DATA SHEET

PS78MXX SERIES

500mA POSITIVE VOLTAGE REGULATORS

DESCRIPTION

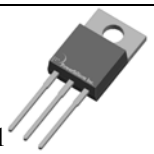
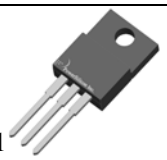
The PS78Mxx series of fixed-voltage monolithic integrated circuit voltage regulator designed for a wide range of applications. These applications include local and on-card regulation for elimination of noise and distribution problems associated with single-point regulation. When with adequate heat-sinking, this voltage regulator can deliver in excess of 500mA output current.

This voltage regulator employ built-in current limiting, thermal shutdown protection which makes the device essentially immune to damage from output overloads.

FEATURES

- Output Current Up to 500mA
- Internal Thermal Overload Protection
- Short Circuit Current Limiting
- Output Voltage of 5V, 6V, 7V, 7.5V, 8V, 8.5V, 9V, 10V, 12V, 15V, 18V, 20V, 24V, 27V
- Lead Free And Halogen-Free

PIN CONFIGURATION

PIN	CONFIGURATION	PACKAGE			
		SOT-89	TO-252	TO-220	TO-220F
1	INPUT				
2	GND				
3	OUTPUT				

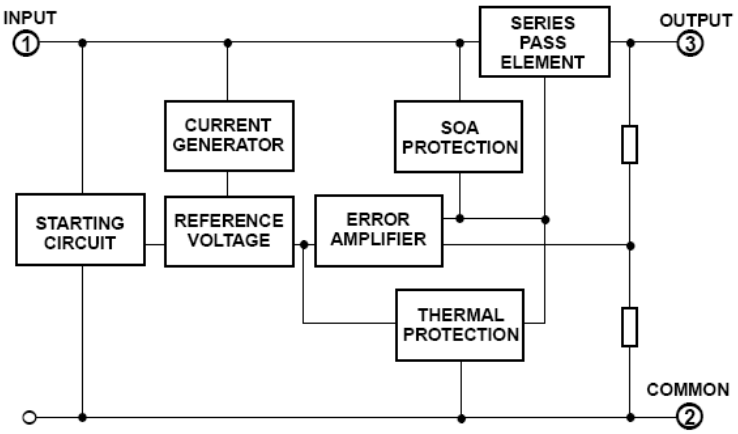
ORDERING INFORMATION

Part Number	Output Voltage	Package	Shipping
PS78Mxx-T89R	x.x	SOT-89	TAPE REEL
PS78Mxx-TC2R	x.x	TO-252	TAPE REEL
PS78Mxx-TB3T	x.x	TO-220	TUBE
PS78Mxx-TB3FT	x.x	TO-220F	TUBE

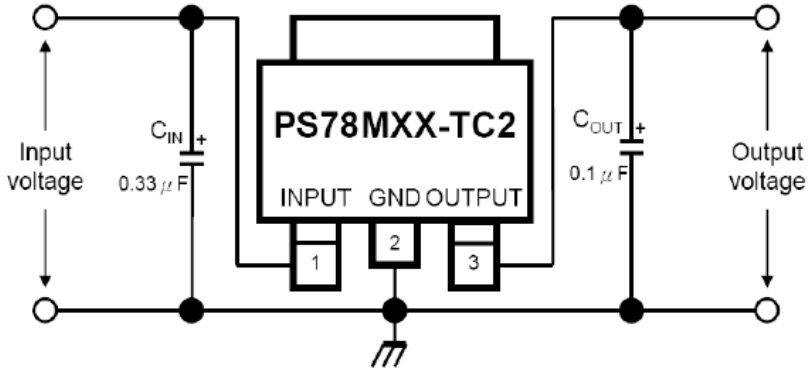
Note:

1. "x.x": Output Voltage
   Ex: PS78M05=5V, PS78M06=6V, PS78M75=7.5V...PS78M27=27V

SCHEMATIC DIAGRAM



TYPICAL APPLICATION



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Input Voltage	PS78M05~PS78M20	V_I	35	V
	PS78M24~PS78M27		40	
Power Dissipation		P_D	Internally Limited	W
Operating Junction Temperature Range		T_{OPR}	0 to +125	°C
Storage Temperature Range		T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	SOT-89	$R_{\theta JC}$	51	°C/W
	TO-252		7	
	TO-220		3	
	TO-220F		4	
Thermal Resistance, Junction to Ambient	SOT-89	$R_{\theta JA}$	200	°C/W
	TO-252		86	
	TO-220		68	
	TO-220F		70	

Note:

Maximum power dissipation is a function of $T_{J(max)}$, $R_{\theta JA}$, and T_A. The maximum allowable power dissipation at any allowable ambient temperature is $P_D = (T_{J(max)} - T_A)/ R_{\theta JA}$. Operating at the absolute maximum T_J of 125°C can affect reliability. Due to variations in individual device electrical characteristics and thermal resistance, the built-in thermal-overload protection may be activated at power levels slightly above or below the rated dissipation.

ELECTRICAL CHARACTERISTICS

PS78M05, (T_A=25°C, V_{IN}=10V, I_{OUT}=350mA, C_{IN}=0.33µF, C_{OUT}=0.1µF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	4.85	5	5.15	V
		7.0≤ V_I ≤ 20V, I_O = 5mA~350mA	4.75	5	5.25	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	15	100	mV
		T_J = 25°C, I_O = 5mA~200mA	-	5	50	
Line Regulation	ΔV_O	7.0V≤ V_I ≤ 25V, I_O = 200mA, T_J= 25°C	-	10	100	mV
		8.0V≤ V_I ≤ 25V, I_O = 200mA, T_J= 25°C	-	5	50	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	7.0V ≤ V_I≤ 25V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	40	-	uV
Ripple Rejection	RR	8.0V ≤ V_I ≤ 18V,f = 120Hz, T_J = 25°C	62	78	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	300	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M06, (T_A=25°C, V_{IN}=11V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	5.82	6	6.18	V
		8.0≤ V_I ≤ 21V, I_O = 5mA~350mA	5.7	6	6.3	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	15	120	mV
		T_J = 25°C, I_O = 5mA~200mA	-	5	60	
Line Regulation	ΔV_O	8.0V≤ V_I ≤ 25V, I_O = 200mA, T_J = 25°C	-	18	120	mV
		9.0V≤ V_I ≤ 25V, I_O = 200mA,T_J = 25°C	-	10	60	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	8.0V ≤ V_I≤ 25V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	45	-	uV
Ripple Rejection	RR	8.0V ≤ V_I ≤ 18V,f = 120Hz, T_J = 25°C	59	76	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	270	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M07, (T_A=25°C, V_{IN}=13V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	6.79	7	7.21	V
		9.5≤ V_I ≤ 22V, I_O = 5mA~350mA	6.65	7	7.35	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	15	140	mV
		T_J = 25°C, I_O = 5mA~200mA	-	5	70	
Line Regulation	ΔV_O	9.5V≤ V_I ≤ 25V, I_O = 200mA, T_J= 25°C	-	10	140	mV
		9.5V≤ V_I ≤ 25V, I_O = 200mA, T_J= 25°C	-	3	70	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	9.5V ≤ V_I≤ 25V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	48	-	uV
Ripple Rejection	RR	10.5V ≤ V_I ≤ 20.5V,f = 120Hz, T_J= 25°C	59	76	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	270	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M75, (T_A=25°C, V_{IN}=13.5V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	7.275	7.5	7.725	V
		10≤ V_I ≤ 22.5V, I_O = 5mA~350mA	7.12	7.5	7.88	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	15	150	mV
		T_J = 25°C, I_O = 250mA~500mA	-	5	75	
Line Regulation	ΔV_O	10V≤ V_I ≤ 25V, I_O = 200mA, T_J = 25°C	-	10	150	mV
		10V≤ V_I ≤ 15V, I_O = 200mA, T_J = 25°C	-	3	75	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	10V ≤ V_I≤ 25V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	50	-	uV
Ripple Rejection	RR	11V ≤ V_I ≤ 21V,f = 120Hz, T_J = 25°C	59	76	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	270	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M08, (T_A=25°C, V_{IN}=14V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	7.76	8	8.24	V
		10.5≤ V_I ≤ 23V, I_O = 5mA~350mA	7.6	8	8.4	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	15	160	mV
		T_J = 25°C, I_O = 5mA~200mA	-	5	80	
Line Regulation	ΔV_O	10.5V≤ V_I ≤ 25V, I_O = 200mA, T_J = 25°C	-	20	160	mV
		11V≤ V_I ≤ 25V, I_O = 200mA, T_J = 25°C	-	10	80	
Quiescent Current	I_Q	T_J = 25°C	-	4.8	8	mA
Quiescent Current Change	ΔI_Q	10.5V ≤ V_I ≤ 25V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O ≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	52	-	uV
Ripple Rejection	RR	11.5V ≤ V_I ≤ 21.5V,f = 120Hz, T_J = 25°C	55	72	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	250	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M85, (T_A=25°C, V_{IN}=15V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	8.245	8.5	8.755	V
		10.5≤ V_I ≤ 23V, I_O = 5mA~350mA	8.1	8.5	8.9	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	15	170	mV
		T_J = 25°C, I_O = 5mA~200mA	-	5	85	
Line Regulation	ΔV_O	10.5V≤ V_I ≤ 25V, I_O = 200mA, T_J = 25°C	-	18	170	mV
		11V≤ V_I ≤ 25V, I_O = 200mA, T_J = 25°C	-	10	85	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	10.5V ≤ V_I ≤ 25V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O ≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	45	-	uV
Ripple Rejection	RR	11.5V ≤ V_I ≤ 21.5V,f = 120Hz, T_J = 25°C	54	70	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	250	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M09, (T_A=25°C, V_{IN}=16V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	8.73	9	9.27	V
		11.5≤ V_I ≤ 24V, I_O = 5mA~350mA	8.55	9	9.45	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	20	180	mV
		T_J = 25°C, I_O = 5mA~200mA	-	10	90	
Line Regulation	ΔV_O	11.5V≤ V_I ≤ 27V, I_O = 200mA, T_J = 25°C	-	7	180	mV
		13V≤ V_I ≤ 27V, I_O = 200mA, T_J = 25°C	-	2	90	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	11V ≤ V_I ≤ 27V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O ≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	60	-	uV
Ripple Rejection	RR	12V ≤ V_I ≤ 22V,f = 120Hz, T_J = 25°C	55	70	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	250	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M10, (T_A=25°C, V_{IN}=17V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	9.7	10	10.3	V
		12.5≤ V_I ≤ 25V, I_O = 5mA~350mA	9.5	10	10.5	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	20	200	mV
		T_J = 25°C, I_O = 5mA~200mA	-	10	100	
Line Regulation	ΔV_O	12.5V≤ V_I ≤ 28V, I_O = 200mA, T_J = 25°C	-	7	200	mV
		14V≤ V_I ≤ 28V, I_O = 200mA, T_J = 25°C	-	2	100	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	12.5V ≤ V_I ≤ 28V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O ≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	70	-	uV
Ripple Rejection	RR	13V ≤ V_I ≤ 23V,f = 120Hz, T_J = 25°C	55	71	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	245	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M12, (T_A=25°C, V_{IN}=19V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	11.64	12	12.36	V
		14.5≤ V_I ≤ 27V, I_O = 5mA~350mA	11.4	12	12.6	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	25	240	mV
		T_J = 25°C, I_O = 5mA~200mA	-	10	120	
Line Regulation	ΔV_O	14.5V≤ V_I ≤ 30V, I_O = 200mA, T_J = 25°C	-	10	100	mV
		16V≤ V_I ≤ 30V, I_O = 200mA, T_J = 25°C	-	3	50	
Quiescent Current	I_Q	T_J = 25°C	-	4.6	6	mA
Quiescent Current Change	ΔI_Q	14.5V ≤ V_I ≤ 30V, I_O = 200mA	-	-	0.8	mA
	ΔI_Q	5mA ≤ I_O ≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	75	-	uV
Ripple Rejection	RR	15V ≤ V_I ≤ 25V,f = 120Hz, T_J = 25°C	55	-	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	240	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.7	-	A

PS78M15, (T_A=25°C, V_{IN}=23V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	14.55	15	15.45	V
		17.5≤ V_I ≤ 30V, I_O = 5mA~350mA	14.25	15	15.75	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	25	300	mV
		T_J = 25°C, I_O = 5mA~200mA	-	10	150	
Line Regulation	ΔV_O	17.5V≤ V_I ≤ 30V, I_O = 200mA, T_J = 25°C	-	12	300	mV
		20V≤ V_I ≤ 30V, I_O = 200mA, T_J = 25°C	-	3	150	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	17.5V ≤ V_I ≤ 30V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O ≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	90	-	uV
Ripple Rejection	RR	18.5V ≤ V_I ≤ 28.5V,f = 120Hz, T_J = 25°C	54	70	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	240	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M18, (T_A=25°C, V_{IN}=27V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	17.46	18	18.54	V
		21≤ V_I ≤ 33V, I_O = 5mA~350mA	17.1	18	18.9	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	25	360	mV
		T_J = 25°C, I_O = 5mA~200mA	-	10	180	
Line Regulation	ΔV_O	21V≤ V_I ≤ 33V, I_O = 200mA, T_J = 25°C	-	15	360	mV
		24V≤ V_I ≤ 33V, I_O = 200mA, T_J = 25°C	-	5	180	
Quiescent Current	I_Q	T_J = 25°C	-	4.8	8	mA
Quiescent Current Change	ΔI_Q	21V ≤ V_I ≤ 33V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O ≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	110	-	uV
Ripple Rejection	RR	22V ≤ V_I ≤ 32V,f = 120Hz, T_J = 25°C	53	69	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	240	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M20, (T_A=25°C, V_{IN}=29V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	19.4	20	20.6	V
		23≤ V_I ≤ 35V, I_O = 5mA~350mA	19	20	21	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	25	400	mV
		T_J = 25°C, I_O = 5mA~200mA	-	10	200	
Line Regulation	ΔV_O	23V≤ V_I ≤ 35V, I_O = 200mA, T_J = 25°C	-	18	400	mV
		25V≤ V_I ≤ 35V, I_O = 200mA, T_J = 25°C	-	7	200	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	23V ≤ V_I ≤ 35V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O ≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	110	-	uV
Ripple Rejection	RR	24V ≤ V_I ≤ 34V,f = 120Hz, T_J = 25°C	51	66	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	240	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M24, (T_A=25°C, V_{IN}=33V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	23.28	24	24.72	V
		27≤ V_I ≤ 38V, I_O = 5mA~350mA	22.8	24	25.2	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	25	480	mV
		T_J = 25°C, I_O = 5mA~200mA	-	10	240	
Line Regulation	ΔV_O	27V≤ V_I ≤ 38V, I_O = 200mA, T_J = 25°C	-	20	480	mV
		28V≤ V_I ≤ 38V, I_O = 200mA, T_J = 25°C	-	10	240	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	27V ≤ V_I ≤ 38V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O ≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	110	-	uV
Ripple Rejection	RR	28V ≤ V_I ≤ 38V,f = 120Hz, T_J = 25°C	50	66	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	240	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

PS78M27, (T_A=25°C, V_{IN}=36V, I_{OUT}=350mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = 25°C	25.19	27	27.81	V
		30≤ V_I ≤ 40V, I_O = 5mA~350mA	25.7	27	28.3	
Load Regulation	ΔV_O	T_J = 25°C, I_O = 5mA~500mA	-	27	540	mV
		T_J = 25°C, I_O = 5mA~200mA	-	12	270	
Line Regulation	ΔV_O	30V≤ V_I ≤ 40V, I_O = 200mA, T_J = 25°C	-	25	540	mV
		33V≤ V_I ≤ 39V, I_O = 200mA, T_J = 25°C	-	10	270	
Quiescent Current	I_Q	T_J = 25°C	-	3.8	8	mA
Quiescent Current Change	ΔI_Q	30V ≤ V_I ≤ 40V, I_O = 200mA	-	-	1.5	mA
	ΔI_Q	5mA ≤ I_O ≤ 350mA	-	-	0.5	mA
Output Noise Voltage	V_N	10Hz ≤ f ≤ 100KHz	-	130	-	uV
Ripple Rejection	RR	30V ≤ V_I ≤ 40V,f = 120Hz, T_J = 25°C	50	64	-	dB
Short-Circuit Output Current	I_{SHORT}	T_J = 25°C	-	240	-	mA
Dropout Voltage	V_{DROP}	T_J = 25°C	-	2.0	-	V
Peak Output Current	I_{PK}	T_J = 25°C	-	0.8	-	A

Note:

1. Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately
2. The maximum steady state usable output current are dependent on input voltage, heat sinking, lead length of the package and copper pattern of PCB. The data are showed as electrical characteristics table represents pulse test conditions with junction temperatures specified at the initiation of test.

TYPICAL PERFORMANCE CHARACTERISTICS

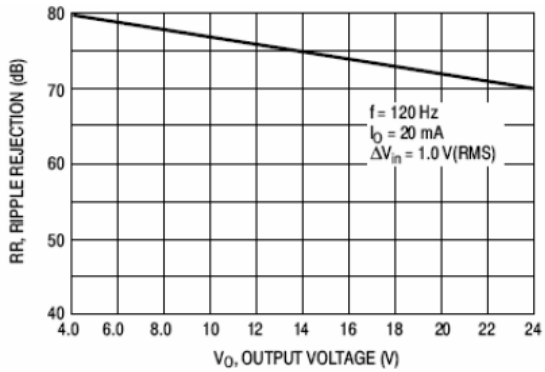


Figure 1. Ripple Rejection as a Function of Output Voltages

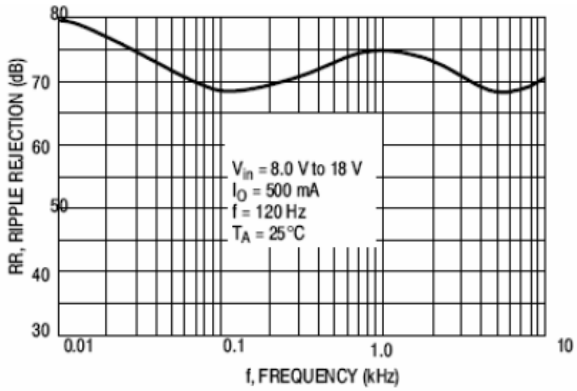


Figure2 Ripple Rejection as a Function of Frequency

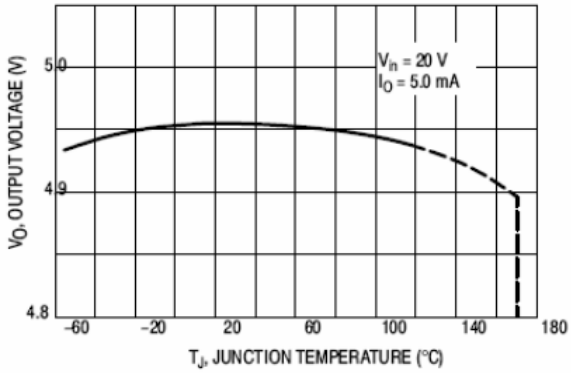


Figure 3. Output Voltage as a Function of Junction Temperature

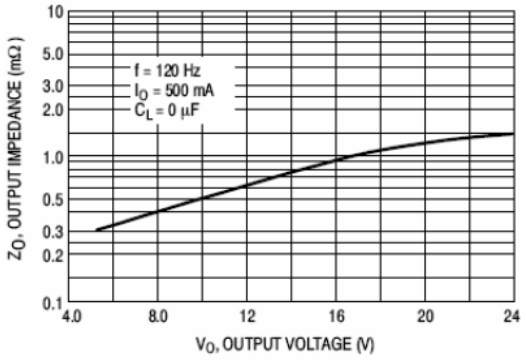


Figure 4. Output Impedance as a Function of Output Voltage

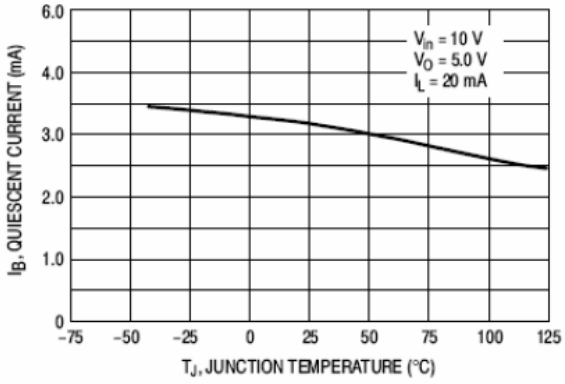


Figure 5. Quiescent Current as a Function of Temperature