

Electrical Characteristics

GI78L05 (Refer to the test circuits, Tj=0~125°C, Io=40mA, Vin=10V, Cin=0.33μF, Co=0.1μF unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	4.85	5.0	5.15	V	Vin=10V, Io=40mA, Tj=25°C 7V ≤ Vin ≤ 20V, 1mA ≤ Io ≤ 40mA 7V ≤ Vin ≤ Vmax, 1mA ≤ Io ≤ 70mA (Note2)
	B-Rank (5%)	4.75	-	5.25		
ΔVO (Line Regulation)		-	18	75	mV	7V ≤ Vin ≤ 20V, Io=40mA, Tj=25°C
		-	10	54		8V ≤ Vin ≤ 20V, Io=40mA, Tj=25°C
ΔVO (Load Regulation)		-	20	60	mV	Vin=10V, 1mA ≤ Io ≤ 100mA, Tj=25°C
		-	5	30		Vin=10V, 1mA ≤ Io ≤ 40mA, Tj=25°C
IQ		-	3.0	5.0	mA	Vin=10V, Io=0mA, Tj=25°C
Δ IQ		-	-	0.1	mA	Vin=10V, 1mA ≤ Io ≤ 40mA
		-	-	1.0		8V ≤ Vin ≤ 20V, Io=40mA
Vn		-	40	-	μV	10Hz ≤ f ≤ 100KHz
RR		47	62	-	dB	8V ≤ Vin ≤ 20V, f=120Hz, Tj=25°C
VD		-	1.7	-	V	Io=100mA, Tj=25°C
ΔVo / ΔTj		-	-0.65	-	mV/°C	Io=5mA, 0°C ≤ Tj ≤ 125°C

GI78L06 (Refer to the test circuits, Tj=0~125°C, Io=40mA, Vin=12V, Cin=0.33μF, Co=0.1μF unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	5.82	6.0	6.18	V	Vin=12V, Io=40mA, Tj=25°C 8.5V ≤ Vin ≤ 20V, 1mA ≤ Io ≤ 40mA 8.5V ≤ Vin ≤ Vmax, 1mA ≤ Io ≤ 70mA (Note2)
	B-Rank (5%)	5.70	-	6.30		
ΔVO (Line Regulation)		-	64	175	mV	8.5V ≤ Vin ≤ 20V, Io=40mA, Tj=25°C
		-	54	125		9V ≤ Vin ≤ 20V, Io=40mA, Tj=25°C
ΔVO (Load Regulation)		-	12.8	80	mV	Vin=12V, 1mA ≤ Io ≤ 100mA, Tj=25°C
		-	5.8	40		Vin=12V, 1mA ≤ Io ≤ 70mA, Tj=25°C
IQ		-	3.9	6.0	mA	Vin=12V, Io=0mA, Tj=25°C
Δ IQ		-	-	0.1	mA	Vin=12V, 1mA ≤ Io ≤ 40mA
		-	-	1.5		9V ≤ Vin ≤ 20V, Io=40mA
Vn		-	49	-	μV	10Hz ≤ f ≤ 100KHz
RR		40	46	-	dB	10V ≤ Vin ≤ 20V, f=120Hz, Tj=25°C
VD		-	1.7	-	V	Io=100mA, Tj=25°C
ΔVo / ΔTj		-	0.75	-	mV/°C	Io=5mA, 0°C ≤ Tj ≤ 125°C

GI78L08 (Refer to the test circuits, Tj=0~125°C, Io=40mA, Vin=14V, Cin=0.33μF, Co=0.1μF unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	7.76	8.0	8.24	V	Vin=14V, Io=40mA, Tj=25°C 10.5V ≤ Vin ≤ 23V, 1mA ≤ Io ≤ 40mA 10.5V ≤ Vin ≤ Vmax, 1mA ≤ Io ≤ 70mA (Note2)
	B-Rank (5%)	7.60	-	8.40		
ΔVO (Line Regulation)		-	10	175	mV	10.5V ≤ Vin ≤ 23V, Io=40mA, Tj=25°C
		-	8	125		11V ≤ Vin ≤ 23V, Io=40mA, Tj=25°C
ΔVO (Load Regulation)		-	15	80	mV	Vin=14V, 1mA ≤ Io ≤ 100mA, Tj=25°C
		-	8	40		Vin=14V, 1mA ≤ Io ≤ 70mA, Tj=25°C
IQ		-	2.0	5.5	mA	Vin=14V, Io=0mA, Tj=25°C
Δ IQ		-	-	0.1	mA	Vin=14V, 1mA ≤ Io ≤ 40mA
		-	-	1.5		11V ≤ Vin ≤ 23V, Io=40mA
Vn		-	49	-	μV	10Hz ≤ f ≤ 100KHz
RR		39	45	-	dB	11V ≤ Vin ≤ 21V, f=120Hz, Tj=25°C
VD		-	1.7	-	V	Io=100mA, Tj=25°C
ΔVo / ΔTj		-	0.75	-	mV/°C	Io=5mA, 0°C ≤ Tj ≤ 125°C

GI78L09 (Refer to the test circuits, $T_j=0\sim 125^{\circ}\text{C}$, $I_o=40\text{mA}$, $V_{in}=15\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	8.73	9.0	9.27	V	$V_{in}=15\text{V}$, $I_o=40\text{mA}$, $T_j=25^{\circ}\text{C}$ $11.5\text{V} \leq V_{in} \leq 24\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$ $11.5\text{V} \leq V_{in} \leq V_{max}$, $1\text{mA} \leq I_o \leq 70\text{mA}$ (Note2)
	B-Rank (5%)	8.55	-	9.45		
ΔVO (Line Regulation)		-	90	200	mV	$11.5\text{V} \leq V_{in} \leq 24\text{V}$, $I_o=40\text{mA}$, $T_j=25^{\circ}\text{C}$
		-	100	150		$13\text{V} \leq V_{in} \leq 24\text{V}$, $I_o=40\text{mA}$, $T_j=25^{\circ}\text{C}$
ΔVO (Load Regulation)		-	20	90	mV	$V_{in}=15\text{V}$, $1\text{mA} \leq I_o \leq 100\text{mA}$, $T_j=25^{\circ}\text{C}$
		-	10	45		$V_{in}=15\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$, $T_j=25^{\circ}\text{C}$
IQ		-	2.0	6.0	mA	$V_{in}=15\text{V}$, $I_o=0\text{mA}$, $T_j=25^{\circ}\text{C}$
ΔIQ		-	-	0.1	mA	$V_{in}=15\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$
		-	-	1.5		$13\text{V} \leq V_{in} \leq 24\text{V}$, $I_o=40\text{mA}$
Vn		-	49	-	μV	$10\text{Hz} \leq f \leq 100\text{KHz}$
RR		38	44	-	dB	$12\text{V} \leq V_{in} \leq 23\text{V}$, $f=120\text{Hz}$, $T_j=25^{\circ}\text{C}$
VD		-	1.7	-	V	$I_o=100\text{mA}$, $T_j=25^{\circ}\text{C}$
$\Delta\text{Vo} / \Delta\text{Tj}$		-	0.75	-	mV/ $^{\circ}\text{C}$	$I_o=5\text{mA}$, $0^{\circ}\text{C} \leq T_j \leq 125^{\circ}\text{C}$

GI78L10 (Refer to the test circuits, $T_j=0\sim 125^{\circ}\text{C}$, $I_o=40\text{mA}$, $V_{in}=17\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	9.70	10.0	10.30	V	$V_{in}=17\text{V}$, $I_o=40\text{mA}$, $T_j=25^{\circ}\text{C}$ $13\text{V} \leq V_{in} \leq 25\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$ $13\text{V} \leq V_{in} \leq V_{max}$, $1\text{mA} \leq I_o \leq 70\text{mA}$ (Note2)
	B-Rank (5%)	9.50	-	10.50		
ΔVO (Line Regulation)		-	51	175	mV	$13\text{V} \leq V_{in} \leq 25\text{V}$, $I_o=40\text{mA}$, $T_j=25^{\circ}\text{C}$
		-	42	125		$14\text{V} \leq V_{in} \leq 25\text{V}$, $I_o=40\text{mA}$, $T_j=25^{\circ}\text{C}$
ΔVO (Load Regulation)		-	20	90	mV	$V_{in}=17\text{V}$, $1\text{mA} \leq I_o \leq 100\text{mA}$, $T_j=25^{\circ}\text{C}$
		-	11	40		$V_{in}=17\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$, $T_j=25^{\circ}\text{C}$
IQ		-	4.2	6.0	mA	$V_{in}=17\text{V}$, $I_o=0\text{mA}$, $T_j=25^{\circ}\text{C}$
ΔIQ		-	-	0.1	mA	$V_{in}=17\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$
		-	-	1.5		$14\text{V} \leq V_{in} \leq 25\text{V}$, $I_o=40\text{mA}$
Vn		-	62	-	μV	$10\text{Hz} \leq f \leq 100\text{KHz}$
RR		37	44	-	dB	$15\text{V} \leq V_{in} \leq 25\text{V}$, $f=120\text{Hz}$, $T_j=25^{\circ}\text{C}$
VD		-	1.7	-	V	$I_o=100\text{mA}$, $T_j=25^{\circ}\text{C}$

GI78L12 (Refer to the test circuits, $T_j=0\sim 125^{\circ}\text{C}$, $I_o=40\text{mA}$, $V_{in}=19\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	11.64	12.0	12.36	V	$V_{in}=19\text{V}$, $I_o=40\text{mA}$, $T_j=25^{\circ}\text{C}$ $14.5\text{V} \leq V_{in} \leq 27\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$ $14.5\text{V} \leq V_{in} \leq V_{max}$, $1\text{mA} \leq I_o \leq 70\text{mA}$ (Note2)
	B-Rank (5%)	11.40	-	12.60		
ΔVO (Line Regulation)		-	25	300	mV	$14.5\text{V} \leq V_{in} \leq 27\text{V}$, $I_o=40\text{mA}$, $T_j=25^{\circ}\text{C}$
		-	20	250		$16\text{V} \leq V_{in} \leq 27\text{V}$, $I_o=40\text{mA}$, $T_j=25^{\circ}\text{C}$
ΔVO (Load Regulation)		-	25	150	mV	$V_{in}=19\text{V}$, $1\text{mA} \leq I_o \leq 100\text{mA}$, $T_j=25^{\circ}\text{C}$
		-	12	75		$V_{in}=19\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$, $T_j=25^{\circ}\text{C}$
IQ		-	2.0	6.0	mA	$V_{in}=19\text{V}$, $I_o=0\text{mA}$, $T_j=25^{\circ}\text{C}$
ΔIQ		-	-	0.1	mA	$V_{in}=19\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$
		-	-	1.5		$16\text{V} \leq V_{in} \leq 27\text{V}$, $I_o=40\text{mA}$
Vn		-	80	-	μV	$10\text{Hz} \leq f \leq 100\text{KHz}$
RR		37	65	-	dB	$15\text{V} \leq V_{in} \leq 25\text{V}$, $f=120\text{Hz}$, $T_j=25^{\circ}\text{C}$
VD		-	1.7	-	V	$I_o=100\text{mA}$, $T_j=25^{\circ}\text{C}$
$\Delta\text{Vo} / \Delta\text{Tj}$		-	-1.0	-	mV/ $^{\circ}\text{C}$	$I_o=5\text{mA}$, $0^{\circ}\text{C} \leq T_j \leq 125^{\circ}\text{C}$

GI78L15 (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=40\text{mA}$, $V_{in}=23\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	14.55	15.0	15.45	V	$V_{in}=23\text{V}$, $I_o=40\text{mA}$, $T_j=25^\circ\text{C}$ $17.5\text{V} \leq V_{in} \leq 30\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$ $17.5\text{V} \leq V_{in} \leq V_{max}$, $1\text{mA} \leq I_o \leq 70\text{mA}$ (Note2)
	B-Rank (5%)	14.25	-	15.75		
ΔVO (Line Regulation)		-	25	150	mV	$17.5\text{V} \leq V_{in} \leq 30\text{V}$, $I_o=40\text{mA}$, $T_j=25^\circ\text{C}$
		-	15	75		$20\text{V} \leq V_{in} \leq 30\text{V}$, $I_o=40\text{mA}$, $T_j=25^\circ\text{C}$
ΔVO (Load Regulation)		-	20	150	mV	$V_{in}=23\text{V}$, $1\text{mA} \leq I_o \leq 100\text{mA}$, $T_j=25^\circ\text{C}$
		-	25	150		$V_{in}=23\text{V}$, $1\text{mA} \leq I_o \leq 70\text{mA}$, $T_j=25^\circ\text{C}$
IQ		-	2.2	6.5	mA	$V_{in}=23\text{V}$, $I_o=0\text{mA}$, $T_j=25^\circ\text{C}$
ΔIQ		-	-	0.1	mA	$V_{in}=23\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$
		-	-	1.5		$20\text{V} \leq V_{in} \leq 30\text{V}$, $I_o=40\text{mA}$
Vn		-	90	-	μV	$10\text{Hz} \leq f \leq 100\text{KHz}$
RR		34	63	-	dB	$18.5\text{V} \leq V_{in} \leq 28.5\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$
VD		-	1.7	-	V	$I_o=100\text{mA}$, $T_j=25^\circ\text{C}$
$\Delta\text{Vo} / \Delta\text{Tj}$		-	-1.3	-	mV/ $^\circ\text{C}$	$I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

GI78L18 (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=40\text{mA}$, $V_{in}=27\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	17.46	18.0	18.54	V	$V_{in}=27\text{V}$, $I_o=40\text{mA}$, $T_j=25^\circ\text{C}$ $21\text{V} \leq V_{in} \leq 33\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$ $21\text{V} \leq V_{in} \leq V_{max}$, $1\text{mA} \leq I_o \leq 70\text{mA}$ (Note2)
	B-Rank (5%)	17.10	-	18.9		
ΔVO (Line Regulation)		-	145	300	mV	$21\text{V} \leq V_{in} \leq 33\text{V}$, $I_o=40\text{mA}$, $T_j=25^\circ\text{C}$
		-	135	250		$22\text{V} \leq V_{in} \leq 33\text{V}$, $I_o=40\text{mA}$, $T_j=25^\circ\text{C}$
ΔVO (Load Regulation)		-	30	170	mV	$V_{in}=27\text{V}$, $1\text{mA} \leq I_o \leq 100\text{mA}$, $T_j=25^\circ\text{C}$
		-	15	85		$V_{in}=27\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$, $T_j=25^\circ\text{C}$
IQ		-	2.0	6.0	mA	$V_{in}=27\text{V}$, $I_o=0\text{mA}$, $T_j=25^\circ\text{C}$
ΔIQ		-	-	0.1	mA	$V_{in}=27\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$
		-	-	1.5		$21\text{V} \leq V_{in} \leq 33\text{V}$, $I_o=40\text{mA}$
Vn		-	150	-	μV	$10\text{Hz} \leq f \leq 100\text{KHz}$
RR		34	48	-	dB	$23\text{V} \leq V_{in} \leq 33\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$
VD		-	1.7	-	V	$I_o=100\text{mA}$, $T_j=25^\circ\text{C}$
$\Delta\text{Vo} / \Delta\text{Tj}$		-	-1.8	-	mV/ $^\circ\text{C}$	$I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

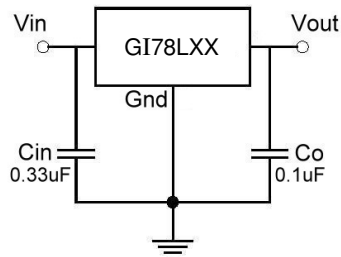
GI78L24 (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=40\text{mA}$, $V_{in}=33\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	23.28	24.0	24.72	V	$V_{in}=33\text{V}$, $I_o=40\text{mA}$, $T_j=25^\circ\text{C}$ $27\text{V} \leq V_{in} \leq 38\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$ $27\text{V} \leq V_{in} \leq V_{max}$, $1\text{mA} \leq I_o \leq 70\text{mA}$ (Note2)
	B-Rank (5%)	22.80	-	25.20		
ΔVO (Line Regulation)		-	160	300	mV	$27\text{V} \leq V_{in} \leq 38\text{V}$, $I_o=40\text{mA}$, $T_j=25^\circ\text{C}$
		-	150	250		$28\text{V} \leq V_{in} \leq 38\text{V}$, $I_o=40\text{mA}$, $T_j=25^\circ\text{C}$
ΔVO (Load Regulation)		-	40	200	mV	$V_{in}=33\text{V}$, $1\text{mA} \leq I_o \leq 100\text{mA}$, $T_j=25^\circ\text{C}$
		-	20	100		$V_{in}=33\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$, $T_j=25^\circ\text{C}$
IQ		-	2.2	6.0	mA	$V_{in}=33\text{V}$, $I_o=0\text{mA}$, $T_j=25^\circ\text{C}$
ΔIQ		-	-	0.1	mA	$V_{in}=33\text{V}$, $1\text{mA} \leq I_o \leq 40\text{mA}$
		-	-	1.5		$27\text{V} \leq V_{in} \leq 38\text{V}$, $I_o=40\text{mA}$
Vn		-	200	-	μV	$10\text{Hz} \leq f \leq 100\text{KHz}$
RR		34	45	-	dB	$27\text{V} \leq V_{in} \leq 38\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$
VD		-	1.7	-	V	$I_o=100\text{mA}$, $T_j=25^\circ\text{C}$
$\Delta\text{Vo} / \Delta\text{Tj}$		-	-2.0	-	mV/ $^\circ\text{C}$	$I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

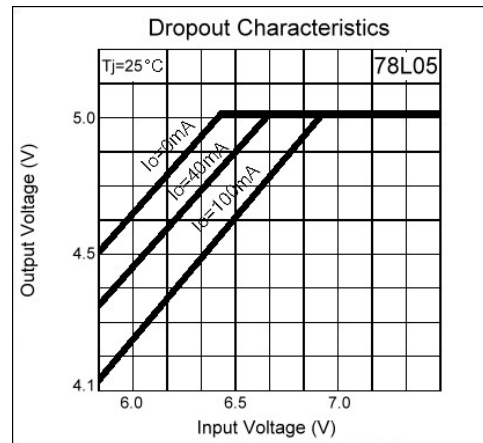
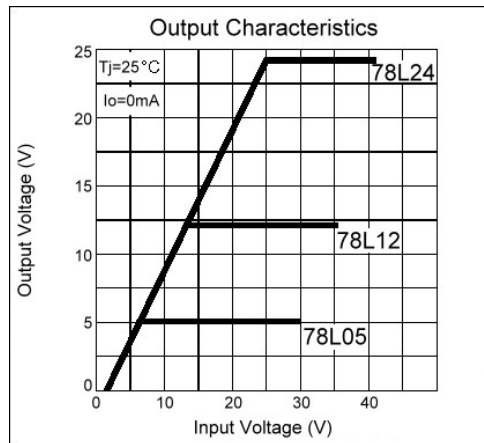
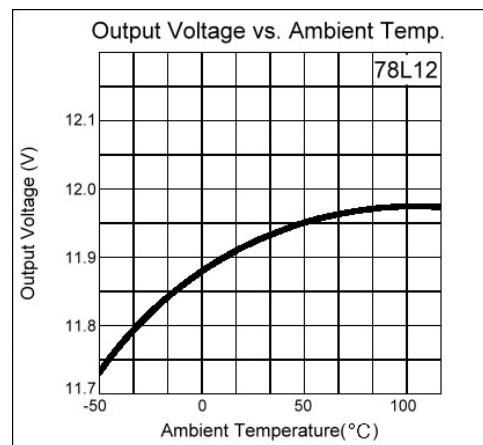
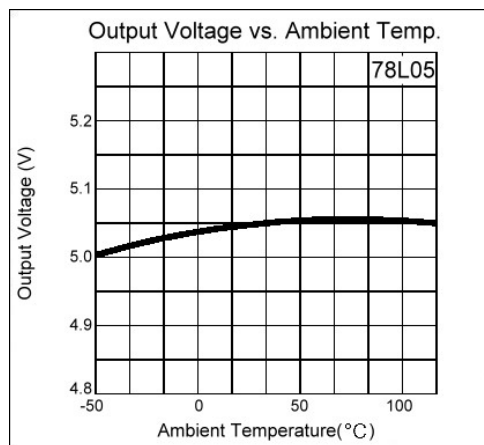
Note1: The Maximum steady state usable output current is dependent on input voltage, heat sinking, lead length of the package and copper of PCB. The data above represent pulse test conditions with junction temperatures specified at the initiation of test.

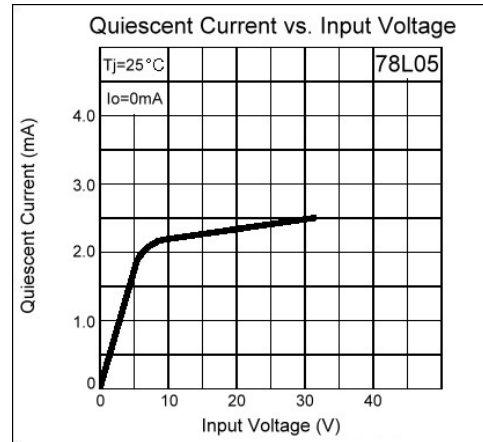
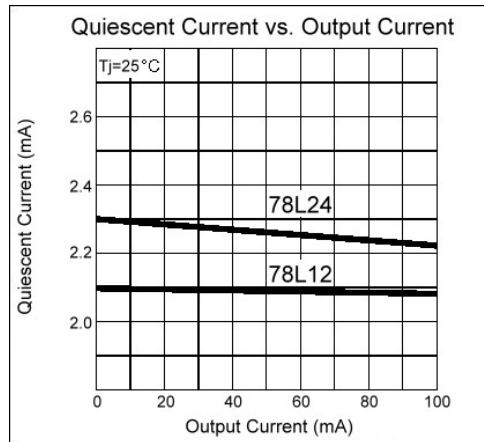
Note2: Power dissipation<1W

Typical Application



Characteristics Curve





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