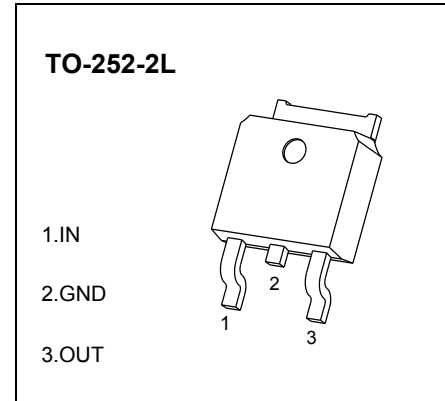


VC78M15 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
 $I_{OM}: 0.5\text{ A}$
- Output voltage
 $V_O: 15\text{ V}$
- Continuous total dissipation
 $P_D: 1.25\text{ W}(T_a=25\text{ }^\circ\text{C})$



ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

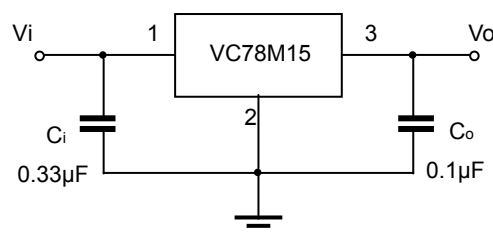
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	80	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_{OPR}	-25~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($V_i=23\text{V}, I_o=350\text{mA}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output Voltage	V_o	$V_i=23\text{V}, I_o=350\text{mA}$	25 $^\circ\text{C}$	14.4	15	15.6	V
		$17.5\text{V}\leq V_i\leq 30\text{V}, I_o=5\text{mA}\sim 350\text{mA}$	-25-125 $^\circ\text{C}$	14.25	15	15.75	V
Load Regulation	ΔV_o	$I_o=5\text{mA}\sim 500\text{mA}$	25 $^\circ\text{C}$			300	mV
		$I_o=5\text{mA}\sim 200\text{mA}$	25 $^\circ\text{C}$			150	mV
Line Regulation	ΔV_o	$17.5\text{V}\leq V_i\leq 30\text{V}, I_o=200\text{mA}$	25 $^\circ\text{C}$			100	mV
		$20\text{V}\leq V_i\leq 26\text{V}, I_o=200\text{mA}$	25 $^\circ\text{C}$			50	mV
Quiescent Current	I_q	$V_i=23\text{V}, I_o=350\text{mA}$	25 $^\circ\text{C}$		6	mA	
Quiescent Current Change	ΔI_q	$17.5\text{V}\leq V_i\leq 30\text{V}, I_o=200\text{mA}$	-25-125 $^\circ\text{C}$			0.8	mA
	ΔI_q	$V_i=23\text{V}, I_o=5\text{mA}\sim 350\text{mA}$	-25-125 $^\circ\text{C}$			0.5	mA
Output Noise Voltage	V_N	$10\text{Hz}\leq f\leq 100\text{KHz}$	25 $^\circ\text{C}$	90		$\mu\text{V}/V_o$	
Ripple Rejection	RR	$18.5\text{V}\leq V_i\leq 28.5\text{V}, f=120\text{Hz}, I_o=300\text{mA}$	-25-125 $^\circ\text{C}$	54		dB	
Dropout Voltage	V_d		25 $^\circ\text{C}$	2		V	

* Pulse test.

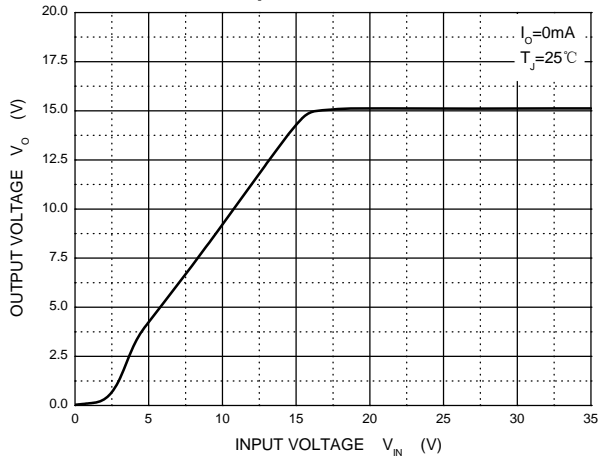
TYPICAL APPLICATION



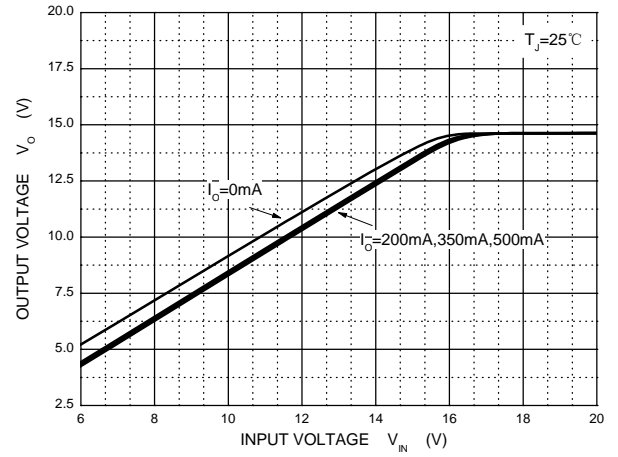
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

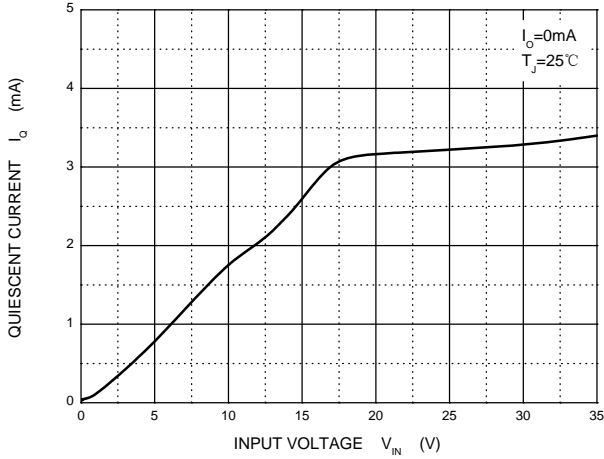
Output Characteristics



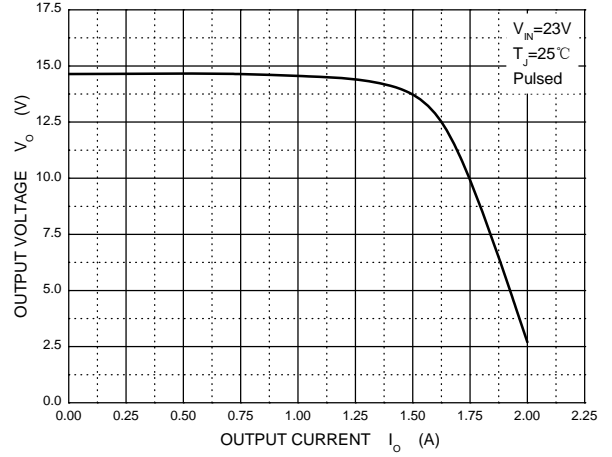
Dropout Characteristics



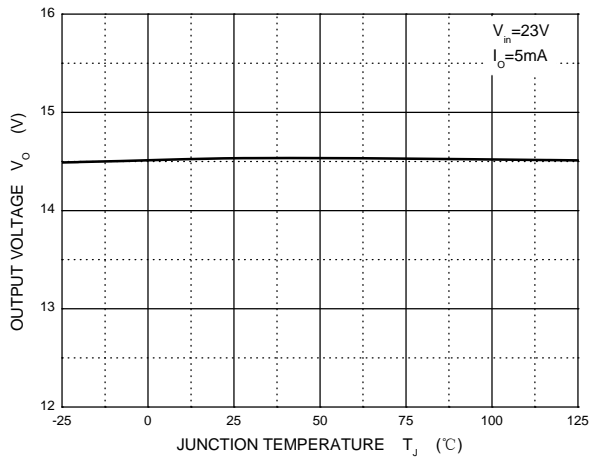
Quiescent Current vs Input Voltage



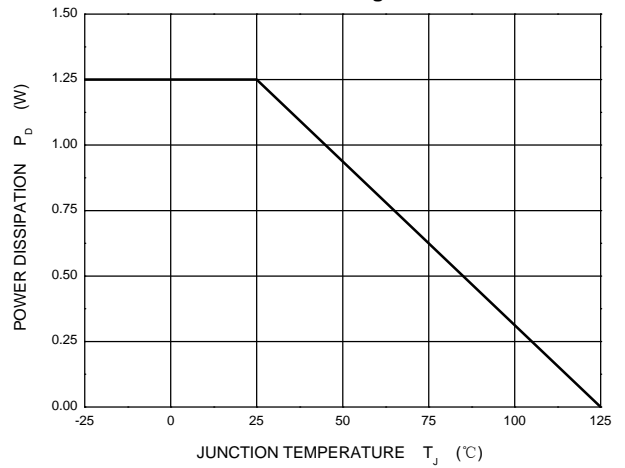
Current Cut-off Grid Voltage



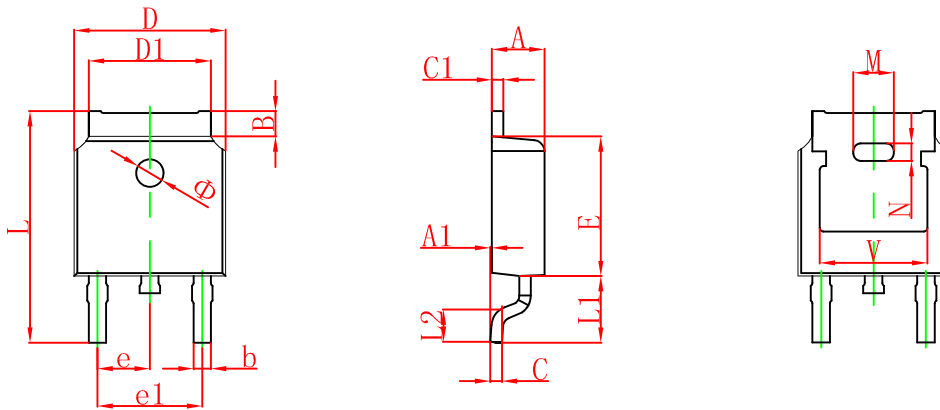
Output Voltage vs Junction Temperature



Power Derating Curve

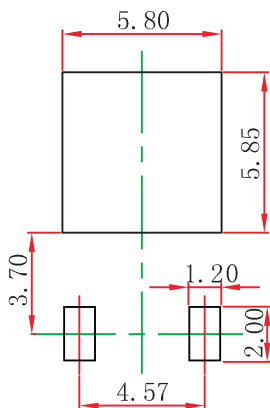


TO-252(4R)-2L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
B	0.800	1.400	0.031	0.055
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
c1	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
E	6.000	6.200	0.236	0.244
e	2.286 TYP.		0.090 TYP.	
e1	4.327	4.727	0.170	0.186
M	1.778REF.		0.070REF.	
N	0.762REF.		0.018REF.	
L	9.800	10.400	0.386	0.409
L1	2.9REF.		0.114REF.	
L2	1.400	1.700	0.055	0.067
V	4.830 REF.		0.190 REF.	
Φ	1.100	1.300	0.043	0.051

TO-252(4R)-2L Suggested Pad Layout

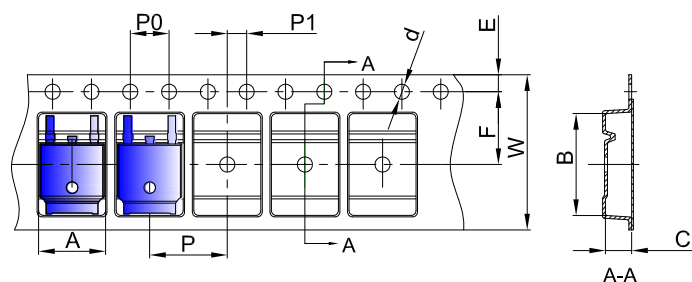


Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

TO-252(4R)-2L Tape and Reel

TO-252 Embossed Carrier Tape



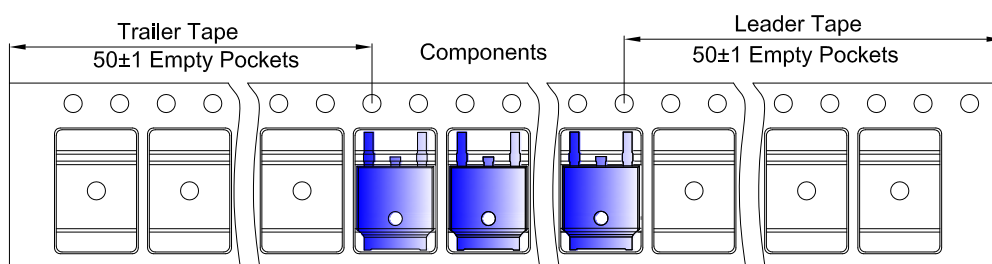
Packaging Description:

TO-252 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 25,00 units per 13" or 33.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

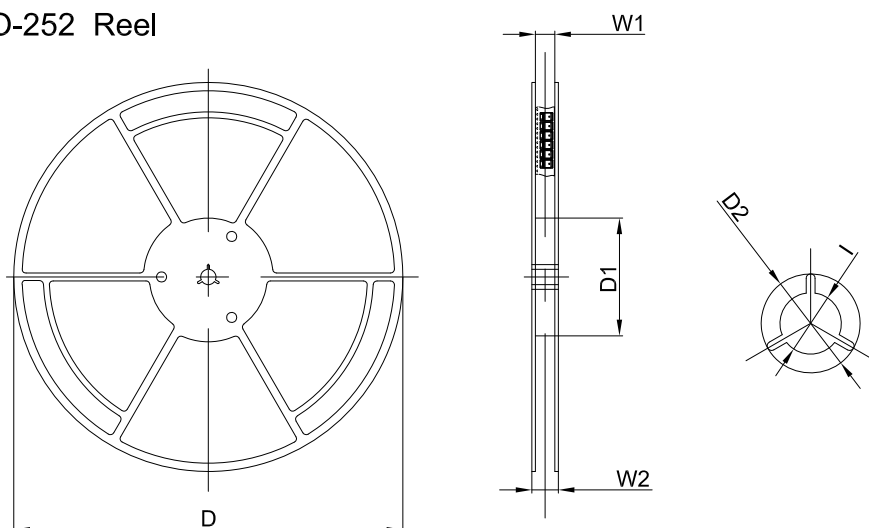
Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
TO-252	6.90	10.50	2.70	Ø1.55	1.75	7.50	4.00	8.00	2.00	16.00

TO-252 Tape Leader and Trailer



TO-252 Reel



Dimensions are in millimeter

Reel Option	D	D1	D2	W1	W2	I
13"Dia	330.00	100.00	Ø21.00	16.40	21.00	Ø13.00

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
2,500 pcs	13inch	2,500 pcs	340×336×29	25,000 pcs	353×346×365	