

LM78XX (KA78XX, MC78XX) FIXED VOLTAGE REGULATOR (POSITIVE)

ABSOLUTE MAXIMUM RATINGS (T_A = +25°C, unless otherwise specified)

Characteristic	Symbol	Value	Unit
Input Voltage (for V _O = 5V to 18V) (for V _O = 24V)	V _I	35	V
	V _I	40	V
Thermal Resistance Junction-Cases	R _{θJC}	5	°C/W
Thermal Resistance Junction-Air	R _{θJA}	65	°C/W
Operating Temperature Range KA78XX/A/R/RA KA78XXI/RI	T _{OPR}	0 ~ +125	°C
		-40 ~ +125	°C
Storage Temperature Range	T _{STG}	-65 ~ +150	°C

LM7805/I/R/RI ELECTRICAL CHARACTERISTICS

(Refer to test circuit, T_{MIN} < T_J < T_{MAX}, I_O = 500mA, V_I = 10V, C_I = 0.33μF, C_O = 0.1μF, unless otherwise specified)

Characteristic	Symbol	Test Conditions	LM7805I			LM7805			Unit
			Min	Typ	Max	Min	Typ	Max	
Output Voltage	V _O	T _J = +25°C	4.8	5.0	5.2	4.8	5.0	5.2	V
		5.0mA ≤ I _O ≤ 1.0A, P _O ≤ 15W V _I = 7V to 20V V _I = 8V to 20V	4.75	5.0	5.25	4.75	5.0	5.25	
Line Regulation	ΔV _O	T _J = +25°C	V _O = 7V to 25V	4.0	100		4.0	100	mV
			V _I = 8V to 12V	1.6	50		1.6	50	
Load Regulation	ΔV _O	T _J = +25°C	I _O = 5.0mA to 1.5A	9	100		9	100	mV
			I _O = 250mA to 750mA	4	50		4	50	
Quiescent Current	I _Q	T _J = +25°C		5.0	8		5.0	8	mA
Quiescent Current Change	ΔI _Q	I _O = 5mA to 1.0A		0.03	0.5		0.03	0.5	mA
			V _I = 7V to 25V				0.3	1.3	
			V _I = 8V to 25V		0.3	1.3			
Output Voltage Drift	ΔV _O /ΔT	I _O = 5mA		-0.8			-0.8		mV/°C
Output Noise Voltage	V _N	f = 10Hz to 100KHz, T _A = +25°C		42			42		μV/V _O
Ripple Rejection	RR	f = 120Hz V _O = 8 to 18V	62	73		62	73		dB
Dropout Voltage	V _O	I _O = 1A, T _J = +25°C		2			2		V
Output Resistance	R _O	f = 1KHz		15			15		mΩ
Short Circuit Current	I _{SC}	V _I = 35V, T _A = +25°C		230			230		mA
Peak Current	I _{PK}	T _J = +25°C		2.2			2.2		A

* T_{MIN} < T_J < T_{MAX}

LM78XXI/RI: T_{MIN} = -40°C, T_{MAX} = +125°C

LM78XX/R: T_{MIN} = 0°C, T_{MAX} = +125°C

* Load and line regulation are specified at constant junction temperature. Changes in V_O due to heating effects must be taken into account separately. Pulse testing with low duty is used.