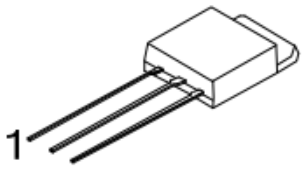
Features

- Output Current of 0.5A
- Output transistor safe area protection
- No external components
- Package：TO252, TO251

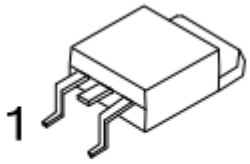
General Description

TX78MXX is three-terminal positive regulators. One of these regulators can deliver up to 0.5A of output current. When used as a replacement for a Zener diode-resistor Combination, an effective improvement in output impedance can be obtained, together with lower quiescent current.

Pin Configuration



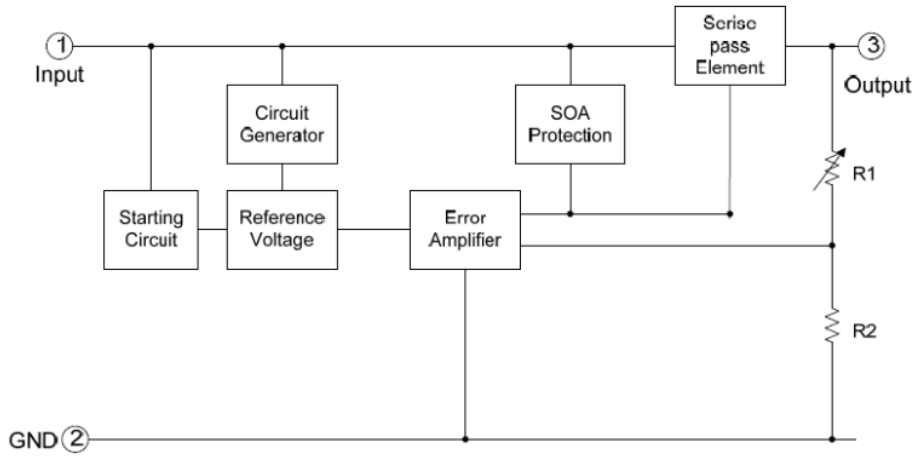
TO-251



TO-252

TO251	TO252	PIN NAME	FUNCTION
1	1	VIN	Input voltage pin
2	2	GND	Ground pin
3	3	VOUT	Output voltage pin

Block Diagram



Absolute Maximum Ratings（Ta=25℃）

Parameter	Rating	Unit
Input supply voltage: VIN	40	V
MAX. Output current:Iout	500	mA
MAX Power:Pmax	1	W
Maximum junction temperature:Tj	-25~125	℃
Storage temperature:Tstr	-55~125	℃
Soldering temperature and time	+260(Recommended 10S)	℃

Note: The absolute maximum ratings are rated values exceeding which the product could suffer physical damage. These values must therefore not be exceeded under any conditions.

Electrical Characteristics

(Cin=0.33uF, Co=0.1uF, 0≤Tj≤125℃， unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input Voltage	VIN	-	-	35	-	V
Output Voltage	Vout	Io=40mA, VIN=10V	0.964vout	VOUT	1.036vout	V
		Io=1mA~40mA VIN=7V~18V	0.96vout	VOUT	1.04vout	
		Io=10mA VIN=10V	0.95vout	VOUT	1.05vout	
Line Regulation	LNR	VIN=7V~18V, Io=40mA	-150	-	150	mV
		VIN=8V~18V, Io=40mA	-100	-	100	
Load Regulation	LDR	VIN=10V, Io=1mA~100mA	-60	-	60	mV
		VIN=10V, Io=1mA~40mA	-30	-	30	
Output Current	Iout	VIN=7.0V,VOUT=5.0v	-	500	-	mA
Dropout Voltage	V_{DIF}	Tj=25℃， Io=500mA	-	1.7	-	V
Quiescent Current	I_Q	VIN=10V	-	1.5	--	mA
Quiescent Current Change	$\triangle I_Q$	VIN=8V~18V, I_O=40mA	-1.5	-	1.5	mA
		VIN=10V, IOUT=1mA~40mA,	-0.1	-	0.1	

LNR: Line Regulation. The change in output voltage for a change in the input voltage. The measurement is made under conditions of low dissipation or by using pulse techniques such that the average chip temperature is not significantly affected.

LDR: Load Regulation.The change in output voltage for a change in load current at constant chip temperature.

Typical Application

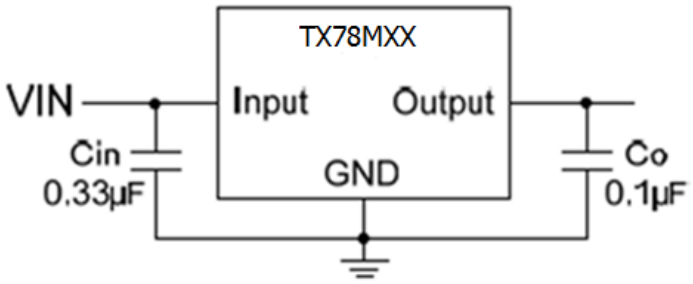
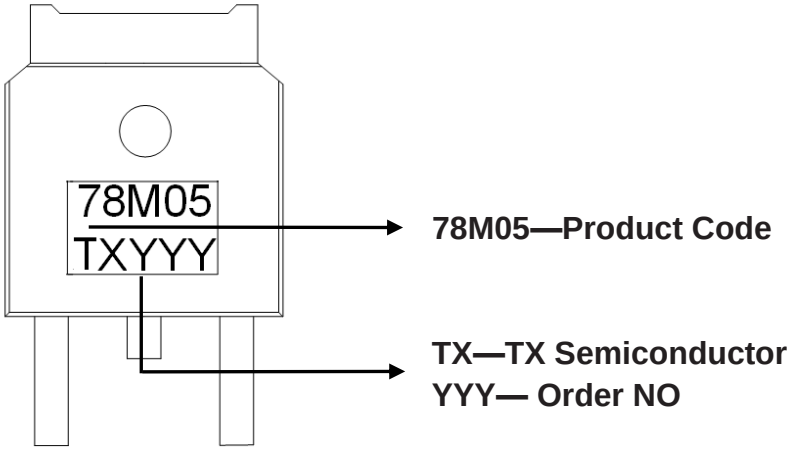


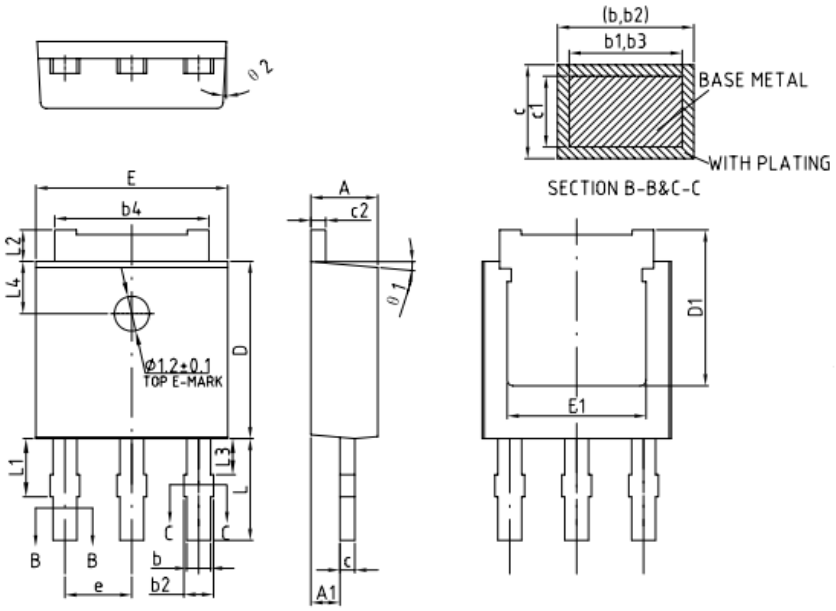
Fig.1 Fixed Output Regulator

Marking Rule



Package Information

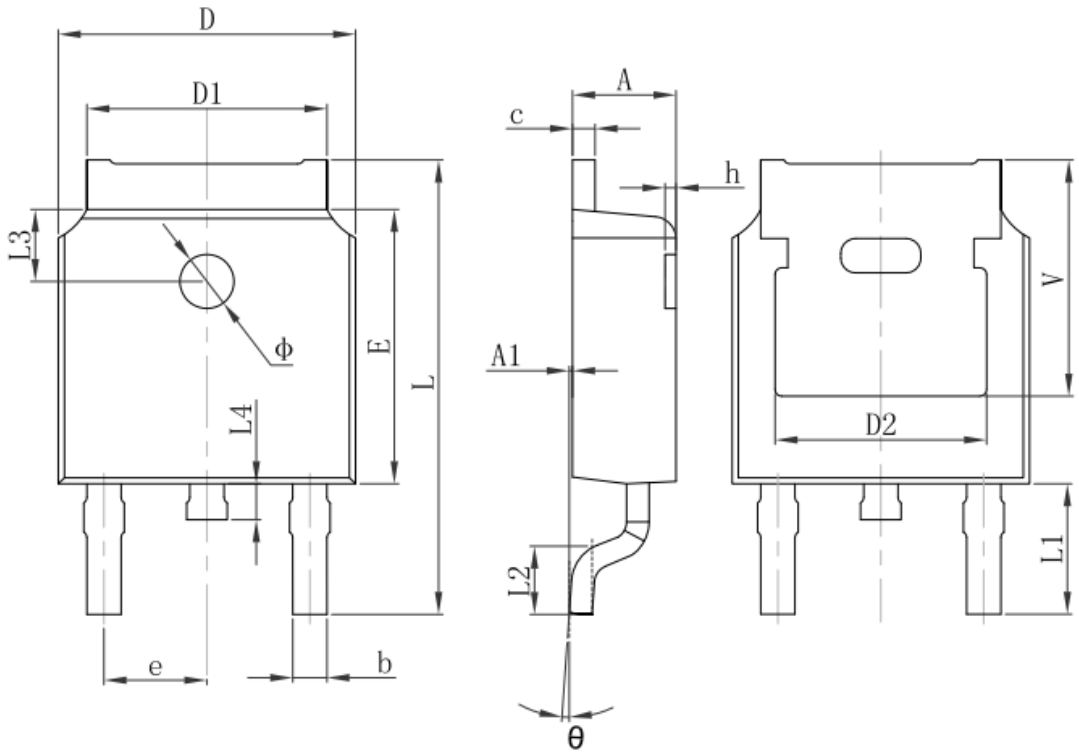
TO251 PACKAGE OUTLINE DIMENSIONS



COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	2.20	2.30	2.38
A1	0.90	1.00	1.10
b	0.77	–	0.89
b1	0.76	0.81	0.86
b2	0.77	–	1.10
b3	0.77	–	1.10
b4	5.23	5.33	5.43
c	0.47	–	0.60
c1	0.46	0.51	0.56
c2	0.47	–	0.60
D	6.00	6.10	6.20
D1	5.25	–	–
E	6.50	6.60	6.70
E1	4.70	–	–
e		2.28BSC	
L	3.40	3.50	3.60
L1	1.90	2.00	2.10
L2	0.90	–	1.25
L3	1.15	–	1.50
L4		1.80REF	
θ 1	3°	5°	7°
θ 2	1°	3°	5°

TO-252-2L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	