Features

- Available Output Voltage:12V
- Maximum Input Voltage: 35V
- Maximum Output Current:
  Exceed 500mA at T_J = 25°C
- Output Tolerances:
  ±3% at T_J = 25°C
  ±5% over the Operating T_J
- No External Components

Applications

- Motor Drives
- On-Card Regulation
- Portable Devices
- Telecommunications
- TVs and Set-top Boxes

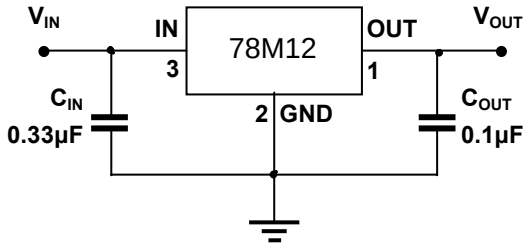
- 1: IN
- 2: GND
- 3: OUT

TO-252-2L
(DPAK)

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
78M12	TO-252-2L (DPAK)	78M12	2500

Typical Application Circuit



Conventional Circuit

Absolute Maximum Ratings

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Maximum input voltage	V_{IN}	35	V
Maximum junction temperature	$T_{J\ Max}$	150	°C
Storage temperature	T_{stg}	- 65 ~ 150	°C
Soldering temperature & time	T_{solder}	260°C, 10s	-

Electrical Characteristics

78M12 (V_{IN} = 19V, I_{OUT} = 350mA, C_{IN} = 0.33μF, C_{OUT} = 0.1μF, T_J = 25°C, unless otherwise specified)

CHARACTERISTIC	SYMBOL	TEST CONDITIONS(1)	MIN.	TYP.(2)	MAX.	UNIT
Output voltage(3)	V_{OUT}	-	11.64	12.00	12.36	V
		V_{IN} = 14.5 to 27V, I_{OUT} = 5 to 350mA	11.40	12.00	12.60	
Line regulation	LNR	V_{IN} = 14.5 to 30V, I_{OUT} = 200mA	-	10	100	mV
		V_{IN} = 16 to 30V, I_{OUT} = 200mA	-	3.0	50	
Load regulation	LDR	I_{OUT} = 5 to 500mA	-	25	240	mV
		I_{OUT} = 5 to 200mA	-	10	120	
Quiescent current	I_Q	-	-	4.6	6.0	mA
Quiescent current change	ΔI_Q	V_{IN} = 14.5 to 30V, I_{OUT} = 200mA	-	-	0.8	mA
		I_{OUT} = 5 to 350mA	-	-	0.5	
Output noise voltage	V_N	f = 10 to 100kHz	-	75	-	μV
Ripple rejection	RR	V_{IN} = 15 to 25V, I_{OUT} = 300mA, f = 120Hz	55	80	-	dB
Dropout voltage(4)	V_D	I_{OUT} = 350mA	-	2.0	-	V
Short circuit current	I_{SC}	V_{IN} = 19V, OUT short to GND	-	240	-	mA
Peak current	I_{Peak}	-	-	0.7	-	A

Note:

(1) Pulse test technology is used to make T_J as close to T_A as possible. Thermal effects must be considered separately.

(2)Typical numbers are at 25°C (T_J) and represent the most likely norm.

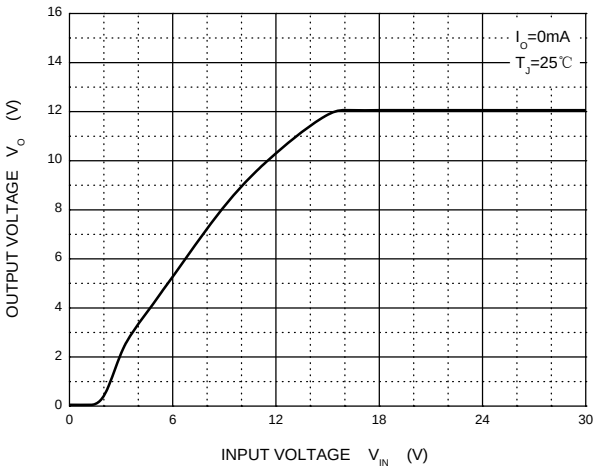
()This specification only applies to the DC power consumption allowed by the absolute maximum rating.

()) The difference of output voltage and input voltage when input voltage is decreased gradually till output voltage equals to 95% of V_{OUT}.

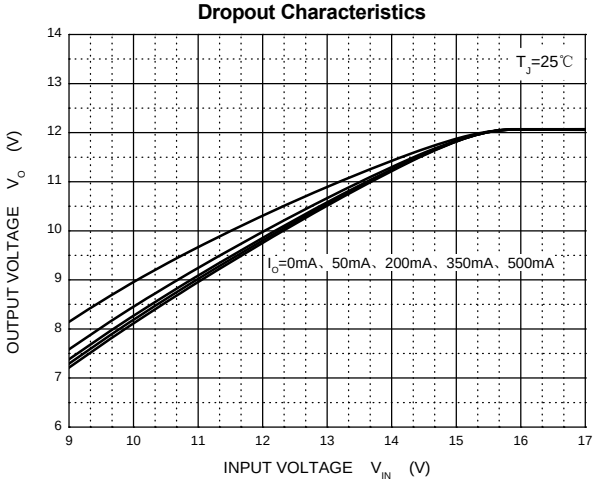
Typical Characteristics

(C_{IN} = 0.33μF, C_{OUT} = 0.1μF, T_J = 25°C, unless otherwise specified)

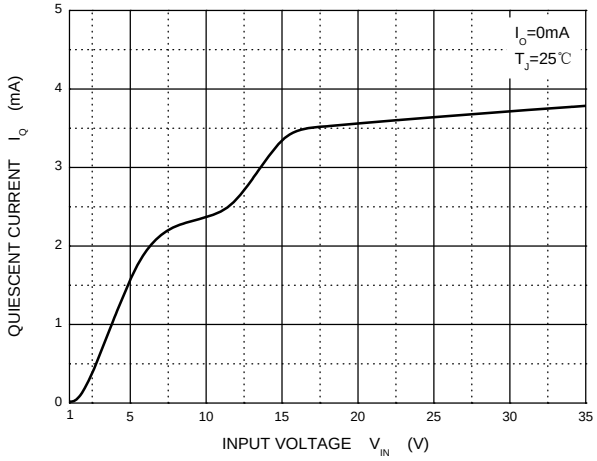
Output Characteristics



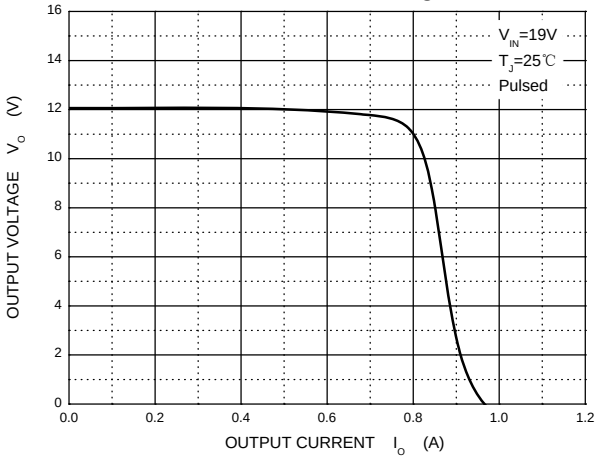
Dropout Characteristics



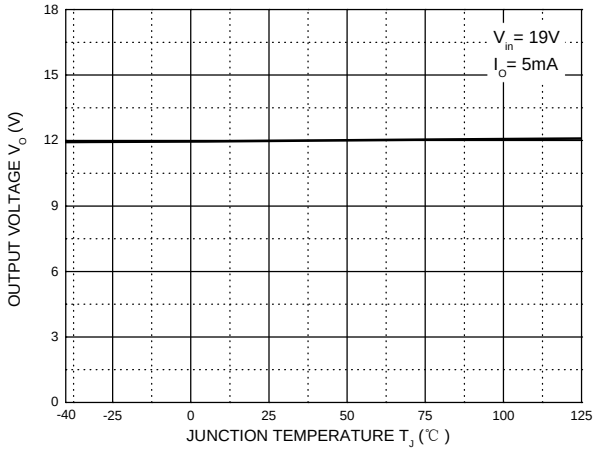
Quiescent Current vs Input Voltage



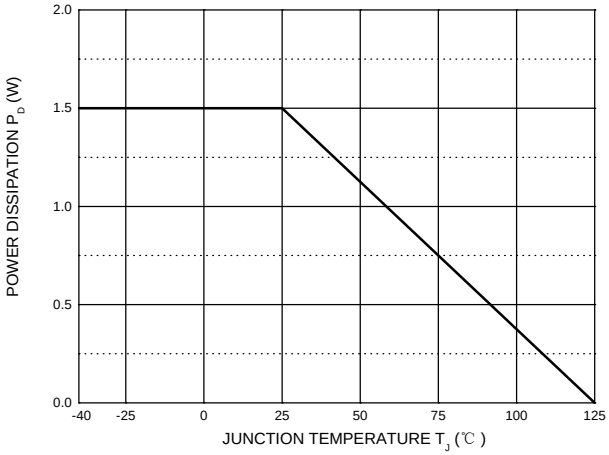
Current Cut-off Grid Voltage



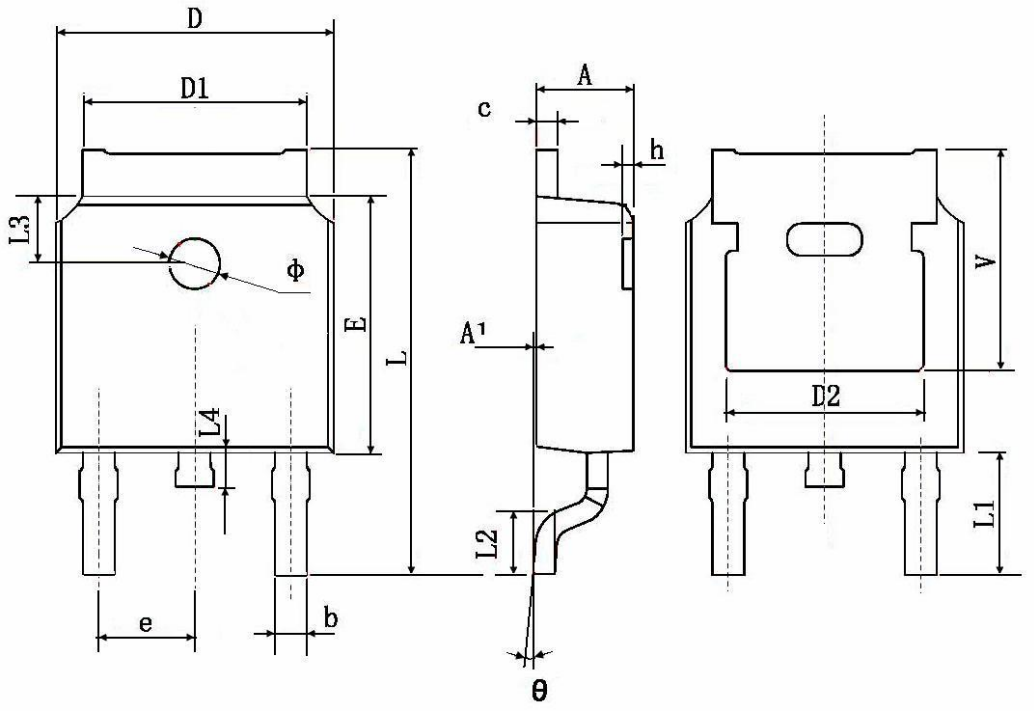
Output Voltage vs Junction Temperature



Power Derating Curve



TO-252-2L(DPAK) Package Information



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	0.483 TYP.		0.190 TYP.	
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 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
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 TYP.		0.211 TYP.	

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