

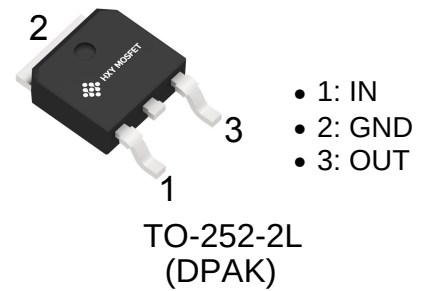


Features

- Available Output Voltage:12V
- Maximum Input Voltage: 35V
- Maximum Output Current:
Exceed 500mA at $T_J = 25^{\circ}\text{C}$
- Output Tolerances:
 $\pm 3\%$ at $T_J = 25^{\circ}\text{C}$
 $\pm 5\%$ over the Operating T_J
- No External Components

Applications

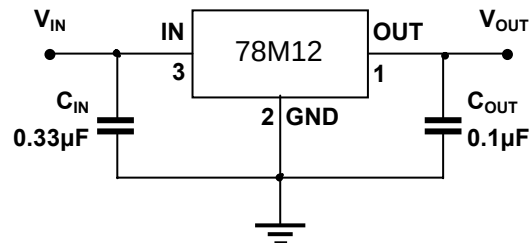
- Motor Drives
- On-Card Regulation
- Portable Devices
- Telecommunications
- TVs and Set-top Boxes



Package Marking and Ordering Information

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

Typical Application 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 ($V_{IN} = 19V$, $I_{OUT} = 350mA$, $C_{IN} = 0.33\mu F$, $C_{OUT} = 0.1\mu F$, $T_J = 25^\circ C$, 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 $25^\circ C$ (T_J) and represent the most likely norm.

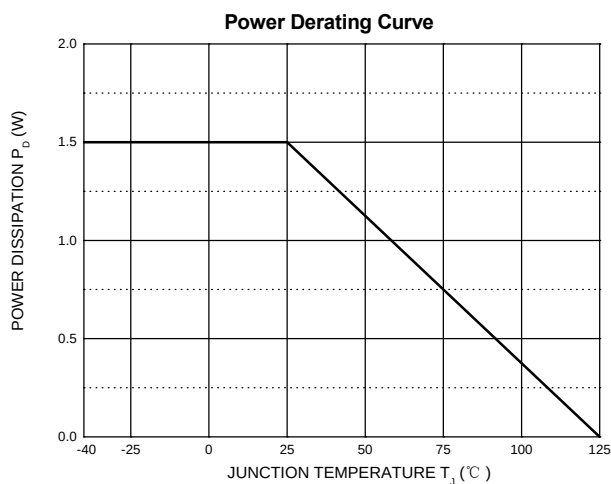
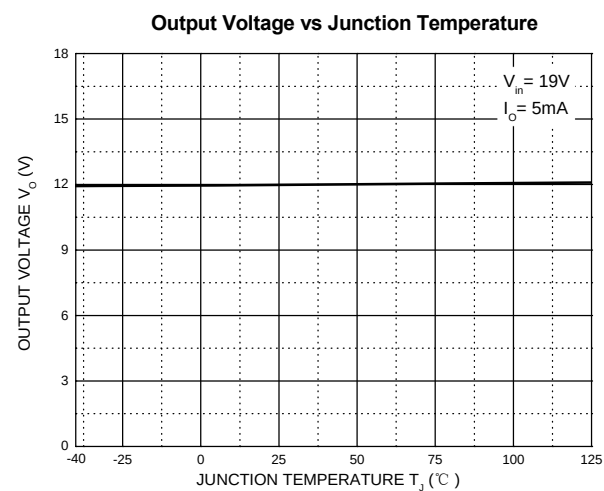
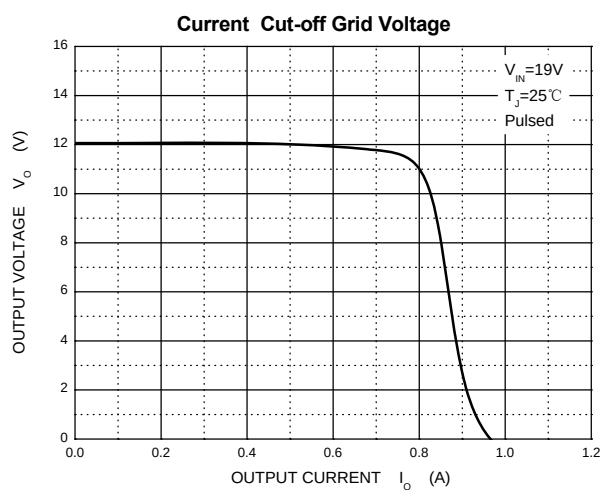
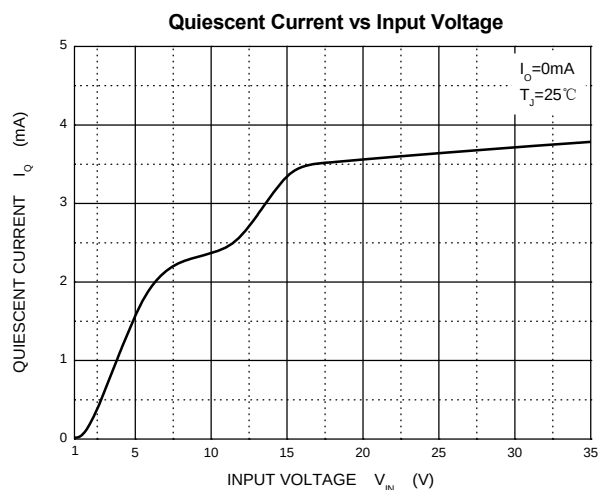
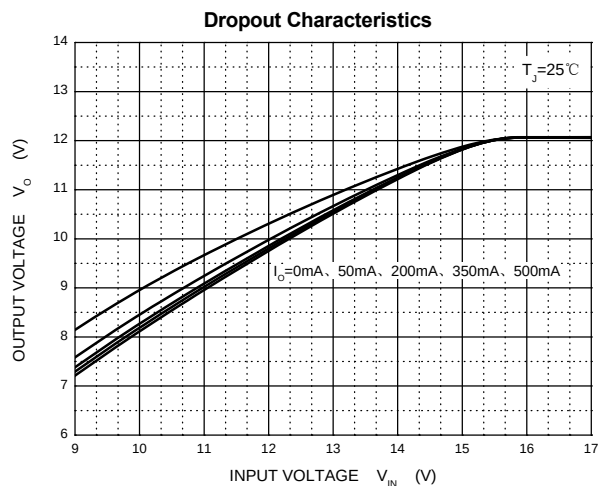
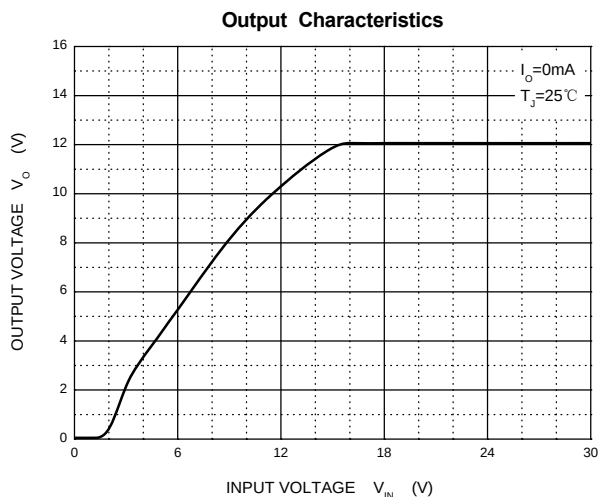
(3) This specification only applies to the DC power consumption allowed by the absolute maximum rating.

(4) 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

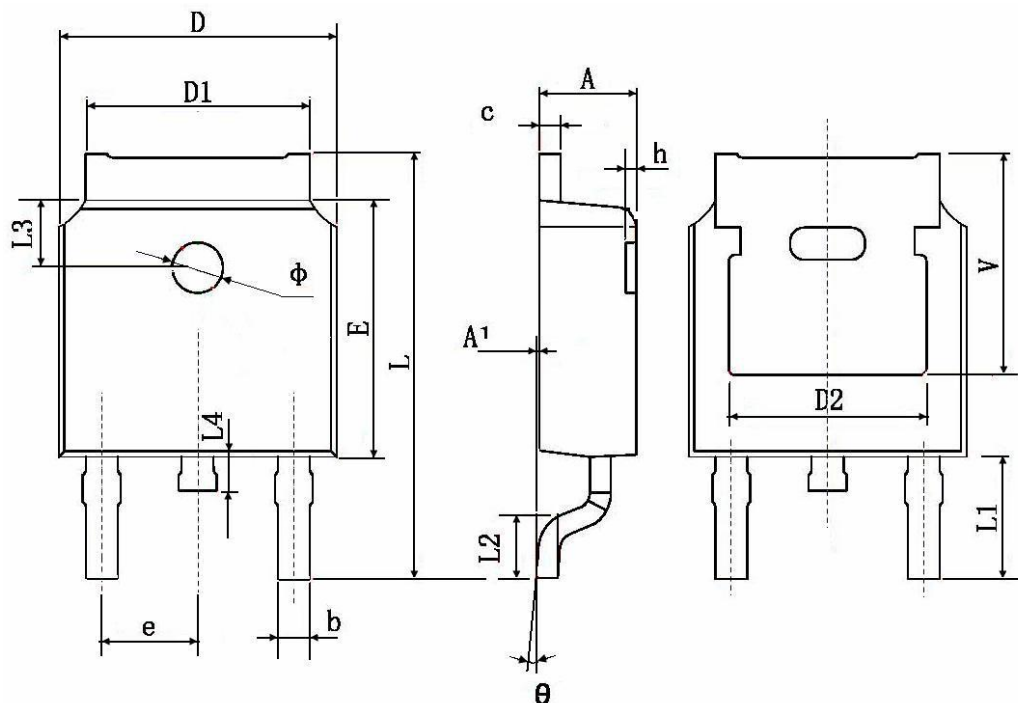
($C_{IN} = 0.33\mu F$, $C_{OUT} = 0.1\mu F$, $T_J = 25^\circ C$, unless otherwise specified)





78M12
Three terminal voltage regulator

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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