

## GE78XXA

### 3-TERMINAL POSITIVE VOLTAGE REGULATORS

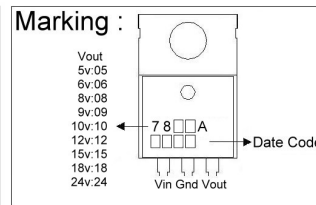
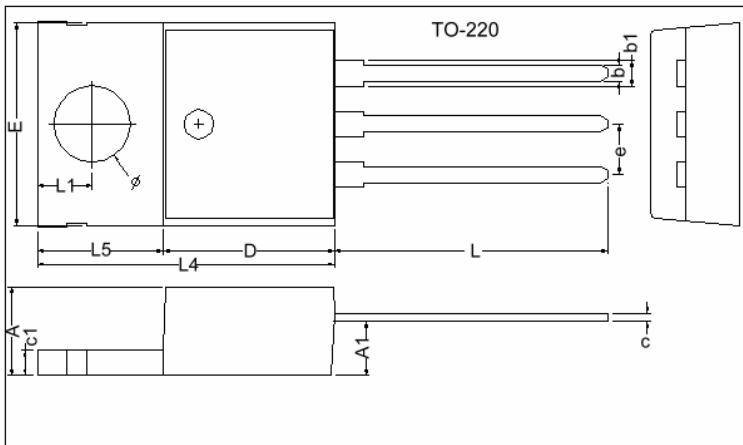
#### Description

The GE78XXA series of fixed-voltage monolithic integrated-circuit voltage regulators designed for a wide range of 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 1.5 amperes of output current. The internal current limiting and thermal shutdown features of these regulators make them essentially immune to overload.

#### Features

- 5V, 6V, 8V, 9V, 10V, 12V, 15V, 18V, 24V output voltage available
- Internal Thermal Overload Protection
- High Power Dissipation Capability
- Internal Short-Circuit Current Limiting
- No External Components
- Output Transistor Safe-Area Compensation

#### Package Dimensions



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.80	c1	1.25	1.45
b	0.76	1.00	b1	1.17	1.47
c	0.36	0.50	L	13.25	14.25
D	8.60	9.00	e	2.54 REF.	
E	9.80	10.4	L1	2.60	2.89
L4	14.7	15.3	Ø	3.71	3.96
L5	6.20	6.60	A1	2.60	2.80

#### Absolute Maximum Ratings

Parameter		Ratings	Unit
Input voltage	GE7805A ~ 18A	35V	V
	GE7824A	40V	V
Output current		1.5	A
Operating junction temperature range		0 ~ 150	°C
Storage temperature range		-55 ~ 150	°C
Thermal resistance junction-air (R <sub>θJA</sub> )		65	°C/W
Thermal resistance junction-cases (R <sub>θJC</sub> )		5	°C/W

**Electrical Characteristics****GE7805A** (Refer to the test circuits,  $T_j=0\sim 125^\circ\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_{in}=10\text{V}$ ,  $C_{in}=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$  unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	4.85	5.0	5.15	V	$V_{in}=10\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$ $7.5\text{V} \leq V_{in} \leq 20\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$ , $PD \leq 15\text{W}$
	B-Rank (5%)	4.75	-	5.25		
$\Delta VO$ (Line Regulation)		-	3	100	mV	$7\text{V} \leq V_{in} \leq 25\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
		-	1	50		$8\text{V} \leq V_{in} \leq 12\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta VO$ (Load Regulation)		-	15	100	mV	$V_{in}=10\text{V}$ , $5\text{mA} \leq I_o \leq 1.5\text{A}$ , $T_j=25^\circ\text{C}$
		-	5	50		$V_{in}=10\text{V}$ , $250\text{mA} \leq I_o \leq 750\text{mA}$ , $T_j=25^\circ\text{C}$
IQ		-	4.2	8.0	mA	$V_{in}=10\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta IQ$		-	-	0.5	mA	$V_{in}=10\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$
		-	-	1.3		$7\text{V} \leq V_{in} \leq 25\text{V}$ , $I_o=500\text{mA}$
Vn		-	40	-	$\mu\text{V}$	$10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_j=25^\circ\text{C}$
RR		62	-	-	dB	$8\text{V} \leq V_{in} \leq 18\text{V}$ , $f=120\text{Hz}$ , $T_j=25^\circ\text{C}$
VD		-	2.0	-	V	$I_o=1\text{A}$ , $T_j=25^\circ\text{C}$
Isc		-	750	-	mA	$V_{in}=10\text{V}$ , $T_j=25^\circ\text{C}$
Ipk		-	2.2	-	A	$T_j=25^\circ\text{C}$
$\Delta Vo / \Delta Tj$		-	-1.1	-	$\text{mV}/^\circ\text{C}$	$I_o=5\text{mA}$ , $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

**GE7806A** (Refer to the test circuits,  $T_j=0\sim 125^\circ\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_{in}=11\text{V}$ ,  $C_{in}=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$  unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	5.82	6.0	6.18	V	$V_{in}=11\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$ $8\text{V} \leq V_{in} \leq 21\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$ , $PD \leq 15\text{W}$
	B-Rank (5%)	5.70	-	6.30		
$\Delta VO$ (Line Regulation)		-	5	120	mV	$8\text{V} \leq V_{in} \leq 25\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
		-	1.5	60		$9\text{V} \leq V_{in} \leq 13\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta VO$ (Load Regulation)		-	14	120	mV	$V_{in}=11\text{V}$ , $5\text{mA} \leq I_o \leq 1.5\text{A}$ , $T_j=25^\circ\text{C}$
		-	4	60		$V_{in}=11\text{V}$ , $250\text{mA} \leq I_o \leq 750\text{mA}$ , $T_j=25^\circ\text{C}$
IQ		-	4.3	8.0	mA	$V_{in}=11\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta IQ$		-	-	0.5	mA	$V_{in}=11\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$
		-	-	1.3		$8\text{V} \leq V_{in} \leq 25\text{V}$ , $I_o=500\text{mA}$
Vn		-	45	-	$\mu\text{V}$	$10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_j=25^\circ\text{C}$
RR		59	-	-	dB	$9\text{V} \leq V_{in} \leq 19\text{V}$ , $f=120\text{Hz}$ , $T_j=25^\circ\text{C}$
VD		-	2.0	-	V	$I_o=1\text{A}$ , $T_j=25^\circ\text{C}$
Isc		-	550	-	mA	$V_{in}=11\text{V}$ , $T_j=25^\circ\text{C}$
Ipk		-	2.2	-	A	$T_j=25^\circ\text{C}$
$\Delta Vo / \Delta Tj$		-	-0.8	-	$\text{mV}/^\circ\text{C}$	$I_o=5\text{mA}$ , $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

**GE7808A** (Refer to the test circuits,  $T_j=0\sim 125^\circ\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_{in}=14\text{V}$ ,  $C_{in}=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$  unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	7.76	8.0	8.24	V	$V_{in}=14\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$ $10.5\text{V} \leq V_{in} \leq 23\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$ , $PD \leq 15\text{W}$
	B-Rank (5%)	7.60	-	8.40		
$\Delta VO$ (Line Regulation)		-	6	160	mV	$10.5\text{V} \leq V_{in} \leq 25\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
		-	2	80		$11\text{V} \leq V_{in} \leq 17\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta VO$ (Load Regulation)		-	12	160	mV	$V_{in}=14\text{V}$ , $5\text{mA} \leq I_o \leq 1.5\text{A}$ , $T_j=25^\circ\text{C}$
		-	4	80		$V_{in}=14\text{V}$ , $250\text{mA} \leq I_o \leq 750\text{mA}$ , $T_j=25^\circ\text{C}$
IQ		-	4.3	8.0	mA	$V_{in}=14\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta IQ$		-	-	0.5	mA	$V_{in}=14\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$
		-	-	1.0		$10.5\text{V} \leq V_{in} \leq 25\text{V}$ , $I_o=500\text{mA}$
Vn		-	52	-	$\mu\text{V}$	$10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_j=25^\circ\text{C}$
RR		55	-	-	dB	$11.5\text{V} \leq V_{in} \leq 21.5\text{V}$ , $f=120\text{Hz}$ , $T_j=25^\circ\text{C}$
VD		-	2.0	-	V	$I_o=1\text{A}$ , $T_j=25^\circ\text{C}$
Isc		-	450	-	mA	$V_{in}=14\text{V}$ , $T_j=25^\circ\text{C}$
Ipk		-	2.2	-	A	$T_j=25^\circ\text{C}$
$\Delta Vo / \Delta Tj$		-	-0.8	-	$\text{mV}/^\circ\text{C}$	$I_o=5\text{mA}$ , $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

**GE7809A** (Refer to the test circuits,  $T_j=0\sim 125^\circ\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_{in}=16\text{V}$ ,  $C_{in}=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$  unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	8.73	9.0	9.27	V	$V_{in}=16\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$ $11.5\text{V} \leq V_{in} \leq 24\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$ , $PD \leq 15\text{W}$
	B-Rank (5%)	8.55	-	9.45		
$\Delta VO$ (Line Regulation)		-	7	180	mV	$11.5\text{V} \leq V_{in} \leq 27\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
		-	2	90		$13\text{V} \leq V_{in} \leq 19\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta VO$ (Load Regulation)		-	12	180	mV	$V_{in}=16\text{V}$ , $5\text{mA} \leq I_o \leq 1.5\text{A}$ , $T_j=25^\circ\text{C}$
		-	4	90		$V_{in}=16\text{V}$ , $250\text{mA} \leq I_o \leq 750\text{mA}$ , $T_j=25^\circ\text{C}$
IQ		-	4.3	8.0	mA	$V_{in}=16\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta IQ$		-	-	0.5	mA	$V_{in}=16\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$
		-	-	1.0		$11.5\text{V} \leq V_{in} \leq 27\text{V}$ , $I_o=500\text{mA}$
Vn		-	60	-	$\mu\text{V}$	$10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_j=25^\circ\text{C}$
RR		55	-	-	dB	$12\text{V} \leq V_{in} \leq 22\text{V}$ , $f=120\text{Hz}$ , $T_j=25^\circ\text{C}$
VD		-	2.0	-	V	$I_o=1\text{A}$ , $T_j=25^\circ\text{C}$
Isc		-	400	-	mA	$V_{in}=16\text{V}$ , $T_j=25^\circ\text{C}$
Ipk		-	2.2	-	A	$T_j=25^\circ\text{C}$
$\Delta Vo / \Delta Tj$		-	-1.0	-	$\text{mV}/^\circ\text{C}$	$I_o=5\text{mA}$ , $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

**GE7810A** (Refer to the test circuits,  $T_j=0\sim 125^\circ\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_{in}=17\text{V}$ ,  $C_{in}=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$  unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	9.70	10.0	10.30	V	$V_{in}=17\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$ $12.5\text{V} \leq V_{in} \leq 25\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$ , $PD \leq 15\text{W}$
	B-Rank (5%)	9.50	-	10.50		
$\Delta VO$ (Line Regulation)		-	7	200	mV	$12.5\text{V} \leq V_{in} \leq 28\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
		-	2	100		$14\text{V} \leq V_{in} \leq 20\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta VO$ (Load Regulation)		-	12	200	mV	$V_{in}=17\text{V}$ , $5\text{mA} \leq I_o \leq 1.5\text{A}$ , $T_j=25^\circ\text{C}$
		-	4	100		$V_{in}=17\text{V}$ , $250\text{mA} \leq I_o \leq 750\text{mA}$ , $T_j=25^\circ\text{C}$
IQ		-	4.3	8.0	mA	$V_{in}=17\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta IQ$		-	-	0.5	mA	$V_{in}=17\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$
		-	-	1.0		$12.5\text{V} \leq V_{in} \leq 28\text{V}$ , $I_o=500\text{mA}$
Vn		-	70	-	$\mu\text{V}$	$10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_j=25^\circ\text{C}$
RR		55	-	-	dB	$13\text{V} \leq V_{in} \leq 23\text{V}$ , $f=120\text{Hz}$ , $T_j=25^\circ\text{C}$
VD		-	2.0	-	V	$I_o=1\text{A}$ , $T_j=25^\circ\text{C}$
Isc		-	400	-	mA	$V_{in}=17\text{V}$ , $T_j=25^\circ\text{C}$
Ipk		-	2.2	-	A	$T_j=25^\circ\text{C}$
$\Delta Vo / \Delta Tj$		-	-1.0	-	$\text{mV}/^\circ\text{C}$	$I_o=5\text{mA}$ , $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

**GE7812A** (Refer to the test circuits,  $T_j=0\sim 125^\circ\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_{in}=19\text{V}$ ,  $C_{in}=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$  unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	11.64	12.0	12.36	V	$V_{in}=19\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$ $14.5\text{V} \leq V_{in} \leq 27\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$ , $PD \leq 15\text{W}$
	B-Rank (5%)	11.40	-	12.60		
$\Delta VO$ (Line Regulation)		-	10	240	mV	$14.5\text{V} \leq V_{in} \leq 30\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
		-	3	120		$16\text{V} \leq V_{in} \leq 22\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta VO$ (Load Regulation)		-	12	240	mV	$V_{in}=19\text{V}$ , $5\text{mA} \leq I_o \leq 1.5\text{A}$ , $T_j=25^\circ\text{C}$
		-	4	120		$V_{in}=19\text{V}$ , $250\text{mA} \leq I_o \leq 750\text{mA}$ , $T_j=25^\circ\text{C}$
IQ		-	4.3	8.0	mA	$V_{in}=19\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta IQ$		-	-	0.5	mA	$V_{in}=19\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$
		-	-	1.0		$14.5\text{V} \leq V_{in} \leq 30\text{V}$ , $I_o=500\text{mA}$
Vn		-	75	-	$\mu\text{V}$	$10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_j=25^\circ\text{C}$
RR		55	-	-	dB	$15\text{V} \leq V_{in} \leq 25\text{V}$ , $f=120\text{Hz}$ , $T_j=25^\circ\text{C}$
VD		-	2.0	-	V	$I_o=1\text{A}$ , $T_j=25^\circ\text{C}$
Isc		-	350	-	mA	$V_{in}=19\text{V}$ , $T_j=25^\circ\text{C}$
Ipk		-	2.2	-	A	$T_j=25^\circ\text{C}$
$\Delta Vo / \Delta Tj$		-	-1.0	-	$\text{mV}/^\circ\text{C}$	$I_o=5\text{mA}$ , $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

**GE7815A** (Refer to the test circuits,  $T_j=0\sim 125^\circ\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_{in}=23\text{V}$ ,  $C_{in}=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$  unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	14.55	15.0	15.45	V	$V_{in}=23\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$ $17.5\text{V} \leq V_{in} \leq 30\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$ , $PD \leq 15\text{W}$
	B-Rank (5%)	14.25	-	15.75		
$\Delta\text{VO}$ (Line Regulation)		-	12	300	mV	$17.5\text{V} \leq V_{in} \leq 30\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
		-	3	150		$20\text{V} \leq V_{in} \leq 26\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta\text{VO}$ (Load Regulation)		-	12	300	mV	$V_{in}=23\text{V}$ , $5\text{mA} \leq I_o \leq 1.5\text{A}$ , $T_j=25^\circ\text{C}$
		-	4	150		$V_{in}=23\text{V}$ , $250\text{mA} \leq I_o \leq 750\text{mA}$ , $T_j=25^\circ\text{C}$
IQ		-	4.3	8.0	mA	$V_{in}=23\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta\text{IQ}$		-	-	0.5	mA	$V_{in}=23\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$
		-	-	1.0		$17.5\text{V} \leq V_{in} \leq 30\text{V}$ , $I_o=500\text{mA}$
Vn		-	90	-	$\mu\text{V}$	$10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_j=25^\circ\text{C}$
RR		54	-	-	dB	$18.5\text{V} \leq V_{in} \leq 28.5\text{V}$ , $f=120\text{Hz}$ , $T_j=25^\circ\text{C}$
VD		-	2.0	-	V	$I_o=1\text{A}$ , $T_j=25^\circ\text{C}$
Isc		-	230	-	mA	$V_{in}=19\text{V}$ , $T_j=25^\circ\text{C}$
Ipk		-	2.1	-	A	$T_j=25^\circ\text{C}$
$\Delta\text{Vo} / \Delta\text{Tj}$		-	-1.0	-	$\text{mV}/^\circ\text{C}$	$I_o=5\text{mA}$ , $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

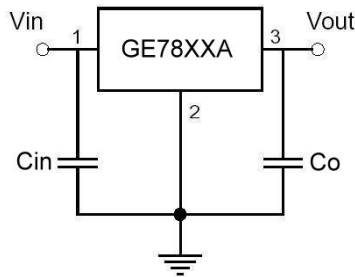
**GE7818A** (Refer to the test circuits,  $T_j=0\sim 125^\circ\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_{in}=27\text{V}$ ,  $C_{in}=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$  unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	17.46	18.0	18.54	V	$V_{in}=27\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$ $21\text{V} \leq V_{in} \leq 33\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$ , $PD \leq 15\text{W}$
	B-Rank (5%)	17.10	-	18.9		
$\Delta\text{VO}$ (Line Regulation)		-	15	360	mV	$21\text{V} \leq V_{in} \leq 33\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
		-	5	180		$24\text{V} \leq V_{in} \leq 30\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta\text{VO}$ (Load Regulation)		-	12	360	mV	$V_{in}=27\text{V}$ , $5\text{mA} \leq I_o \leq 1.5\text{A}$ , $T_j=25^\circ\text{C}$
		-	4	180		$V_{in}=27\text{V}$ , $250\text{mA} \leq I_o \leq 750\text{mA}$ , $T_j=25^\circ\text{C}$
IQ		-	4.5	8.0	mA	$V_{in}=27\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta\text{IQ}$		-	-	0.5	mA	$V_{in}=27\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$
		-	-	1.0		$21\text{V} \leq V_{in} \leq 33\text{V}$ , $I_o=500\text{mA}$
Vn		-	110	-	$\mu\text{V}$	$10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_j=25^\circ\text{C}$
RR		53	-	-	dB	$22\text{V} \leq V_{in} \leq 32\text{V}$ , $f=120\text{Hz}$ , $T_j=25^\circ\text{C}$
VD		-	2.0	-	V	$I_o=1\text{A}$ , $T_j=25^\circ\text{C}$
Isc		-	200	-	mA	$V_{in}=27\text{V}$ , $T_j=25^\circ\text{C}$
Ipk		-	2.1	-	A	$T_j=25^\circ\text{C}$
$\Delta\text{Vo} / \Delta\text{Tj}$		-	-1.0	-	$\text{mV}/^\circ\text{C}$	$I_o=5\text{mA}$ , $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

**GE7824A** (Refer to the test circuits,  $T_j=0\sim 125^\circ\text{C}$ ,  $I_o=500\text{mA}$ ,  $V_{in}=33\text{V}$ ,  $C_{in}=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$  unless otherwise specified)

Symbol		Min.	Typ.	Max.	Unit	Test Conditions
VO	A-Rank (3%)	23.28	24.0	24.72	V	$V_{in}=33\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$ $27\text{V} \leq V_{in} \leq 38\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$ , $PD \leq 15\text{W}$
	B-Rank (5%)	22.80	-	25.20		
$\Delta V_O$ (Line Regulation)		-	18	480	mV	$27\text{V} \leq V_{in} \leq 38\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
		-	6	240		$30\text{V} \leq V_{in} \leq 36\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta V_O$ (Load Regulation)		-	12	480	mV	$V_{in}=33\text{V}$ , $5\text{mA} \leq I_o \leq 1.5\text{A}$ , $T_j=25^\circ\text{C}$
		-	4	240		$V_{in}=33\text{V}$ , $250\text{mA} \leq I_o \leq 750\text{mA}$ , $T_j=25^\circ\text{C}$
IQ		-	4.6	8.0	mA	$V_{in}=33\text{V}$ , $I_o=500\text{mA}$ , $T_j=25^\circ\text{C}$
$\Delta I_Q$		-	-	0.5	mA	$V_{in}=33\text{V}$ , $5\text{mA} \leq I_o \leq 1\text{A}$
		-	-	1.0		$27\text{V} \leq V_{in} \leq 38\text{V}$ , $I_o=500\text{mA}$
Vn		-	170	-	$\mu\text{V}$	$10\text{Hz} \leq f \leq 100\text{KHz}$ , $T_j=25^\circ\text{C}$
RR		50	-	-	dB	$28\text{V} \leq V_{in} \leq 38\text{V}$ , $f=120\text{Hz}$ , $T_j=25^\circ\text{C}$
VD		-	2.0	-	V	$I_o=1\text{A}$ , $T_j=25^\circ\text{C}$
Isc		-	150	-	mA	$V_{in}=33\text{V}$ , $T_j=25^\circ\text{C}$
Ipk		-	2.1	-	A	$T_j=25^\circ\text{C}$
$\Delta V_o / \Delta T_j$		-	-1.5	-	$\text{mV}/^\circ\text{C}$	$I_o=5\text{mA}$ , $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$

## Typical Application



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