

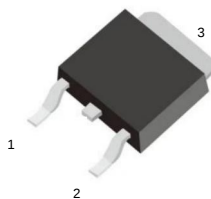
Description

The MC7812BDTRKG three-terminal positive regulators are available in the TO-252 package with several fixed output voltages making it useful in a wide range of applications.

Features

Output Current up to 1A
Output Voltages of 12V
Thermal Overload Protection Short Circuit Protection
Output Transistor Safe Operating area (SOA)Protection

78M12



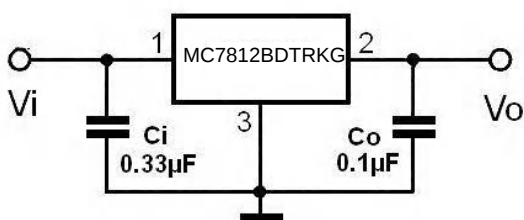
TO-252 top view

- 1.IN
- 2.VOUT
- 3.GND

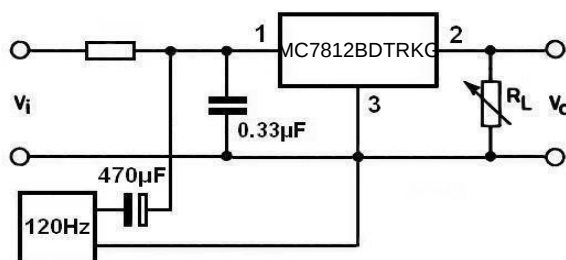
Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	35	V
Thermal Resistance Junction-Case	$R_{\theta JC}$	2.5	°C/W
Thermal Resistance Junction-Air ($T_a = +25^{\circ}\text{C}$)	$R_{\theta JA}$	92	°C/W
Operating Junction Temperature Range	T_{OPR}	0 ~ 150	°C
Storage Temperature Range	T_{STG}	-55 ~ + 150	°C

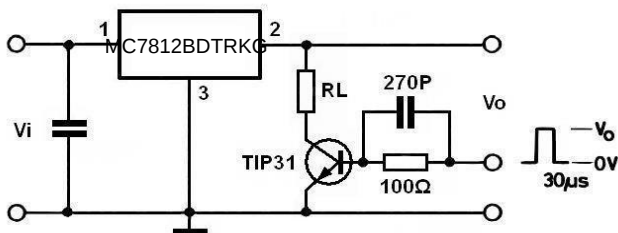
TYPICAL APPLICATION



DC Parameter



Ripple Rejection



Load Regulation

Electrical Characteristics

(Refer to the test circuits, $0 < T_J < +125^{\circ}\text{C}$, $I_O=500\text{mA}$, $V_I=19\text{V}$, $C_I = 0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$ unless otherwise specified,)

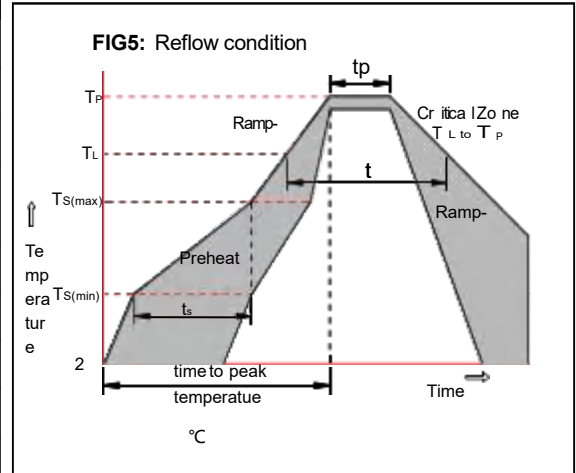
Parameter	Symbol	Conditions		Value			Unit
				Min	Typ	Max	
Output Voltage	V_O	$I_O = 5\text{mA} \sim 1\text{A}$, $V_I = 14.5 \sim 27\text{V}$		11.4	12	12.6	V
Line Regulation(Note)	ΔV_O	$T_J = 25^{\circ}\text{C}$	$V_I = 14.5\text{V} \sim 30\text{V}$			240	mV
			$V_I = 16\text{V} \sim 22\text{V}$			120	
Load Regulation(Note)	ΔV_O	$T_J = 25^{\circ}\text{C}$	$I_O = 5\text{mA} \sim 1.2\text{A}$			240	mV
			$I_O = 250\text{mA} \sim 750\text{mA}$			120	
Quiescent Current	I_Q	$T_J = 25^{\circ}\text{C}$				8.0	mA
Quiescent Current Change	ΔI_Q	$I_O=5\text{mA} \sim 1\text{A}$				0.5	mA
		$V_I = 14.5 \sim 30\text{V}$				1.0	
Output Voltage Drift	$\Delta V / \Delta T$	$I_O = 5\text{mA}$			-1.0		mV/ $^{\circ}\text{C}$
Output Noise Voltage	V_N	$f = 10\text{Hz} \sim 100\text{KHz}$			76		μV
Ripple Rejection	RR	$f = 120\text{Hz}$, $V_I = 15 \sim 25\text{V}$		55			dB
Dropout Voltage	V_D	$I_O = 1\text{A}$, $T_J = 25^{\circ}\text{C}$			2		V
Short Circuit Current	I_{SC}	$V_I = 35\text{V}$, $T_A = 25^{\circ}\text{C}$			230		mA
Peak Current	I_{PK}	$T_J = 25^{\circ}\text{C}$			1.5		A

Notes:

Load and line regulation are specified at constant junction temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty is used.

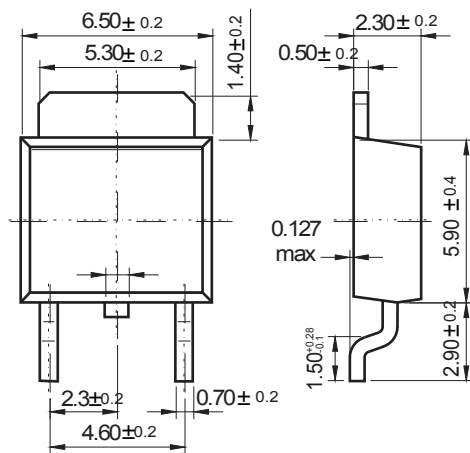
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max($T_{s(max)}$)	+200 °C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3 °C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 °C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217 °C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5) °C
Time within 5 °C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6 °C/sec. Max
Time 25 °C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 °C

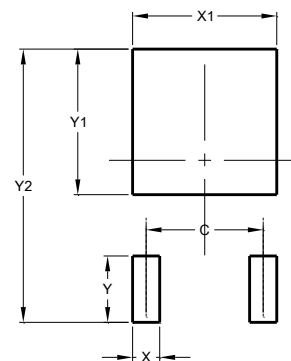


Package Dimensions & Suggested Pad Layout

TO-252

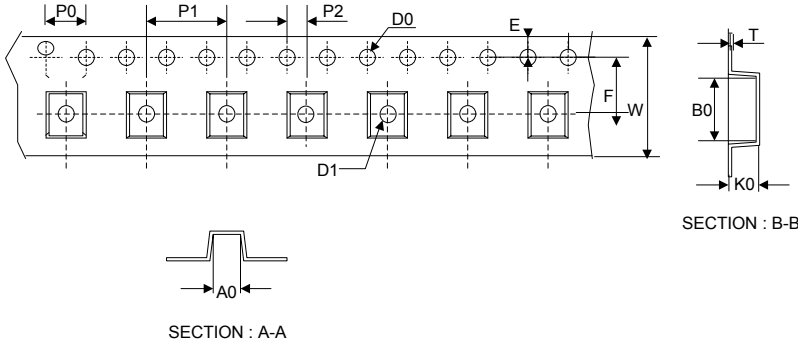
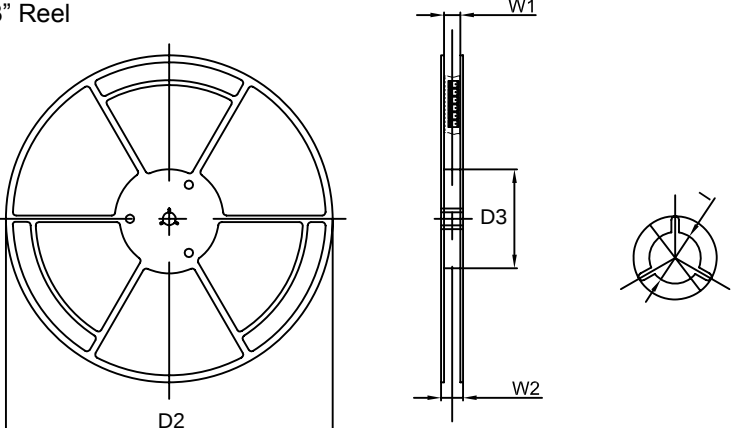


Dimensions in inches and (millimeters)



Dimensions	Value (in mm)
C	4.55
X	1.50
X1	5.80
Y	2.70
Y1	6.00
Y2	10.90

Tape & reel specification

Tape		Symbol	Dimension (mm)
 SECTION : A-A SECTION : B-B		P0	4.00±0.20
		P1	8.00±0.20
		P2	2.00±0.20
		D0	1.55±0.15
		D1	1.55±0.20
		E	1.75±0.20
		F	7.50±0.20
		W	16.00±0.20
		A0	7.10±0.20
		B0	10.50±0.20
		K0	2.70±0.20
		T	0.30±0.10
		D2	330.0±5.0
		D3	100.0±4.0
		W1	20.0±5.0
13" Reel		W2	25.0±5.0
		I	13.0±2.0
		Quantity: 2500PCS	