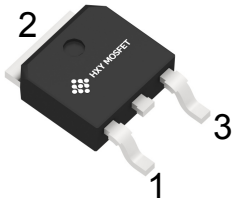
L78M09CDT
Three terminal voltage regulator

Features

- Available Output Voltage:9.0V
- Maximum Input Voltage: 35V
- Maximum Output Current:
  Exceed 1A 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



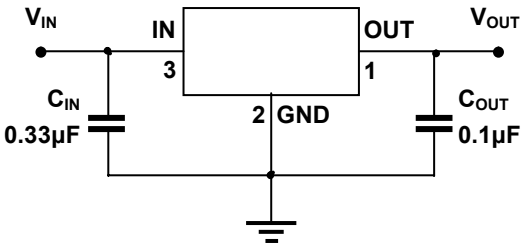
- 1: IN
- 2: GND
- 3: OUT

TO-252-2L
(DPAK)

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
L78M09CDT	TO-252-2L (DPAK)	78M09	2500

Typical Application Circuit



Conventional Circuit

Absolute Maximum Ratings

Characteristics	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

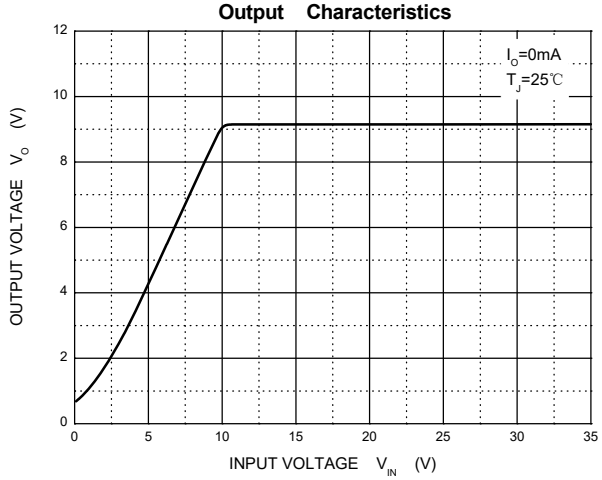
(V_{IN} = 16V, I_{OUT} = 500mA, C_{IN} = 0.33μF, C_{OUT} = 0.1μF, T_J = 25°C, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Output voltage	Vo	Tj=25°C	8.82	9	9.18	V
		5.0mA<Io<1.0A,Po<15W Vi=11.5V to 24V	8.65	9	9.35	V
Line regulation	ΔVo	Tj=25°C,Vi=11.5V to 26V			180	mV
		Tj=25°C,Vi=12V to 18V			90	mV
Load regulation	ΔVo	Tj=25°C,Io=5.0mA to 1.0A			180	mV
		Tj=25°C,Io=250mA to 750mA			90	mV
Quiescent current	I_Q	Tj=25°C		4.3	8	mA
Quiescent current change	ΔIQ	Io=5mA to 1.0A			0.5	mA
		Vi=12.5V to 25V, Io=500mA			0.8	mA
Output voltage drift	ΔVo/ΔT	Io=5mA		1.2		mV/°C
Output noise voltage	V_N	f=10Hz to 100kHz,Ta=25°C		42		μV/Vo
Ripple rejection	RR	f=120Hz, Vi=12.5V to 22.5V		61		dB
Dropout voltage	Vo	Io=1.0A,Tj=25°C		2		V
Output resistance	Ro	f=1kHz		18		mΩ
Short circuit current	Isc	Vi=35V,Ta=25°C		200		mA

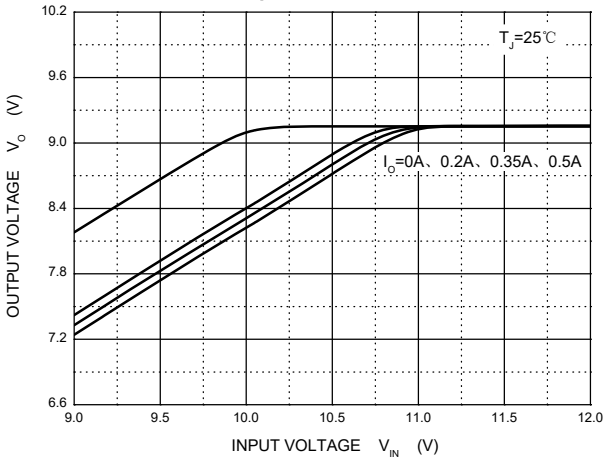
Typical Characteristics

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

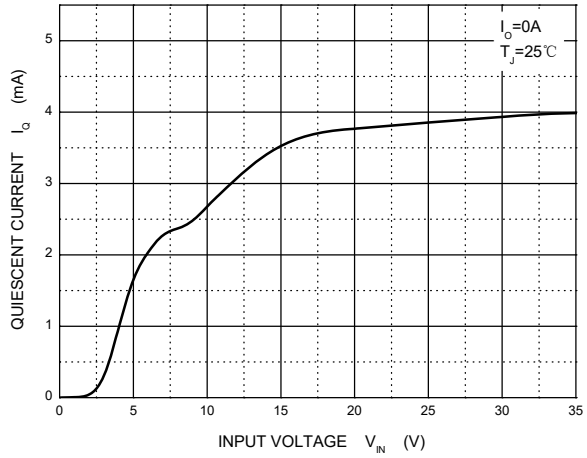
Output Characteristics



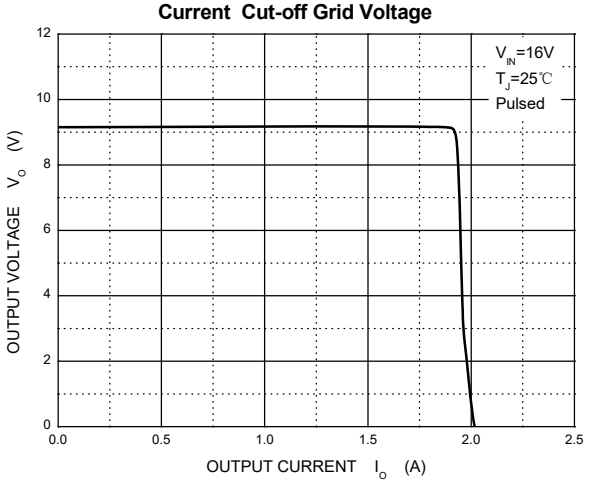
Dropout Characteristics



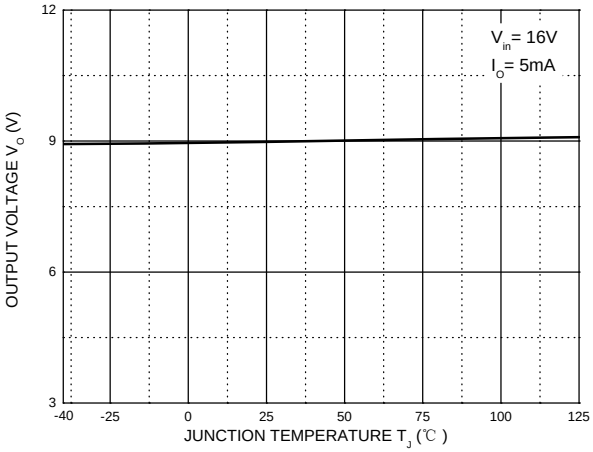
Quiescent Current



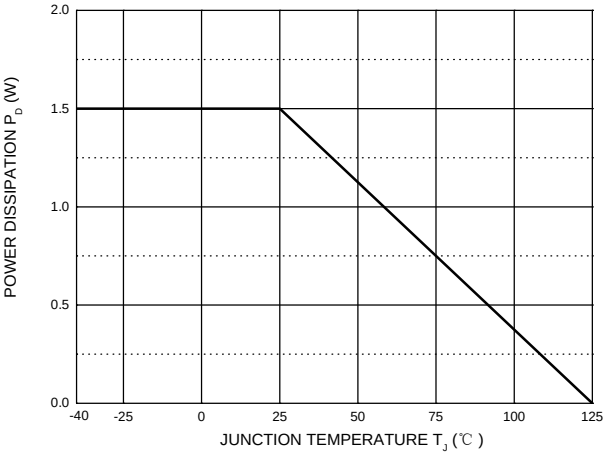
Current Cut-off Grid Voltage



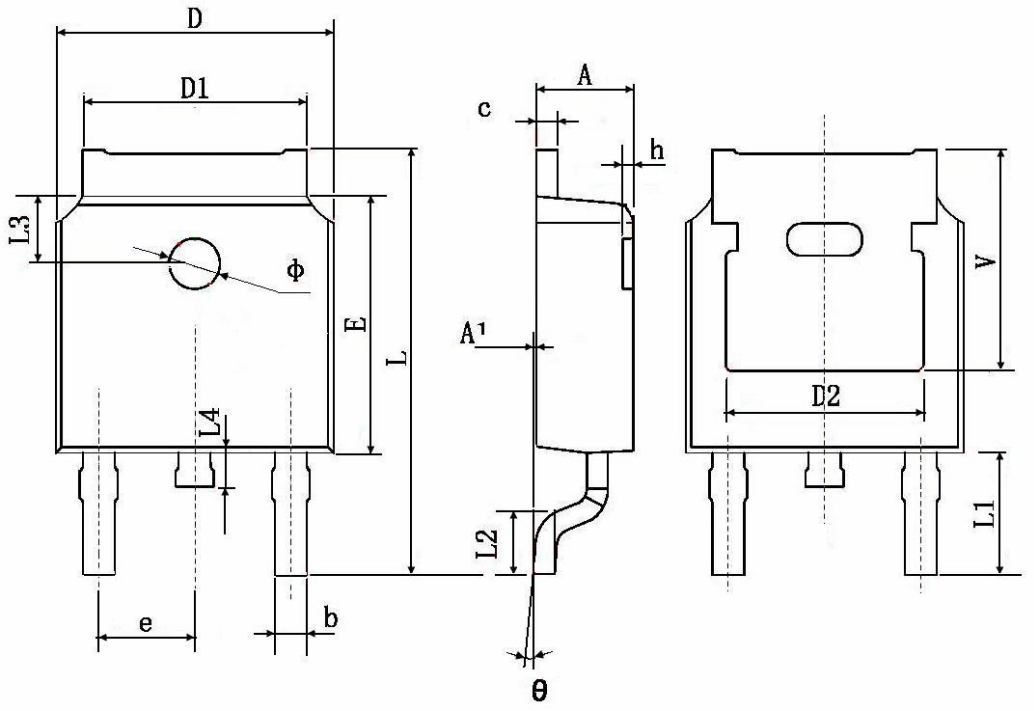
Output Voltage vs Junction Temperature



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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