

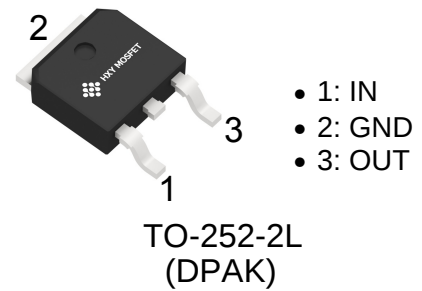


Features

- Available Output Voltage: 9.0V
- 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

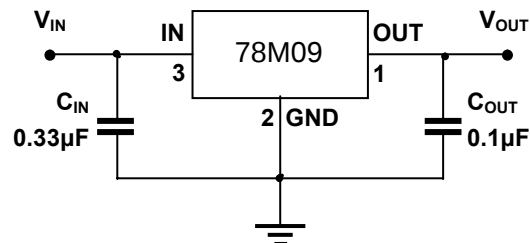
- Motor Drives
- On-Card Regulation
- Portable Devices
- Telecommunications
- TVs and Set-top Boxes



Package Marking and Ordering Information

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

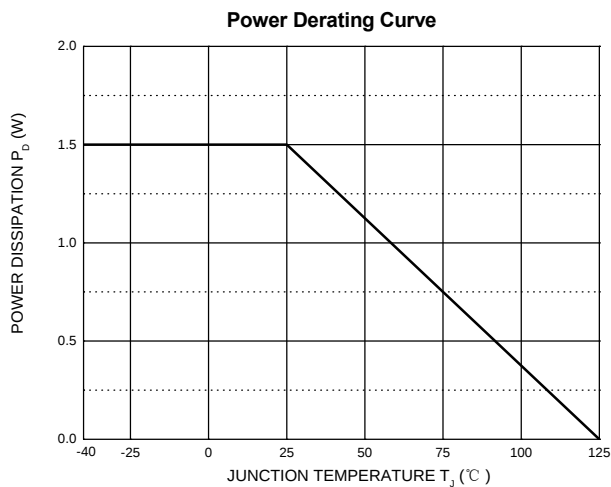
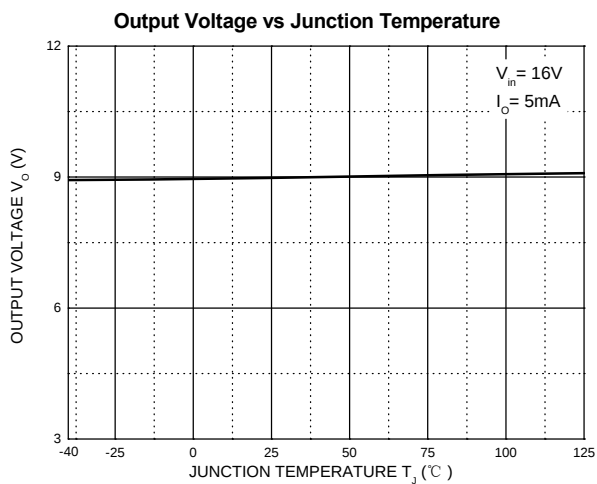
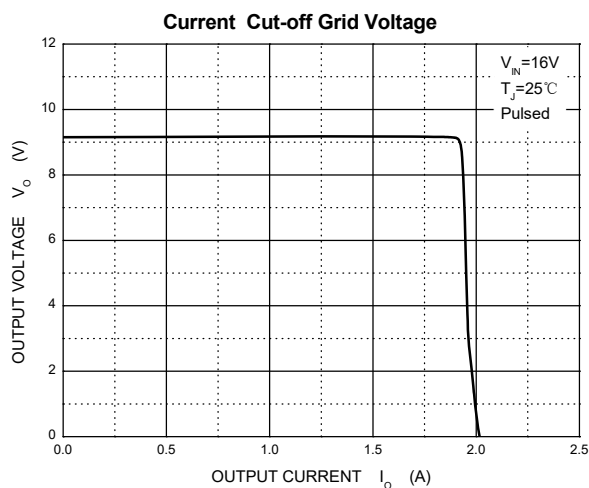
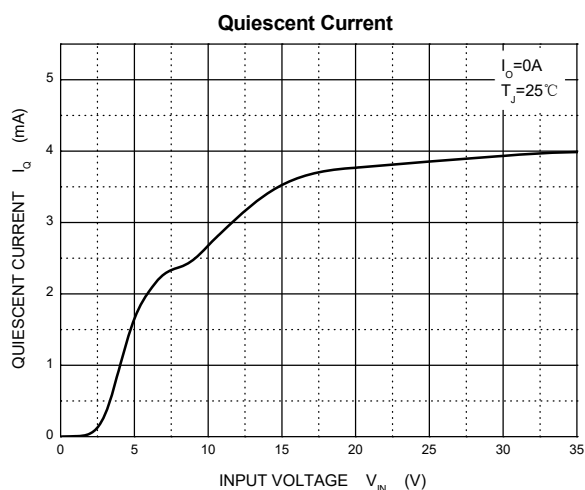
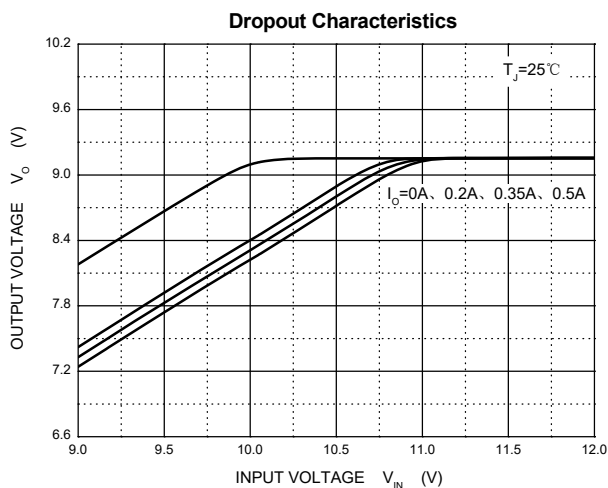
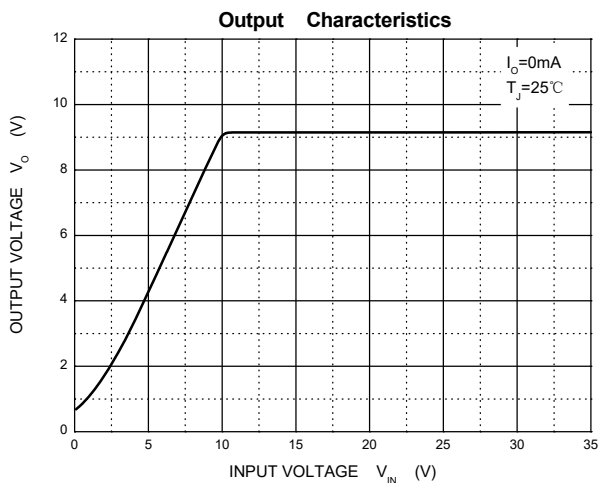
($V_{IN} = 16V$, $I_{OUT} = 350mA$, $C_{IN} = 0.33\mu F$, $C_{OUT} = 0.1\mu F$, $T_J = 25^\circ C$, unless otherwise specified)

CHARACTERISTIC	SYMBOL	TEST CONDITIONS ⁽⁸⁾	MIN.	TYP. ⁽⁹⁾	MAX.	UNIT
Output voltage ⁽¹⁰⁾	V_{OUT}	-	8.73	9.00	9.27	V
		$V_{IN} = 11.5$ to $24V$, $I_{OUT} = 5$ to $350mA$	8.55	9.00	9.45	
Line regulation	LNR	$V_{IN} = 11.5$ to $26V$, $I_{OUT} = 200mA$	-	6.0	100	mV
		$V_{IN} = 12$ to $26V$, $I_{OUT} = 200mA$	-	2.0	50	
Load regulation	LDR	$I_{OUT} = 5$ to $500mA$	-	20	180	mV
		$I_{OUT} = 5$ to $200mA$	-	10	90	
Quiescent current	I_Q	-	-	4.6	6.0	mA
Quiescent current change	ΔI_Q	$V_{IN} = 11.5$ to $26V$, $I_{OUT} = 200mA$	-	-	0.8	mA
		$I_{OUT} = 5$ to $350mA$	-	-	0.5	
Output noise voltage	V_N	$f = 10$ to $100kHz$	-	60	-	μV
Ripple rejection	RR	$V_{IN} = 13$ to $23V$, $I_{OUT} = 300mA$, $f = 120Hz$	56	80	-	dB
Dropout voltage ⁽¹¹⁾	V_D	$I_{OUT} = 350mA$	-	2.0	-	V
Short circuit current	I_{SC}	$V_{IN} = 16V$, OUT short to GND	-	250	-	mA
Peak current	I_{Peak}	-	-	0.5	-	A



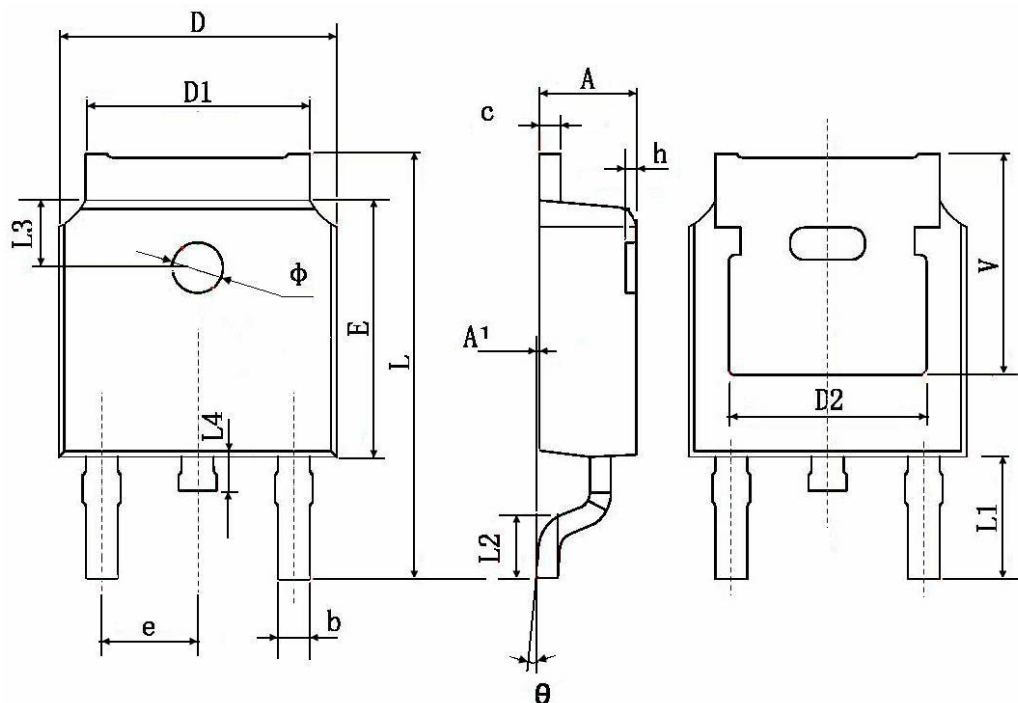
Typical Characteristics

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





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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