

Three-Terminal 1.5A Positive Voltage Regulator

1 Description and Characteristics

The D78XX of three-terminal positive regulator is available in TO-252 package making it useful in a wide range of applications.

2 Feature

- Output current to 1.5A
- Output voltage of 5V, 6V, 8V, 9V, 10V, 12V, 15V, 18V, 24V
- Thermal overload protection
- Short current protection
- Output Transistor Safe protection
- Package: TO-252(DPAK), pin configuration: I G O
- Compliant with the RoHS standard



3 Electric Characteristics

3.1 Absolute maximum ratings

$T_c=25^{\circ}\text{C}$ (unless otherwise specified)

Parameter	Symbol	Rating	Unit
DC Input Voltage	V_i	$V_o=5\text{V}-18\text{V}$	35
		$V_o=24\text{V}$	40
Output Current	I_o	1.5	A
Thermal resistance junction-air	$R_{\theta JA}$	87	$^{\circ}\text{C}/\text{W}$
Thermal resistance junction-cases	$R_{\theta JC}$	6.7	$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature Range	T_{opr}	0~125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-65~150	$^{\circ}\text{C}$

3.2 Electrical characteristics

D7805 electrical characteristics

(Refer to test circuits, $0 < T_j < 125^{\circ}\text{C}$, $I_o=500\text{mA}$, $V_i=10\text{V}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Testing conditions	Min	Typ	Max	Units
Output voltage	V_o^*	$T_j=25^{\circ}\text{C}$, $V_i=10\text{V}$	4.9	5.0	5.1	V
Output voltage	V_o	$5.0\text{mA} < I_o < 1.0\text{A}$, $P_o < 12\text{W}$	4.9	5.0	5.1	V
Line regulation	ΔV_o	$T_j=25^{\circ}\text{C}$, $I_o=500\text{mA}$	$V_i=7.5\text{V} \sim 25\text{V}$		100	mV
			$V_i=8\text{V} \sim 12\text{V}$		50	
Load regulation	ΔV_o	$T_j=25^{\circ}\text{C}$, $V_i=10\text{V}$	$I_o=5\text{mA} \sim 1.5\text{A}$		100	mV
			$I_o=250\text{mA} \sim 750\text{mA}$		50	
Quiescent current	I_q	$T_j=25^{\circ}\text{C}$		5	8	mA
Quiescent current change	ΔI_q	$T_j=25^{\circ}\text{C}$, $V_i=10\text{V}$, $I_o=5\text{mA} \sim 1.0\text{A}$			0.5	mA
		$T_j=25^{\circ}\text{C}$, $I_o=0.5\text{A}$, $V_i=8\text{V} \sim 25\text{V}$			0.8	
Output voltage drift	$\Delta V_o/\Delta T$	$I_o=5\text{mA}$, $T_j=0 \sim 125^{\circ}\text{C}$		0.8		$\text{mV}/^{\circ}\text{C}$
Output noise voltage	V_N	$f=10\text{Hz} \sim 100\text{KHz}$, $T_a=25^{\circ}\text{C}$		42		$\mu\text{V}/V_o$
Supply voltage rejection	SVR	$f=120\text{Hz}$, $V_i=8\text{V} \sim 18\text{V}$	62	73		dB
Dropout voltage	V_D	$I_o=1.0\text{A}$, $T_j=25^{\circ}\text{C}$		2		V
Output resistance	R_o	$f=1\text{KHz}$		15		$\text{m}\Omega$
Short circuit current	I_{sc}	$V_i=35\text{V}$, $T_a=25^{\circ}\text{C}$		230		mA
Short circuit peak current	I_{PK}	$T_j=25^{\circ}\text{C}$		2.2		A

* V_o Grading: $\pm 1\%$, $\pm 2\%$

D7806 electrical characteristics

 (Refer to test circuits, $0 < T_j < 125^\circ\text{C}$, $I_o = 500\text{mA}$, $V_i = 11\text{V}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Testing conditions	Min	Typ	Max	Units
Output voltage	V_o^*	$T_j = 25^\circ\text{C}$, $V_i = 11\text{V}$	5.88	6.0	6.12	V
Output voltage	V_o	$5.0\text{mA} < I_o < 1.0\text{A}$, $P_o < 12\text{W}$ $V_i = 8.5\text{V} \sim 21\text{V}$	5.88	6.0	6.12	V
Line regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $I_o = 500\text{mA}$	$V_i = 8.5\text{V} \sim 25\text{V}$		120	mV
			$V_i = 9\text{V} \sim 13\text{V}$		60	
Load regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $V_i = 11\text{V}$	$I_o = 5\text{mA} \sim 1.5\text{A}$		120	mV
			$I_o = 250\text{mA} \sim 750\text{mA}$		60	
Quiescent current	I_q	$T_j = 25^\circ\text{C}$			8	mA
Quiescent current change	ΔI_q	$T_j = 25^\circ\text{C}$, $V_i = 11\text{V}$, $I_o = 5\text{mA} \sim 1.0\text{A}$ $T_j = 25^\circ\text{C}$, $I_o = 0.5\text{A}$, $V_i = 9\text{V} \sim 25\text{V}$			0.5	mA
					0.8	
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$		0.8		mV/ $^\circ\text{C}$
Output noise voltage	V_N	$f = 10\text{Hz} \sim 100\text{KHz}$, $T_a = 25^\circ\text{C}$		45		$\mu\text{V}/V_o$
Supply voltage rejection	RR	$f = 120\text{Hz}$, $V_i = 9\text{V} \sim 19\text{V}$	59	75		dB
Dropout voltage	V_D	$I_o = 1.0\text{A}$, $T_j = 25^\circ\text{C}$		2		V
Output resistance	R_o	$f = 1\text{KHz}$		19		m Ω
Short circuit current	I_{SC}	$V_i = 35\text{V}$, $T_a = 25^\circ\text{C}$		230		mA
Short circuit peak current	I_{PK}	$T_j = 25^\circ\text{C}$		2.2		A

 * V_o Grading: $\pm 1\%$, $\pm 2\%$
D7808 electrical characteristics

 (Refer to test circuits, $0 < T_j < 125^\circ\text{C}$, $I_o = 500\text{mA}$, $V_i = 14\text{V}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Testing conditions	Min	Typ	Max	Units
Output Voltage	V_o^*	$T_j = 25^\circ\text{C}$, $V_i = 14\text{V}$	7.84	8.0	8.16	V
Output Voltage	V_o	$5.0\text{mA} < I_o < 1.0\text{A}$, $P_o < 12\text{W}$ $V_i = 11\text{V} \sim 23\text{V}$	7.84	8.0	8.16	V
Line Regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $I_o = 500\text{mA}$	$V_i = 10.5\text{V} \sim 25\text{V}$		160	mV
			$V_i = 11\text{V} \sim 17\text{V}$		80	
Load Regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $V_i = 14\text{V}$	$I_o = 5\text{mA} \sim 1.5\text{A}$		160	mV
			$I_o = 250\text{mA} \sim 750\text{mA}$		80	
Quiescent Current	I_q	$T_j = 25^\circ\text{C}$			8	mA
Quiescent Current Change	ΔI_q	$T_j = 25^\circ\text{C}$, $V_i = 14\text{V}$, $I_o = 5\text{mA} \sim 1.0\text{A}$ $T_j = 25^\circ\text{C}$, $I_o = 0.5\text{A}$, $V_i = 11\text{V} \sim 25\text{V}$			0.5	mA
					0.8	
Output Voltage Drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$, $T_j = 0 \sim 125^\circ\text{C}$		0.8		mV/ $^\circ\text{C}$
Output Noise Voltage	V_N	$f = 10\text{Hz} \sim 100\text{KHz}$, $T_a = 25^\circ\text{C}$		52		μV
Supply Voltage Rejection	SVR	$f = 120\text{Hz}$, $V_i = 11.5\text{V} \sim 21.5\text{V}$	56	73		dB
Dropout Voltage	V_D	$I_o = 1.0\text{A}$, $T_j = 25^\circ\text{C}$		2		V
Output Resistance	R_o	$f = 1\text{KHz}$		17		m Ω
Short Circuit Current	I_{SC}	$V_i = 35\text{V}$, $T_a = 25^\circ\text{C}$		230		mA
Short Circuit Peak Current	I_{PK}	$T_j = 25^\circ\text{C}$		2.2		A

 * V_o Grading: $\pm 1\%$, $\pm 2\%$

D7809 electrical characteristics

 (Refer to test circuits, $0 < T_j < 125^\circ\text{C}$, $I_o = 500\text{mA}$, $V_i = 15\text{V}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Testing conditions	Min	Typ	Max	Units
Output voltage	V_o^*	$T_j = 25^\circ\text{C}$, $V_i = 15\text{V}$	8.82	9.0	9.18	V
Output voltage	V_o	$5.0\text{mA} < I_o < 1.0\text{A}$, $P_o < 12\text{W}$ $V_i = 11.5\text{V} \sim 24\text{V}$	8.82	9.0	9.18	V
Line regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $I_o = 500\text{mA}$	$V_i = 11.5\text{V} \sim 25\text{V}$		180	mV
			$V_i = 12\text{V} \sim 19\text{V}$		90	
Load regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $V_i = 15\text{V}$	$I_o = 5\text{mA} \sim 1.5\text{A}$		180	mV
			$I_o = 250\text{mA} \sim 750\text{mA}$		90	
Quiescent current	I_q	$T_j = 25^\circ\text{C}$			8	mA
Quiescent current change	ΔI_q	$T_j = 25^\circ\text{C}$, $V_i = 15\text{V}$, $I_o = 5\text{mA} \sim 1.0\text{A}$			0.5	mA
		$T_j = 25^\circ\text{C}$, $I_o = 0.5\text{A}$, $V_i = 12\text{V} \sim 26\text{V}$			0.8	
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$, $T_j = 0 \sim 125^\circ\text{C}$		1.0		mV/ $^\circ\text{C}$
Output noise voltage	V_N	$f = 10\text{Hz} \sim 100\text{KHz}$, $T_a = 25^\circ\text{C}$		58		$\mu\text{V}/V_o$
Supply voltage rejection	SVR	$f = 120\text{Hz}$, $V_i = 13\text{V} \sim 23\text{V}$	56	71		dB
Dropout voltage	V_D	$I_o = 1.0\text{A}$, $T_j = 25^\circ\text{C}$		2		V
Output resistance	R_o	$f = 1\text{KHz}$		15		m Ω
Short circuit current	I_{SC}	$V_i = 35\text{V}$, $T_a = 25^\circ\text{C}$		230		mA
Short circuit peak current	I_{PK}	$T_j = 25^\circ\text{C}$		2.2		A

 * V_o Grading: $\pm 1\%$, $\pm 2\%$
D7810 electrical characteristics

 (Refer to test circuits, $0 < T_j < 125^\circ\text{C}$, $I_o = 500\text{mA}$, $V_i = 16\text{V}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Testing conditions	Min	Typ	Max	Units
Output voltage	V_o^*	$T_j = 25^\circ\text{C}$, $V_i = 16\text{V}$	9.8	10.0	10.2	V
Output voltage	V_o	$5.0\text{mA} < I_o < 1.0\text{A}$, $P_o < 12\text{W}$ $V_i = 12.5\text{V} \sim 25\text{V}$	9.8	10.0	10.2	V
Line regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $I_o = 500\text{mA}$	$V_i = 12.5\text{V} \sim 25\text{V}$		200	mV
			$V_i = 13\text{V} \sim 20\text{V}$		100	
Load regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $V_i = 16\text{V}$	$I_o = 5\text{mA} \sim 1.5\text{A}$		200	mV
			$I_o = 250\text{mA} \sim 750\text{mA}$		100	
Quiescent current	I_q	$T_j = 25^\circ\text{C}$			8	mA
Quiescent current change	ΔI_q	$T_j = 25^\circ\text{C}$, $V_i = 16\text{V}$, $I_o = 5\text{mA} \sim 1.0\text{A}$			0.5	mA
		$T_j = 25^\circ\text{C}$, $I_o = 0.5\text{A}$, $V_i = 13\text{V} \sim 29\text{V}$			0.8	
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$, $T_j = 0 \sim 125^\circ\text{C}$		1.0		mV/ $^\circ\text{C}$
Output noise voltage	V_N	$f = 10\text{Hz} \sim 100\text{KHz}$, $T_a = 25^\circ\text{C}$		58		$\mu\text{V}/V_o$
Supply voltage rejection	SVR	$f = 120\text{Hz}$, $V_i = 14\text{V} \sim 24\text{V}$	56	71		dB
Dropout voltage	V_D	$I_o = 1.0\text{A}$, $T_j = 25^\circ\text{C}$		2		V
Output resistance	R_o	$f = 1\text{KHz}$		17		m Ω
Short circuit current	I_{SC}	$V_i = 35\text{V}$, $T_a = 25^\circ\text{C}$		230		mA
Short circuit peak current	I_{PK}	$T_j = 25^\circ\text{C}$		2.2		A

 * V_o Grading: $\pm 1\%$, $\pm 2\%$

D7812 electrical characteristics

 (Refer to test circuits, $0 < T_j < 125^\circ\text{C}$, $I_o = 500\text{mA}$, $V_i = 19\text{V}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Testing conditions	Min	Typ	Max	Units
Output voltage	V_o^*	$T_j = 25^\circ\text{C}$, $V_i = 19\text{V}$	11.76	12.0	12.24	V
Output voltage	V_o	$5.0\text{mA} < I_o < 1.0\text{A}$, $P_o < 12\text{W}$ $V_i = 14.5\text{V} \sim 27\text{V}$	11.76	12.0	12.24	V
Line regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $I_o = 500\text{mA}$	$V_i = 14.5\text{V} \sim 30\text{V}$		240	mV
			$V_i = 16\text{V} \sim 22\text{V}$		120	
Load regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $V_i = 19\text{V}$	$I_o = 5\text{mA} \sim 1.5\text{A}$		240	mV
			$I_o = 250\text{mA} \sim 750\text{mA}$		120	
Quiescent current	I_q	$T_j = 25^\circ\text{C}$			8	mA
Quiescent current change	ΔI_q	$T_j = 25^\circ\text{C}$, $V_i = 19\text{V}$, $I_o = 5\text{mA} \sim 1.0\text{A}$			0.5	mA
		$T_j = 25^\circ\text{C}$, $I_o = 0.5\text{A}$, $V_i = 15\text{V} \sim 30\text{V}$			0.8	
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$, $T_j = 0 \sim 125^\circ\text{C}$		1.0		mV/ $^\circ\text{C}$
Output noise voltage	V_N	$f = 10\text{Hz} \sim 100\text{KHz}$, $T_a = 25^\circ\text{C}$		76		$\mu\text{V}/V_o$
Supply voltage rejection	SVR	$f = 120\text{Hz}$, $V_i = 15\text{V} \sim 25\text{V}$	55	71		dB
Dropout voltage	V_D	$I_o = 1.0\text{A}$, $T_j = 25^\circ\text{C}$		2		V
Output resistance	R_o	$f = 1\text{KHz}$		18		m Ω
Short circuit current	I_{SC}	$V_i = 35\text{V}$, $T_a = 25^\circ\text{C}$		230		mA
Short circuit peak current	I_{PK}	$T_j = 25^\circ\text{C}$		2.2		A

 * V_o Grading: $\pm 1\%$, $\pm 2\%$
D7815 electrical characteristics

 (Refer to test circuits, $0 < T_j < 125^\circ\text{C}$, $I_o = 500\text{mA}$, $V_i = 23\text{V}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Testing conditions	Min	Typ	Max	Units
Output voltage	V_o^*	$T_j = 25^\circ\text{C}$, $V_i = 23\text{V}$	14.7	15.0	15.3	V
Output voltage	V_o	$5.0\text{mA} < I_o < 1.0\text{A}$, $P_o < 12\text{W}$ $V_i = 17.5\text{V} \sim 30\text{V}$	14.7	15.0	15.3	V
Line regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $I_o = 500\text{mA}$	$V_i = 17.5\text{V} \sim 30\text{V}$		300	mV
			$V_i = 20\text{V} \sim 26\text{V}$		150	
Load regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $V_i = 23\text{V}$	$I_o = 5\text{mA} \sim 1.5\text{A}$		300	mV
			$I_o = 250\text{mA} \sim 750\text{mA}$		150	
Quiescent current	I_q	$T_j = 25^\circ\text{C}$			8	mA
Quiescent current change	ΔI_q	$T_j = 25^\circ\text{C}$, $V_i = 23\text{V}$, $I_o = 5\text{mA} \sim 1.0\text{A}$			0.5	mA
		$T_j = 25^\circ\text{C}$, $I_o = 0.5\text{A}$, $V_i = 18.5\text{V} \sim 30\text{V}$			0.8	
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$, $T_j = 0 \sim 125^\circ\text{C}$		1.0		mV/ $^\circ\text{C}$
Output noise voltage	V_N	$f = 10\text{Hz} \sim 100\text{KHz}$, $T_a = 25^\circ\text{C}$		90		$\mu\text{V}/V_o$
Supply voltage rejection	SVR	$f = 120\text{Hz}$, $V_i = 18.5\text{V} \sim 28.5\text{V}$	54	70		dB
Dropout voltage	V_D	$I_o = 1.0\text{A}$, $T_j = 25^\circ\text{C}$		2		V
Output resistance	R_o	$f = 1\text{KHz}$		19		m Ω
Short circuit current	I_{SC}	$V_i = 35\text{V}$, $T_a = 25^\circ\text{C}$		230		mA
Short circuit peak current	I_{PK}	$T_j = 25^\circ\text{C}$		2.2		A

 * V_o Grading: $\pm 1\%$, $\pm 2\%$

D7818 electrical characteristics

 (Refer to test circuits, $0 < T_j < 125^\circ\text{C}$, $I_o = 500\text{mA}$, $V_i = 26\text{V}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Testing conditions	Min	Typ	Max	Units
Output voltage	V_o^*	$T_j = 25^\circ\text{C}$, $V_i = 26\text{V}$	18.64	18	18.36	V
Output voltage	V_o	$5.0\text{mA} < I_o < 1.0\text{A}$, $P_o < 12\text{W}$ $V_i = 21\text{V} \sim 33\text{V}$	18.64	18	18.36	V
Line regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $I_o = 500\text{mA}$	$V_i = 21\text{V} \sim 33\text{V}$		360	mV
			$V_i = 24\text{V} \sim 30\text{V}$		180	
Load regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $V_i = 26\text{V}$	$I_o = 5\text{mA} \sim 1.5\text{A}$		360	mV
			$I_o = 250\text{mA} \sim 750\text{mA}$		180	
Quiescent current	I_q	$T_j = 25^\circ\text{C}$			8	mA
Quiescent current change	ΔI_q	$T_j = 25^\circ\text{C}$, $V_i = 26\text{V}$, $I_o = 5\text{mA} \sim 1.0\text{A}$			0.5	mA
		$T_j = 25^\circ\text{C}$, $I_o = 0.5\text{A}$, $V_i = 21\text{V} \sim 32\text{V}$			0.8	
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$, $T_j = 0 \sim 125^\circ\text{C}$		1.2		mV/ $^\circ\text{C}$
Output noise voltage	V_N	$f = 10\text{Hz} \sim 100\text{KHz}$, $T_a = 25^\circ\text{C}$		110		$\mu\text{V}/V_o$
Supply voltage rejection	SVR	$f = 120\text{Hz}$, $V_i = 22\text{V} \sim 32\text{V}$	53	69		dB
Dropout voltage	V_D	$I_o = 1.0\text{A}$, $T_j = 25^\circ\text{C}$		2		V
Output resistance	R_o	$f = 1\text{KHz}$		22		m Ω
Short circuit current	I_{SC}	$V_i = 35\text{V}$, $T_a = 25^\circ\text{C}$		230		mA
Short circuit peak current	I_{PK}	$T_j = 25^\circ\text{C}$		2.2		A

 * V_o Grading: $\pm 1\%$, $\pm 2\%$
D7824 electrical characteristics

 (Refer to test circuits, $0 < T_j < 125^\circ\text{C}$, $I_o = 500\text{mA}$, $V_i = 33\text{V}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Testing conditions	Min	Typ	Max	Units
Output voltage	V_o^*	$T_j = 25^\circ\text{C}$, $V_i = 33\text{V}$	23.52	24	24.48	V
Output voltage	V_o	$5.0\text{mA} < I_o < 1.0\text{A}$, $P_o < 12\text{W}$ $V_i = 27\text{V} \sim 38\text{V}$	23.52	24	24.48	V
Line regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $I_o = 500\text{mA}$	$V_i = 27\text{V} \sim 38\text{V}$		480	mV
			$V_i = 30\text{V} \sim 36\text{V}$		240	
Load regulation	ΔV_o	$T_j = 25^\circ\text{C}$, $V_i = 33\text{V}$	$I_o = 5\text{mA} \sim 1.5\text{A}$		480	mV
			$I_o = 250\text{mA} \sim 750\text{mA}$		240	
Quiescent current	I_q	$T_j = 25^\circ\text{C}$			8	mA
Quiescent current change	ΔI_q	$T_j = 25^\circ\text{C}$, $V_i = 33\text{V}$, $I_o = 5\text{mA} \sim 1.0\text{A}$			0.5	mA
		$T_j = 25^\circ\text{C}$, $I_o = 0.5\text{A}$, $V_i = 27\text{V} \sim 38\text{V}$			0.8	
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$, $T_j = 0 \sim 125^\circ\text{C}$		1.5		mV/ $^\circ\text{C}$
Output noise voltage	V_N	$f = 10\text{Hz} \sim 100\text{KHz}$, $T_a = 25^\circ\text{C}$		160		$\mu\text{V}/V_o$
Supply voltage rejection	SVR	$f = 120\text{Hz}$, $V_i = 28\text{V} \sim 38\text{V}$	50	67		dB
Dropout voltage	V_D	$I_o = 1.0\text{A}$, $T_j = 25^\circ\text{C}$		2		V
Output resistance	R_o	$f = 1\text{KHz}$		28		m Ω
Short circuit current	I_{SC}	$V_i = 40\text{V}$, $T_a = 25^\circ\text{C}$		230		mA
Short circuit peak current	I_{PK}	$T_j = 25^\circ\text{C}$		2.2		A

 * V_o Grading: $\pm 1\%$, $\pm 2\%$

4 Test Circuits

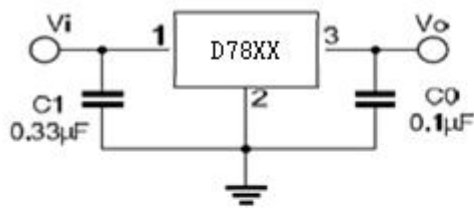


FIG.1 DC PARAMETERS

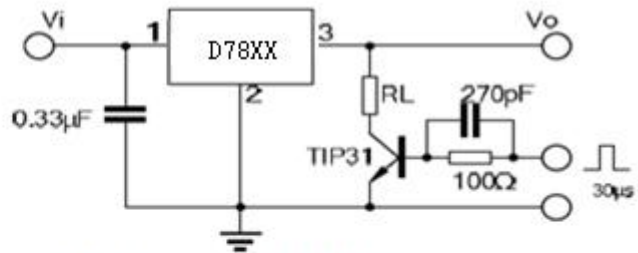


FIG.2 LOAD REGULATION

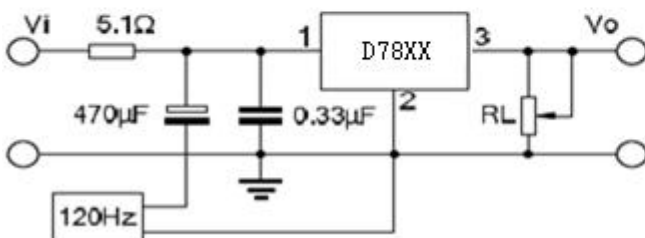


FIG.3 RIPPLE REJECTION

5 Application Circuits

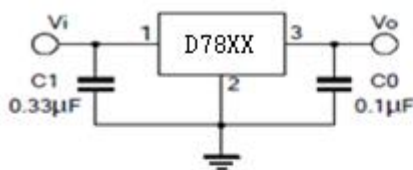


Fig.4 Fixed output regulator

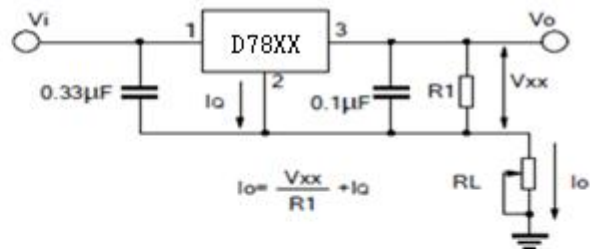


Fig.5 Constant current regulator

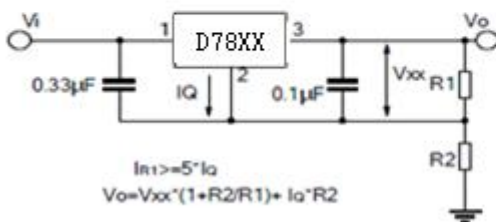


Fig.6 Circuit for increasing Regulator output voltage

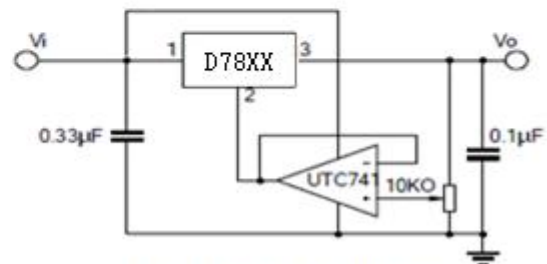


Fig.7 Adjustable output

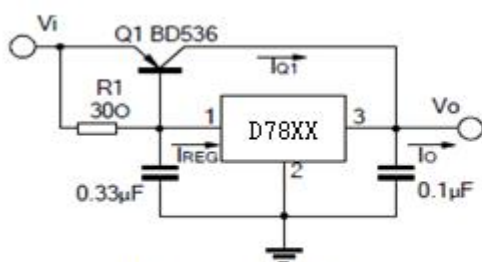


Fig.8 High current with voltage regulator

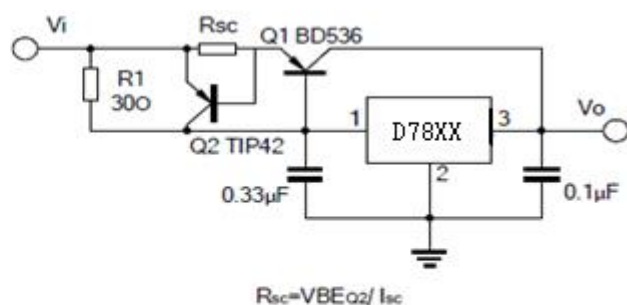


Fig.9 High output current short circuit protection

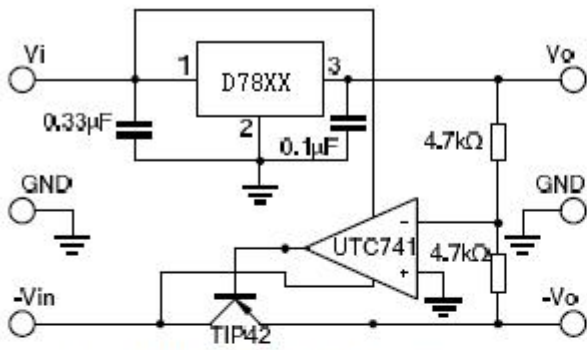


Fig. 10 Tracking voltage regulator

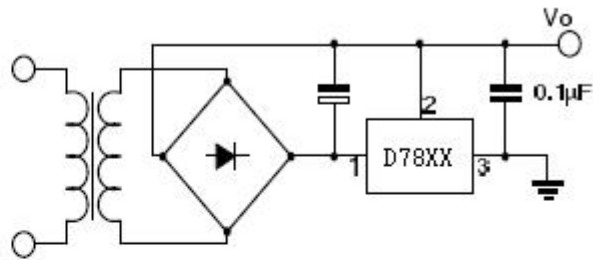


Fig. 11 Negative output voltage circuit

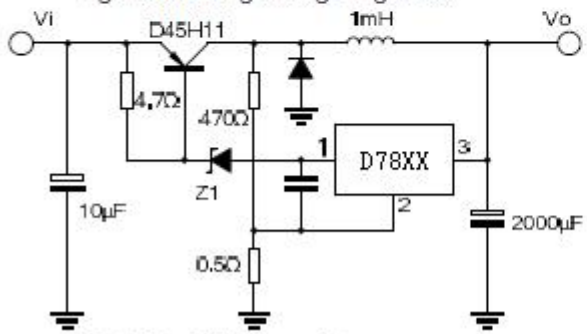


Fig. 12 Switching regulator

6 Typical Performance Characteristics

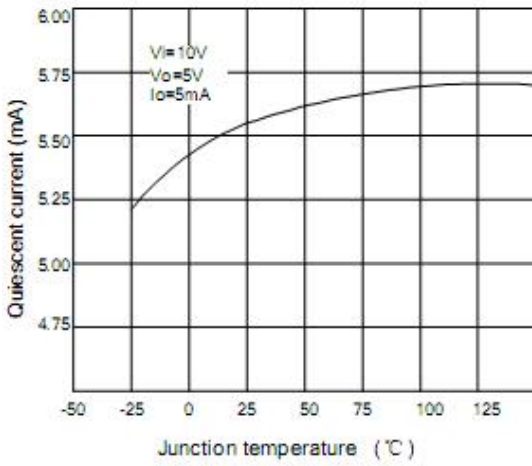


Figure 1 Quiescent current

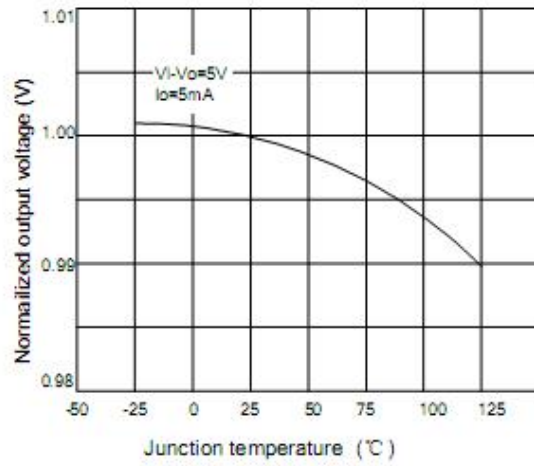


Figure 2 Output voltage

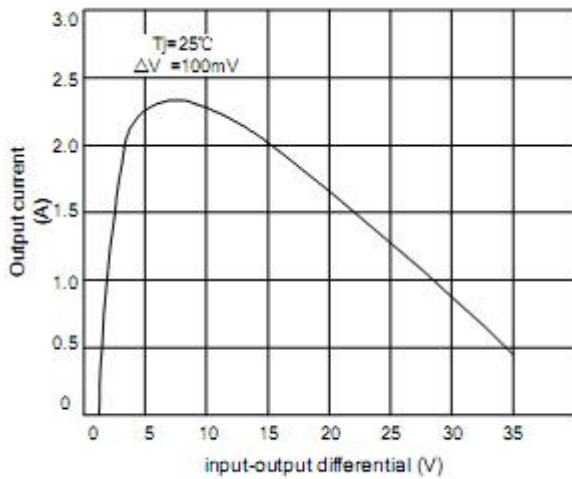


Figure 3 Peak output current

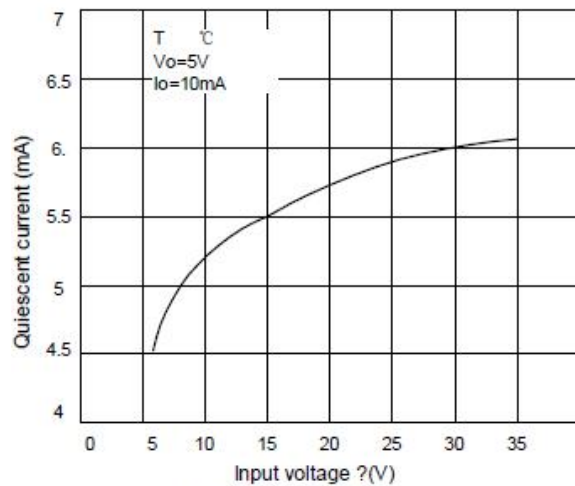
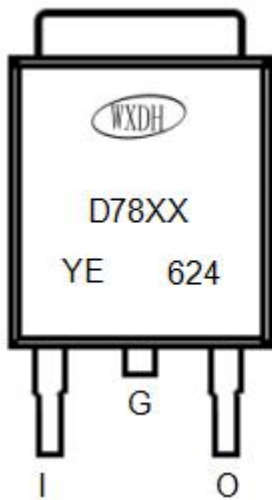



Fig. 4 Quiescent current

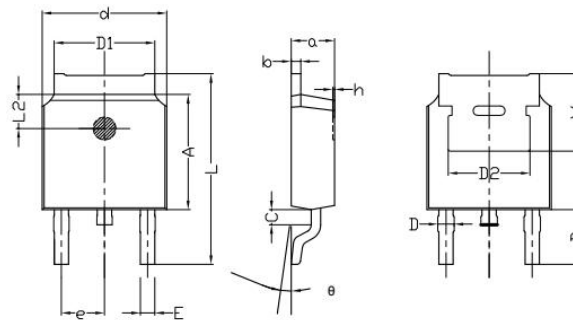
7 Marking



- NO.1: LOGO 
- NO.2: Part Number D78XX
- NO.3 Left: YE Production identification code
- NO.3 Right: Assembly Week Code, 624 On behalf of 24th natural week 2016 year

8 Dimension

TO-252B PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	min.	max.	min.	max.
a	2.20	2.40	0.087	0.095
b	0.46	0.58	0.018	0.023
c	0.70	0.90	0.028	0.035
D	0.80	1.00	0.032	0.039
d	6.30	6.70	0.248	0.264
D1	5.00	5.50	0.197	0.217
D2	TYP 4.83		TYP 0.190	
A	5.80	6.20	0.228	0.244
e	2.19	2.39	0.086	0.094
L	9.40	10.40	0.370	0.409
B	2.6	3.2	0.102	0.126
L2	1.5	1.8	0.059	0.071
theta	0	8	0	8
h	0	0.3	0	0.012
V	5.25	5.85	0.207	0.230

9 Attentions

- ROUM Semiconductor Technology CO.,LTD. reserves the right to change the specification without prior notice! The customer should obtain the latest version of the information before making the order and verify that the information is complete and up to date.
- It is the responsibility of the purchaser for any failure or failure of any semiconductor product under certain conditions. It is the responsibility of the purchaser to comply with safety standards and to take safety measures in the system design and machine manufacturing of Roma products in order to avoid potential risk of failure. Injury or property damage.
- Product promotion is endless, our company will be dedicated to provide customers with better products.

10 Appendix

Revision history:

Date	REV.	Description	Page
2017.05.15	1.0	Original	