



SK7805A THRU SK7812A

Three-terminal positive voltage regulator

OUTPUT CURRENT TO 1.2A

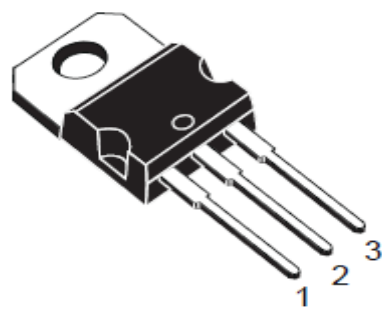
OUTPUT VOLTAGES OF 5; 6; 8; 9; 12V

THERMAL OVERLOAD PROTECTION

SHORT CIRCUIT PROTECTION

OUTPUT TRANSITION SOA PROTECTION

1、 Absolute Maximum Ratings $T_c=25^{\circ}\text{C}$

Symbol	Parameter	Value	UNIT	 TO-220 1 Input 2 Gnd 3 Out
VI	Input Voltage	35	V	
TOPR	Operating Temperature Range	0 ~ +125	$^{\circ}\text{C}$	
TSTG	Storage Temperature Range	-65 ~ +150	$^{\circ}\text{C}$	

2、 Electrical Characteristics ($T_c=25^{\circ}\text{C}$) Of SK7805A (refer to the test circuits , T_J = -55 to 150 $^{\circ}\text{C}$ V_I = 10V, I_O = 500 mA , C_I = 0.33 μF , C_O = 0.1 μF unless otherwise specified)。

Parameter	Symbol	Test Condition	MIN	TYP	MAX	UNIT
Output Voltage	VO	$T_J = +25^{\circ}\text{C}$	4.8	5	5.2	V
		$I_O = 5\text{mA to } 1\text{A}, P_O \leq 15\text{W}$	4.75	5	5.25	
		$V_I = 8\text{V to } 20\text{V}$				
Line Regulation (Notel)	ΔV_O	$T_J = +25^{\circ}\text{C}$			100	mV
		$V_I = 7\text{V to } 25\text{V}$				
		$V_I = 8\text{V to } 12\text{V}$			50	
Load Regulation (Notel)	ΔV_O	$T_J = +25^{\circ}\text{C}$			100	mV
		$I_O = 5\text{mA to } 1.2\text{A}$				
		$T_J = +25^{\circ}\text{C}$			50	
		$I_O = 250\text{mA to } 750\text{mA}$				
Quiescent Current	IQ	$T_J = +25^{\circ}\text{C}$			6	mA
Quiescent Current Change	ΔI_Q	$I_O = 5\text{mA to } 1\text{A}$			0.5	mA
		$V_I = 8\text{V to } 25\text{V}$			0.8	
Quiescent Current Change	$\Delta V_O/\Delta T$	$I_O = 5\text{mA}$		0.6		mV/ $^{\circ}\text{C}$
Short Circuit Current	ISC	$T_J = +25^{\circ}\text{C}, V_I = 35\text{V}$		0.75	1.2	A



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3、Electrical Characteristics (Tc=25°C) Of SK7806A(refer to the test circuits , TJ = -55 to 150°C VI = 11V, IO = 500 mA , CI = 0.33 μ F, CO = 0.1 μ F unless otherwise specified)

Parameter	Symbol	Test Condition	MIN	TYP	MAX	UNIT
Output Voltage	VO	TJ = +25°C	5.75	6	6.25	V
		IO = 5mA to 1A, PO $\leq$ 15W VI = 9V to 21V	5.65	6	6.35	
Line Regulation (Notel)	Δ VO	TJ = +25°C	VI = 8V to 25V		100	mV
			VI = 9V to 13V		50	
Load Regulation (Notel)	Δ VO	TJ = +25°C IO = 5mA to 1.2A			100	mV
		TJ = +25°C IO = 250mA to 750mA			50	
Quiescent Current	IQ	TJ = +25°C			6	mA
Quiescent Current Change	Δ IQ	IO = 5mA to 1A			0.5	mA
		VI = 9V to 25V			0.8	
Quiescent Current Change	Δ VO/ Δ T	IO = 5mA		0.7		mV/°C
Short Circuit Current	ISC	TJ = +25° C, VI = 35V		0.75	1.2	A



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4、Electrical Characteristics ($T_c=25^{\circ}\text{C}$) Of SK7808A(refer to the test circuits , $T_J = -55$ to 150°C $V_I = 14\text{V}$, $I_O = 500\text{ mA}$, $C_I = 0.33\text{ }\mu\text{F}$, $C_O = 0.1\text{ }\mu\text{F}$ unless otherwise specified)。

Parameter	Symbol	Test Condition	MIN	TYP	MAX	UNIT
Output Voltage	V_O	$T_J = +25^{\circ}\text{C}$	7.7	8	8.3	V
		$I_O = 5\text{mA to } 1\text{A}$, $P_O \leq 15\text{W}$ $V_I = 11.5\text{V to } 23\text{V}$	7.6	8	8.4	
Line Regulation (Note1)	ΔV_O	$T_J = +25^{\circ}\text{C}$ $V_I = 10.5\text{V to } 25\text{V}$			100	mV
		$V_I = 11\text{V to } 17\text{V}$			50	
Load Regulation (Note1)	ΔV_O	$T_J = +25^{\circ}\text{C}$ $I_O = 5\text{mA to } 1.2\text{A}$			100	mV
		$T_J = +25^{\circ}\text{C}$ $I_O = 250\text{mA to } 750\text{mA}$			50	
Quiescent Current	I_Q	$T_J = +25^{\circ}\text{C}$			6	mA
Quiescent Current Change	ΔI_Q	$I_O = 5\text{mA to } 1\text{A}$			0.5	mA
		$V_I = 11.5\text{V to } 25\text{V}$			1	
Quiescent Current Change	$\Delta V_O/\Delta T$	$I_O = 5\text{mA}$		1		mV/ $^{\circ}\text{C}$
Short Circuit Current	I_{SC}	$T_J = +25^{\circ}\text{C}$, $V_I = 35\text{V}$		0.75	1.2	A



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5、Electrical Characteristics ($T_c=25^{\circ}\text{C}$) Of SK7809A(refer to the test circuits , $T_J = -55$ to 150°C $V_I = 15\text{V}$, $I_O = 500\text{ mA}$, $C_I = 0.33\text{ }\mu\text{F}$, $C_O = 0.1\text{ }\mu\text{F}$ unless otherwise specified)。

Parameter	Symbol	Test Condition	MIN	TYP	MAX	UNIT
Output Voltage	V_O	$T_J = +25^{\circ}\text{C}$	8.64	9	9.36	V
		$I_O = 5\text{mA to } 1\text{A}$, $P_O \leq 15\text{W}$ $V_I = 11.5\text{V to } 26\text{V}$	8.55	9	9.45	
Line Regulation (Note1)	ΔV_O	$T_J = +25^{\circ}\text{C}$ $V_I = 11.5\text{V to } 26\text{V}$			100	mV
		$V_I = 12\text{V to } 18\text{V}$			50	
Load Regulation (Note1)	ΔV_O	$T_J = +25^{\circ}\text{C}$ $I_O = 5\text{mA to } 1.2\text{A}$			100	mV
		$T_J = +25^{\circ}\text{C}$ $I_O = 250\text{mA to } 750\text{mA}$			50	
Quiescent Current	I_Q	$T_J = +25^{\circ}\text{C}$			6	mA
Quiescent Current Change	ΔI_Q	$I_O = 5\text{mA to } 1\text{A}$			0.5	mA
		$V_I = 11.5\text{V to } 26\text{V}$			1	
Quiescent Current Change	$\Delta V_O/\Delta T$	$I_O = 5\text{mA}$		1		mV/ $^{\circ}\text{C}$
Short Circuit Current	ISC	$T_J = +25^{\circ}\text{C}$, $V_I = 35\text{V}$		0.75	1.2	A



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6、Electrical Characteristics ($T_c=25^{\circ}\text{C}$) Of SK7812A (refer to the test circuits , $T_J = -55$ to 150°C $V_I = 19\text{V}$, $I_O = 500\text{ mA}$, $C_I = 0.33\text{ }\mu\text{F}$, $C_O = 0.1\text{ }\mu\text{F}$ unless otherwise specified)。

Parameter	Symbol	Test Condition		MIN	TYP	MAX	UNIT
Output Voltage	V_O	$T_J = +25^{\circ}\text{C}$		11.5	12	12.5	V
		$I_O = 5\text{mA to } 1\text{A}$, $P_O \leq 15\text{W}$ $V_I = 15.5\text{V to } 27\text{V}$		11.4	12	12.6	
Line Regulation (Notel)	ΔV_O	$T_J = +25^{\circ}\text{C}$	$V_I = 14.5\text{V to } 30\text{V}$			100	mV
			$V_I = 16\text{V to } 22\text{V}$			50	
Load Regulation (Notel)	ΔV_O	$T_J = +25^{\circ}\text{C}$ $I_O = 5\text{mA to } 1.2\text{A}$				100	mV
		$T_J = +25^{\circ}\text{C}$ $I_O = 250\text{mA to } 750\text{mA}$				50	
Quiescent Current	I_Q	$T_J = +25^{\circ}\text{C}$				6	mA
Quiescent Current Change	ΔI_Q	$I_O = 5\text{mA to } 1\text{A}$				0.5	mA
		$V_I = 15\text{V to } 30\text{V}$				1	
Quiescent Current Change	$\Delta V_O/\Delta T$	$I_O = 5\text{mA}$			1.5		mV/ $^{\circ}\text{C}$
Short Circuit Current	I_{SC}	$T_J = +25^{\circ}\text{C}$, $V_I = 35\text{V}$			0.75	1.2	A

7、Typical Characteristics

Figure 1: Dropout Voltage vs Junction Temperature

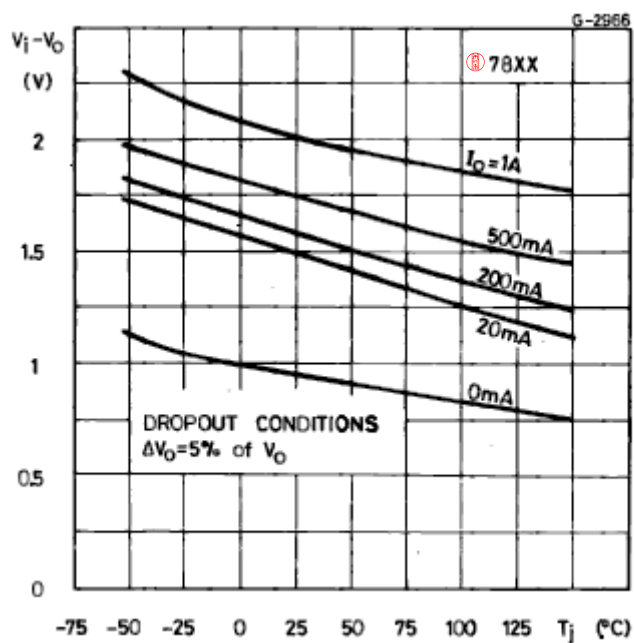


Figure 2: Peak Output Current vs Input/output Differential Voltage

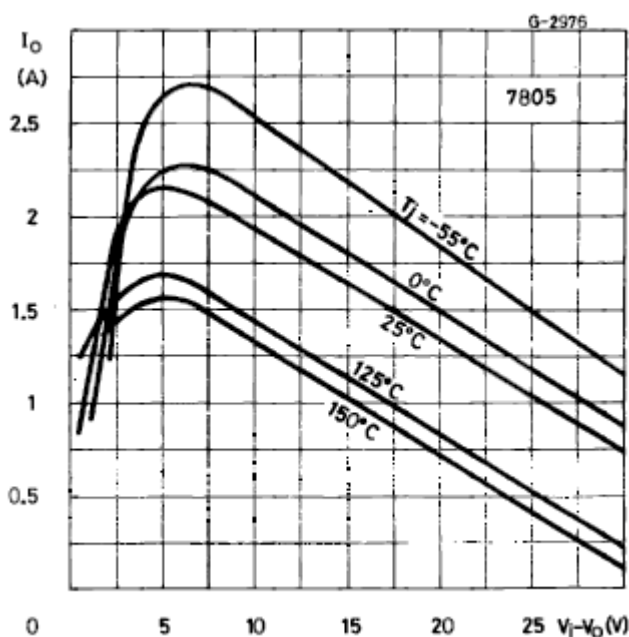


Figure 3: Supply Voltage Rejection vs Frequency

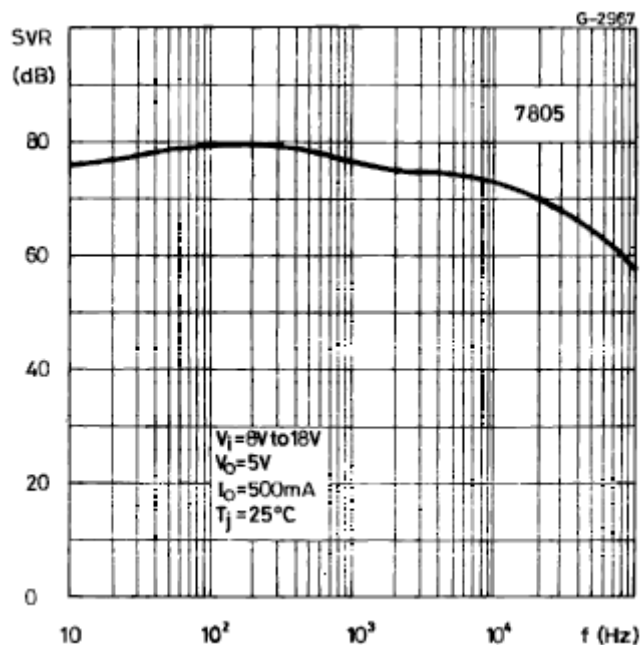


Figure 4: Quiescent Current vs Junction Temperature

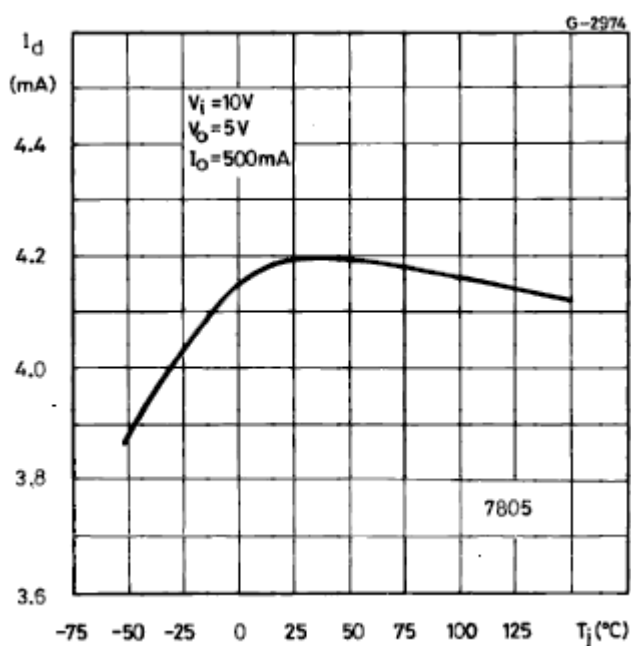


Figure 5: Output Voltage vs Junction Temperature

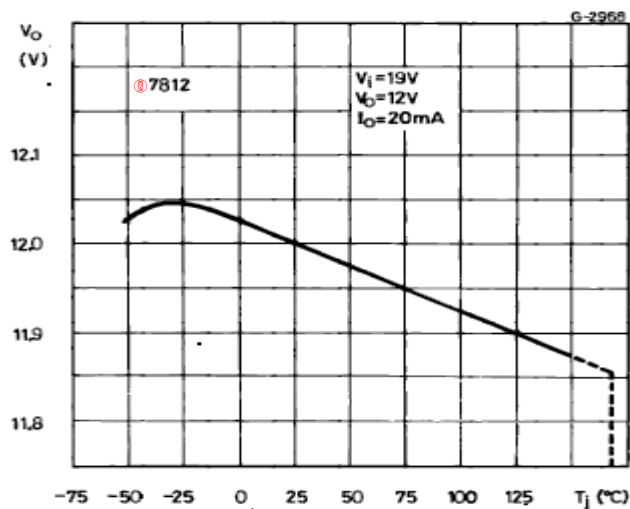


Figure 6: Load Transient Response

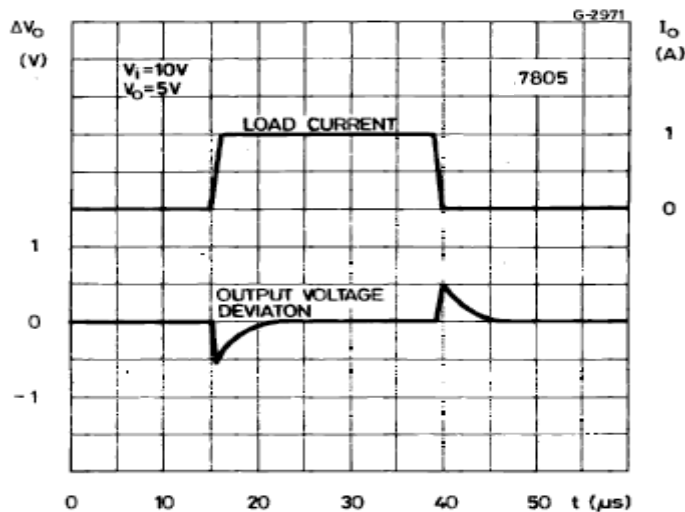


Figure 7: Output Impedance vs Frequency

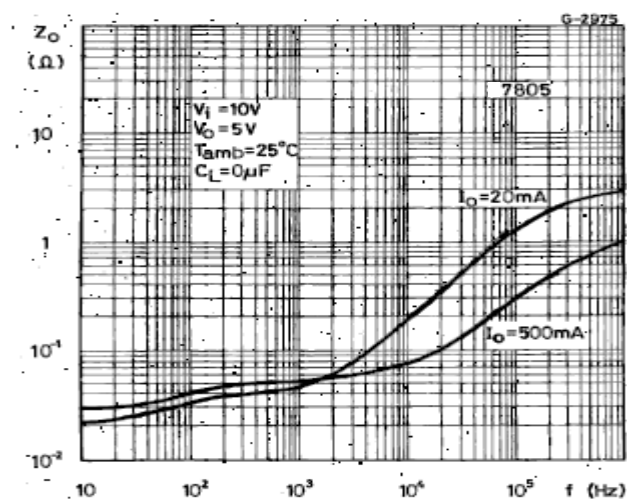


Figure 8: Line Transient Response

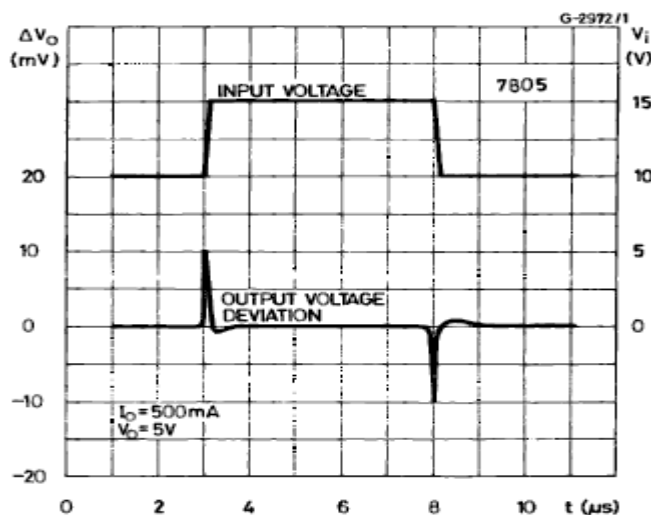
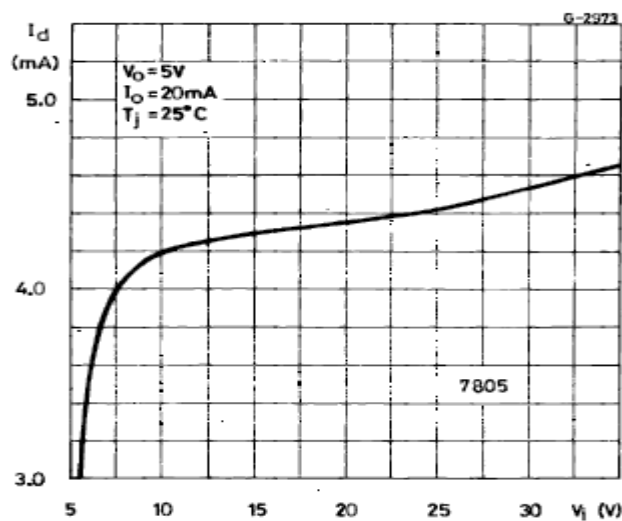


Figure 9: Quiescent Current vs Input Voltage





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8、Package Demensions

TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151

