Elektronische Bauelemente

SE78xx-B Series

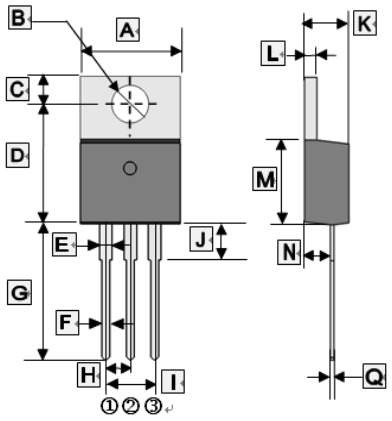
3-Terminal
Positive Voltage Regulator

RoHS Compliant Product
A suffix of "-C" specifies halogen or lead -free

DESCRIPTION

The SE78xx-B series of fixed-voltage monolithic integrated -circuit applications. These applications include on-card regulation for elimination of noise and distribution problems associated with single-point regulation. Each of these regulators can deliver up to 1 amperes of output current. The internal current limiting and thermal shutdown features of these regulators make them essentially immune to overload.

TO-220J

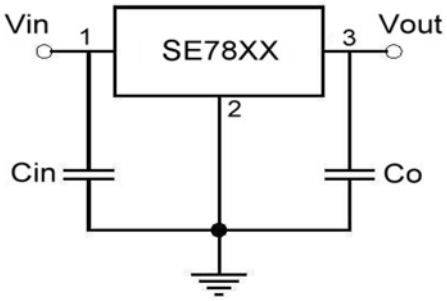


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	10.010	10.350	I	4.980	5.180
B	3.735	3.935	J	3.560	3.960
C	2.590	2.890	K	4.470	4.670
D	12.060	12.460	L	1.200	1.400
E	1.170	1.370	M	8.500	8.900
F	0.710	0.910	N	2.520	2.820
G	13.400	13.800	Q	0.330	0.650
H	2.540 TYP.				

FEATURES

- Internal Short-Circuit Current Limiting
- -5V, -6V, -8V, -9V, -10V, -12V Output Voltage Available
- No External Components Required
- Wide Range Of Available, Fixed Output Voltage
- Internal Thermal Overload Protection

TYPICAL APPLICATION



MAXIMUM RATINGS

Parameter		Symbol	Ratings	Unit
Input Voltage	5V~12V	V_{IN}	35	V
Output Current		I_O	1.5	A
Operating Junction Temperature Range		T_J	0~125	°C
Storage Temperature Range		T_{STG}	-55~150	
Thermal Resistance Junction-Air		$R_{\theta JA}$	65	°C / W
Thermal Resistance Junction-Cases		$R_{\theta JC}$	5	°C / W

SE7805 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T_J=0~125°C, I_O=500mA, V_{IN}=10V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	V_{IN}=10V, I_O=500mA, T_J=25°C	4.8	5	5.2	V
	7.5V≦V_{IN}≦20V, 5mA≦I_O≦1A, P_D≦15W	4.75	5	5.25	
ΔV_O (Line Regulation)	7V≦V_{IN}≦25V, T_J=25°C	-	4	100	mV
	8V≦V_{IN}≦12V, T_J=25°C	-	1.6	50	
ΔV_O (Load Regulation)	5mA≦I_O≦1.5A, T_J=25°C	-	9	100	mV
	250mA≦I_O≦750mA, T_J=25°C	-	4	50	
I_Q	T_J =25°C	-	5	8	mA
ΔI_Q	5mA≦I_O≦1A	-	0.03	0.5	mA
	7V≦V_{IN}≦25V	-	0.3	1.3	
V_N	10Hz≦f≦100KHz, T_J=25°C	-	42	-	μV
RR	8V≦V_{IN}≦18V, f=120Hz	62	73	-	dB
V_D	Io=1A, T_J=25°C	-	2	-	V
I_{SC}	T_J=25°C	-	230	-	mA
I_{pk}	T_J=25°C	-	2.2	-	A
ΔV_O / ΔTj	I_O=5mA	-	-1.1	-	mV / °C

SE7806 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T_J =0~125°C, I_O=500mA, V_{IN}=11V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	V_{IN}=11V, I_O=500mA, T_J=25°C	5.75	6	6.25	V
	8V≦V_{IN}≦21V, 5mA≦I_O≦1A, P_D≦15W	5.7	6	6.3	
ΔV_O (Line Regulation)	8V≦V_{IN}≦25V, T_J=25°C	-	5	120	mV
	9V≦V_{IN}≦13V, T_J=25°C	-	1.5	60	
ΔV_O (Load Regulation)	5mA≦I_O≦1.5A, T_J=25°C	-	14	120	mV
	250mA≦I_O≦750mA, T_J=25°C	-	4	60	
I_Q	T_J=25°C	-	4.3	8	mA
ΔI_Q	5mA≦I_O≦1A	-	-	0.5	mA
	8V≦V_{IN}≦25V	-	-	1.3	
V_N	10Hz≦f≦100KHz, T_J=25°C	-	45	-	μV
RR	9V≦V_{IN}≦19V, f=120Hz	59	75	-	dB
V_D	Io=1A, T_J=25°C	-	2	-	V
I_{SC}	T_J=25°C	-	550	-	mA
I_{pk}	T_J=25°C	-	2.2	-	A
ΔV_O / ΔTj	I_O=5mA	-	-0.8	-	mV / °C

SE7808 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T_J =0~125°C, I_O=500mA, V_{IN}=14V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	V_{IN}=14V, I_O=500mA, T_J=25°C	7.7	8	8.3	V
	10.5V≦V_{IN}≦23V, 5mA≦I_O≦1A, P_D≦15W	7.6	8	8.4	
ΔV_O (Line Regulation)	10.5V≦V_{IN}≦25V, T_J=25°C	-	6	160	mV
	11V≦V_{IN}≦17V, T_J=25°C	-	2	80	
ΔV_O (Load Regulation)	5mA≦I_O≦1.5A, T_J=25°C	-	12	160	mV
	250mA≦I_O≦750mA, T_J=25°C	-	4	80	
I_Q	T_J=25°C	-	4.3	8.0	mA
ΔI_Q	5mA≦I_O≦1A	-	-	0.5	mA
	10.5V≦V_{IN}≦25V	-	-	1	
V_N	10Hz≦f≦100KHz, T_J=25°C	-	52	-	μV
RR	11.5V≦V_{IN}≦21.5V, f=120Hz	55	72	-	dB
V_D	Io=1A, T_J=25°C	-	2	-	V
I_{SC}	T_J=25°C	-	450	-	mA
I_{pk}	T_J=25°C	-	2.2	-	A
ΔV_O / ΔTj	I_O=5mA	-	-0.8	-	mV / °C

SE7809 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T_J =0~125°C, I_O=500mA, V_{IN}=16V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	V_{IN}=16V, I_O=500mA, T_J=25°C	8.65	9	9.35	V
	11.5V≦V_{IN}≦24V, 5mA≦I_O≦1A, P_D≦15W	8.55	9	9.45	
ΔV_O (Line Regulation)	11.5V≦V_{IN}≦27V, T_J=25°C	-	7	180	mV
	13V≦V_{IN}≦19V, T_J=25°C	-	2	90	
ΔV_O (Load Regulation)	5mA≦I_O≦1.5A, T_J=25°C	-	12	180	mV
	250mA≦I_O≦750mA, T_J=25°C	-	4	90	
I_Q	T_J=25°C	-	4.3	8.0	mA
ΔI_Q	5mA≦I_O≦1A	-	-	0.5	mA
	11.5V≦V_{IN}≦27V	-	-	1	
V_N	10Hz≦f≦100KHz, T_J=25°C	-	60	-	μV
RR	12V≦V_{IN}≦22V, f=120Hz	55	70	-	dB
V_D	Io=1A, T_J=25°C	-	2	-	V
I_{SC}	T_J=25°C	-	400	-	mA
I_{pk}	T_J=25°C	-	2.2	-	A
ΔV_O / ΔTj	I_O=5mA	-	-1	-	mV / °C

SE7810 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T_J =0~125°C, I_O=500mA, V_{IN}=17V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

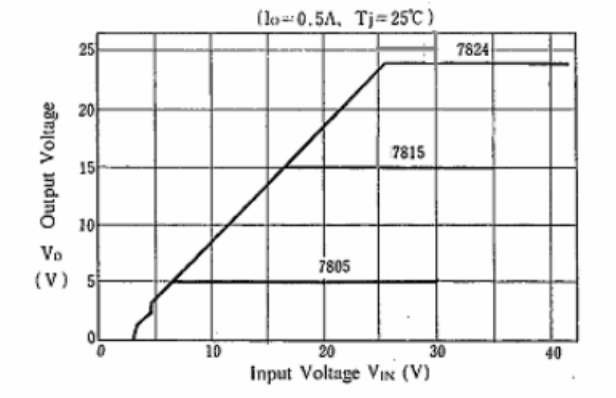
Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	V_{IN}=17V, I_O=500mA, T_J=25°C	9.6	10	10.4	V
	12.5V≦V_{IN}≦25V, 5mA≦I_O≦1A, P_D≦15W	9.5	10	10.5	
ΔV_O (Line Regulation)	12.5V≦V_{IN}≦28V, T_J=25°C	-	7	200	mV
	14V≦V_{IN}≦20V, T_J=25°C	-	2	100	
ΔV_O (Load Regulation)	5mA≦I_O≦1.5A, T_J=25°C	-	12	200	mV
	250mA≦I_O≦750mA, T_J=25°C	-	4	100	
I_Q	T_J=25°C	-	4.3	8	mA
ΔI_Q	5mA≦I_O≦1A	-	-	0.5	mA
	12.5V≦V_{IN}≦28V	-	-	1	
V_N	10Hz≦f≦100KHz, T_J=25°C	-	70	-	μV
RR	13V≦V_{IN}≦23V, f=120Hz	55	71	-	dB
V_D	Io=1A	-	2	-	V
I_{SC}	T_J=25°C	-	400	-	mA
I_{pk}	T_J=25°C	-	2.2	-	A
ΔV_O / ΔTj	I_O=5mA	-	-1	-	mV / °C

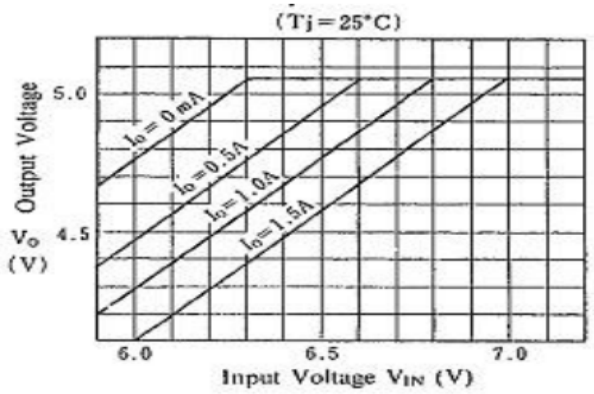
SE7812 ELECTRICAL CHARACTERISTICS

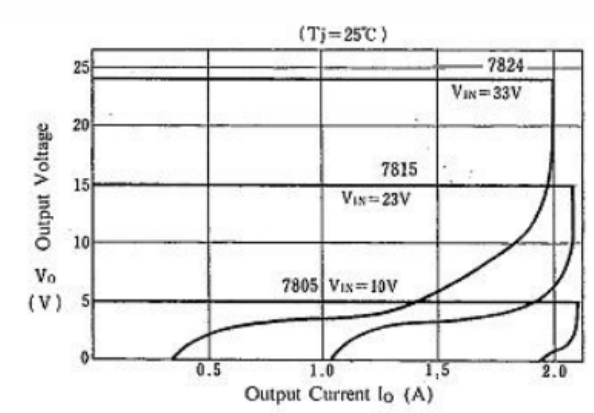
(Refer to the test circuits, T_J =0~125 °C, I_O=500mA, V_{IN}=19V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

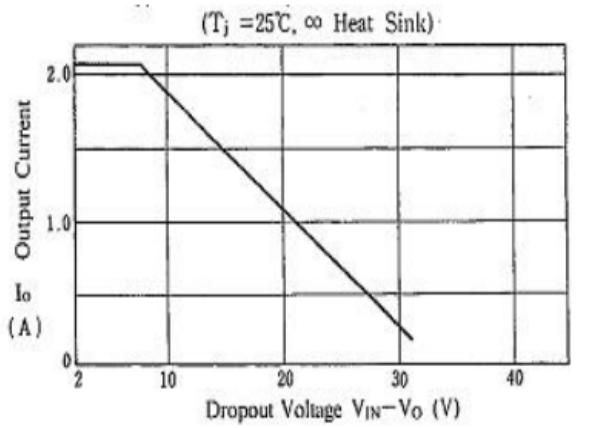
Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	V_{IN}=19V, I_O=500mA, T_J=25°C	11.5	12	12.5	V
	14.5V≦V_{IN}≦27V, 5mA≦I_O≦1A, P_D≦15W	11.4	12	12.6	
ΔV_O (Line Regulation)	14.5V≦V_{IN}≦30V, T_J=25°C	-	10	240	mV
	16V≦V_{IN}≦22V, T_J=25°C	-	3	120	
ΔV_O (Load Regulation)	5mA≦I_O≦1A, T_J=25°C	-	12	240	mV
	250mA≦I_O≦750mA, T_J=25°C	-	4	120	
I_Q	T_J=25°C	-	4.3	8	mA
ΔI_Q	5mA≦I_O≦1A	-	-	0.5	mA
	14.5V≦V_{IN}≦30V, I_O=500mA	-	-	1	
V_N	10Hz≦f≦100KHz, T_J=25°C	-	75	-	μV
RR	15V≦V_{IN}≦25V, f=120Hz	55	71	-	dB
V_D	Io=1A, T_J=25°C	-	2	-	V
I_{SC}	T_J=25°C	-	350	-	mA
I_{pk}	T_J=25°C	-	2.2	-	A
ΔV_O / ΔTj	I_O=5mA	-	-1	-	mV / °C

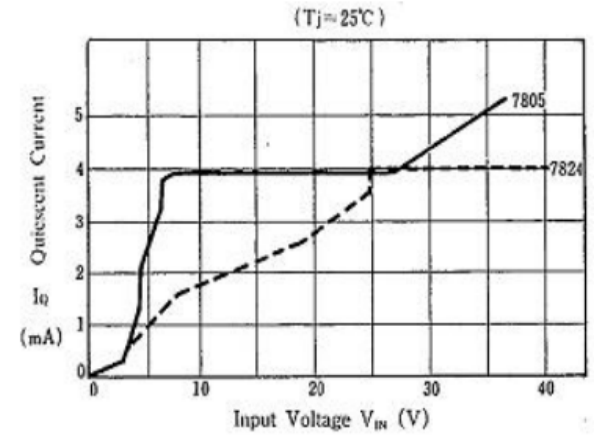
CHARACTERISTICS CURVE

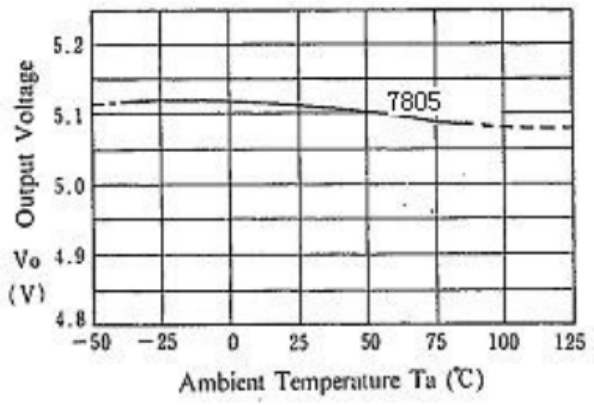












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