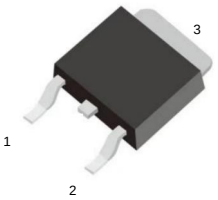
Description

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.

78M12



TO-252 top view

1.IN
2.VOUT
3.GND

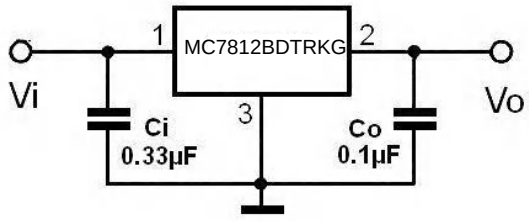
Features

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

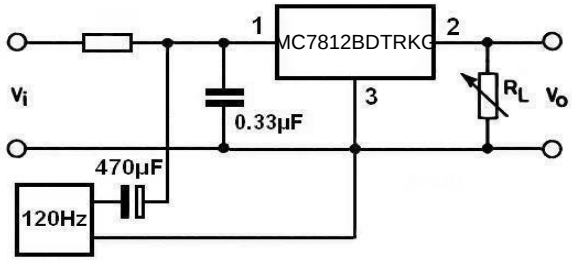
Absolute Maximum Ratings

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 (Ta = +25°C)	$R_{\theta JA}$	92	°C/W
Operating Junction Temperature Range	T_{OPR}	0 ~ 150	°C
Storage Temperature Range	T_{STG}	-55 ~ + 150	°C

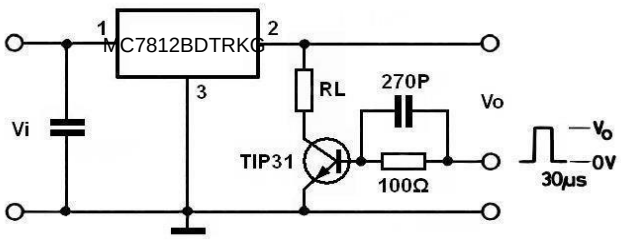
TYPICAL APPLICATION



DC Parameter



Ripple Rejection



Load Regulation

Electrical Characteristics

(Refer to the test circuits, $0 < T_J < +125°C$, I_O=500mA, V_I=19V, C_I = 0.33μF, C_O=0.1μF unless otherwise specified,)

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

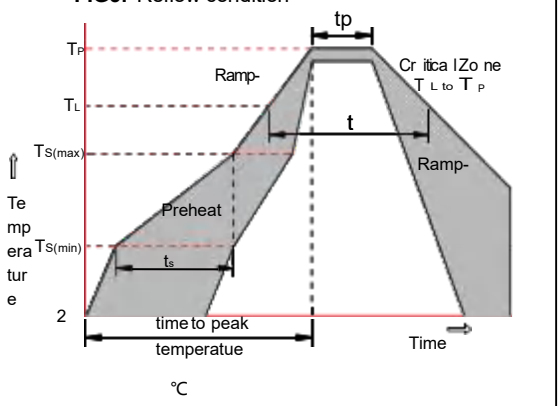
Notes:

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

Soldering parameters

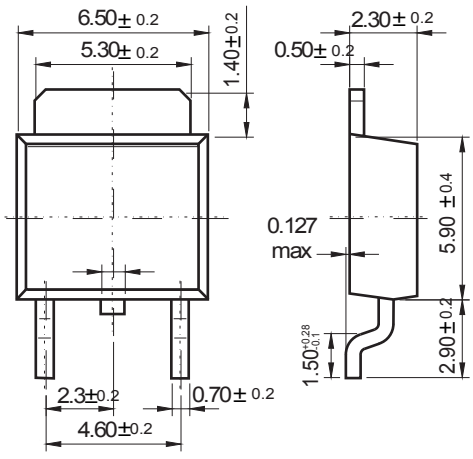
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid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

FIG5: Reflow condition

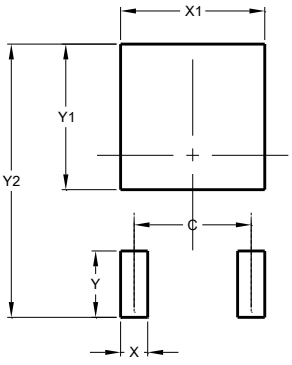


Package Dimensions & Suggested Pad Layout

TO-252



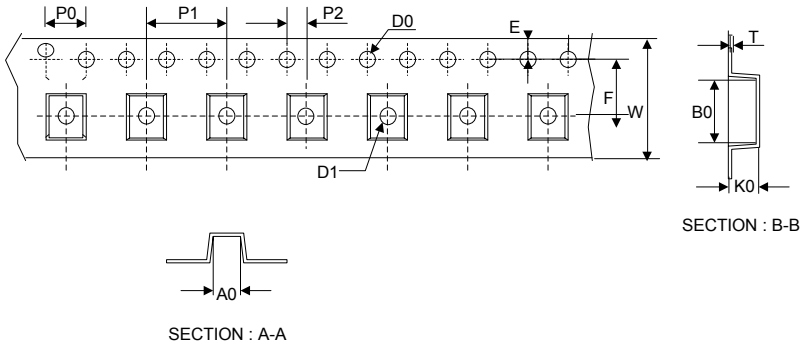
Dimensions in inches and (millimeters)



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

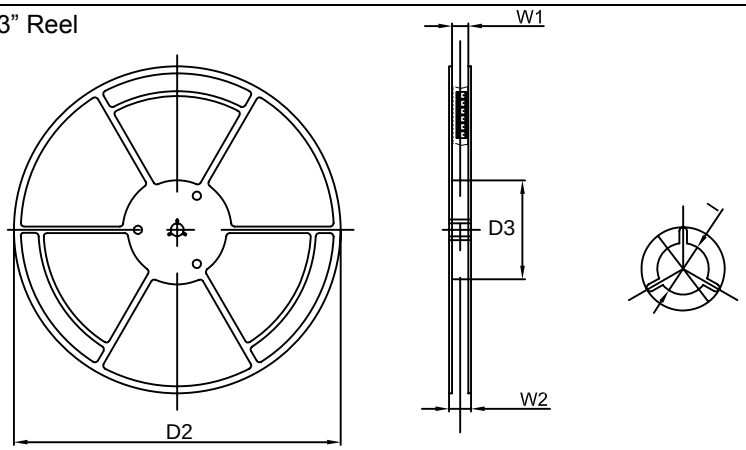
Tape & rell specification

Tape



Symbol	Dimension (mm)
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

13” Reel



D2	330.0±5.0
D3	100.0±4.0
W1	20.0±5.0
W2	25.0±5.0
I	13.0±2.0

Quantity: 2500PCS

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