.10 BSC		0.0433 BSC						

Notes: 1.Controlling dimension: millimeters.
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.

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