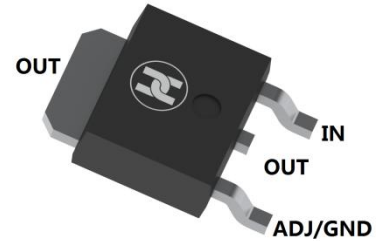


LOW DROP LINEAR VOLTAGE REGULATORS

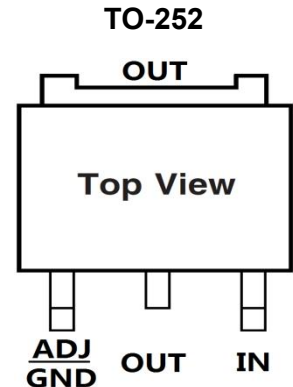
FEATURES

- Low Dropout Voltage: 1.15V at 1A Output Current
- Three-Terminal Adjustable or Fixed :
1.2V,1.5V,1.8V, 2.5V, 2.85V,3.0V,3.3V,3.6V,5V,ADJ
- Trimmed Current Limit
- On-Chip Thermal Shutdown
- Operation Junction Temperature: -25 °C to 125°C
- Surface Mount device



APPLICATIONS

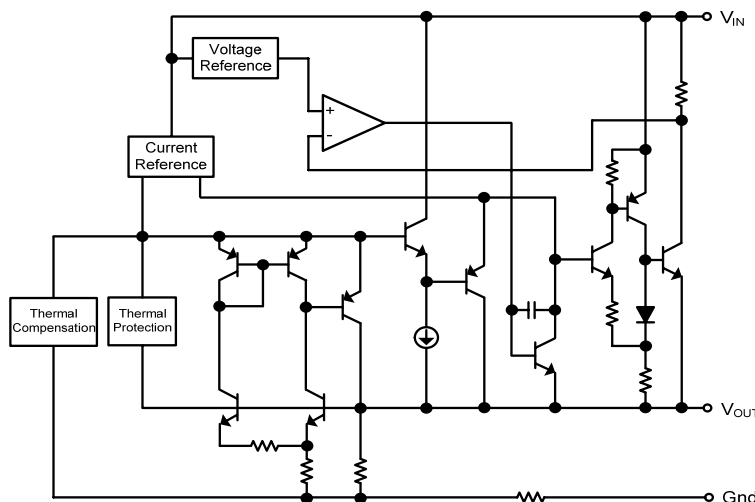
- PC Motherboard
- LCD Monitor
- Graphic Card
- DVD-Video Player
- NIC/Switch
- Telecom Modem
- ADSL Modem
- Printer and other peripheral Equipment



MECHANICAL DATA

- Case: TO-252
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.33 grams (approximate)

SCHEMATIC DIAGRAM



MARKING INFORMATION

Marking	1117-12	1117-15	1117-18	1117-25	1117-2J	1117-30	1117-33	1117-36	1117-50	1117-AD
Vo Voltage	1.2V	1.5V	1.8V	2.5V	2.85V	3.0V	3.3V	3.6V	5.0V	ADJ.

LOW DROP LINEAR VOLTAGE REGULATORS
ABOSLUTE MAXIMUM RATINGS(Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Input Voltage	V_i	20	V
Maximum Junction Temperature	T_J	150	°C
Power Dissipation	P_D	Internally limited	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	°C/W
Lead Temperature (Soldering, 10sec.)	T_L	260	°C
Storage Temperature Range	T_{STG}	-55 ~+150	°C
ESD Voltage (Machine Model)	V_{ESD}	400	V

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	15	V
Operating Junction Temperature Range	T_J	0~+125	°C

ELECTRICAL CHARACTERISTICS OF HV1117/A-1.2
(Ta=25°C, refer to the test circuits, Tj=0 to 125°C, Co=10µF unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_{OUT}	1.188	1.200	1.212	V	$V_{IN}=3.2V, I_{OUT}=10mA, T_J=+25^\circ C$
		1.176	1.200	1.224	V	$V_{IN}=2.7\sim 8V$ 1117: $I_{OUT}=0\sim 800mA$ 1117A: $I_{OUT}=0\sim 1A$
Line regulation	ΔV_{OUT}		1	6	mV	$V_{IN}=2.7\sim 8V, I_{OUT}=0mA$
Load Regulation	ΔV_{OUT}		1	10	mV	$V_{IN}=2.7V$ 1117: $I_{OUT}=0\sim 800mA$ 1117A: $I_{OUT}=0\sim 1A$
Temperature stability	ΔV_{OUT}		0.5		%	
Long Term Stability	ΔV_{OUT}		0.3		%	1000hrs, $T_J=+125^\circ C$
Operating Input	V_{IN}			15	V	$I_{OUT}=100mA$
Quiescent Current	I_q		5	10	mA	$V_{IN}\leq 10V$
Current Limit	I_{LIMIT}	0.8			A	1117
		1			A	1117A
						$V_{IN}=6.2V, T_J=+25^\circ C$
Minimum Load Current	$I_{O(MIN)}$		2	5	mA	$V_{IN}=15V$
Output Noise Voltage	eN		100		µV	$B=10Hz\sim 10kHz, T_J=+25^\circ C$
Supply Voltage Rejection	SVR	60	75		dB	$I_{OUT}=40mA, f=120Hz, T_J=+25^\circ C$ $V_{IN}=4.2V, V_{RIPPLE}=1V_{pp}$
Dropout Voltage	V_D		1.00	1.10	V	$I_{OUT}=100mA$
			1.15	1.25	V	$I_{OUT}=500mA$
			1.20	1.30	V	$I_{OUT}=800mA$
			1.20	1.30	V	$I_{OUT}=1000mA$
Thermal Regulation			0.01	0.10	%/w	$T_A=+25^\circ C, 30ms$ Pulse

LOW DROP LINEAR VOLTAGE REGULATORS
ELECTRICAL CHARACTERISTICS OF HV1117/A-1.5
($T_a=25^{\circ}\text{C}$, refer to the test circuits, $T_J=0$ to 125°C , $C_o=10\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_{OUT}	1.485	1.500	1.515	V	$V_{IN}=3.5\text{V}, I_{OUT}=10\text{mA}, T_J=+25^{\circ}\text{C}$
		1.470	1.500	1.530	V	$V_{IN}=3\sim 8\text{V}$ 1117: $I_{OUT}=0\sim 800\text{mA}$ 1117A: $I_{OUT}=0\sim 1\text{A}$
Line regulation	ΔV_{OUT}		1	6	mV	$V_{IN}=3\sim 8\text{V}, I_{OUT}=0\text{mA}$
Load Regulation	ΔV_{OUT}		1	10	mV	$V_{IN}=3\text{V}$ 1117: $I_{OUT}=0\sim 800\text{mA}$ 1117A: $I_{OUT}=0\sim 1\text{A}$
Temperature stability	ΔV_{OUT}		0.5		%	
Long Term Stability	ΔV_{OUT}		0.3		%	1000hrs, $T_J=+125^{\circ}\text{C}$
Operating Input Voltage	V_{IN}			15	V	$I_{OUT}=100\text{mA}$
Quiescent Current	I_q		5	10	mA	$V_{IN}\leq 10\text{V}$
Current Limit	I_{LIMIT}	0.8			A	1117
		1			A	1117A
Output Noise Voltage	eN		100		μV	$B=10\text{Hz}\sim 10\text{kHz}, T_J=+25^{\circ}\text{C}$
Supply Voltage Rejection	SVR	60	75		dB	$I_{OUT}=40\text{mA}, f=120\text{Hz}, T_J=+25^{\circ}\text{C}$ $V_{IN}=4.5\text{V}, V_{RIPPLE}=1V_{pp}$
Dropout Voltage	V_D		1.00	1.10	V	$I_{OUT}=100\text{mA}$
			1.15	1.25	V	$I_{OUT}=500\text{mA}$
			1.20	1.30	V	$I_{OUT}=800\text{mA}$
			1.20	1.30	V	$I_{OUT}=1000\text{mA}$
Thermal Regulation			0.01	0.10	%/w	$T_a=+25^{\circ}\text{C}, 30\text{ms Pulse}$

ELECTRICAL CHARACTERISTICS OF HV1117/A-1.8
($T_a=25^{\circ}\text{C}$, refer to the test circuits, $T_J=0$ to 125°C , $C_o=10\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_{OUT}	1.780	1.800	1.820	V	$V_{IN}=3.8\text{V}, I_{OUT}=10\text{mA}, T_J=+25^{\circ}\text{C}$
		1.760	1.800	1.840	V	$V_{IN}=3.3\sim 8\text{V}$ 1117: $I_{OUT}=0\sim 800\text{mA}$ 1117A: $I_{OUT}=0\sim 1\text{A}$
Line regulation	ΔV_{OUT}		1	6	mV	$V_{IN}=3.3\sim 8\text{V}, I_{OUT}=0\text{mA}$
Load Regulation	ΔV_{OUT}		1	10	mV	$V_{IN}=3.3\text{V}$ 1117: $I_{OUT}=0\sim 800\text{mA}$ 1117A: $I_{OUT}=0\sim 1\text{A}$
Temperature stability	ΔV_{OUT}		0.5		%	
Long Term Stability	ΔV_{OUT}		0.3		%	1000hrs, $T_J=+125^{\circ}\text{C}$
Operating Input Voltage	V_{IN}			10	V	$I_{OUT}=100\text{mA}$
Quiescent Current	I_q		5	10	mA	$V_{IN}\leq 8\text{V}$
Current Limit	I_{LIMIT}	0.8			A	1117
		1			A	1117A
Output Noise Voltage	eN		100		μV	$B=10\text{Hz}\sim 10\text{kHz}, T_J=+25^{\circ}\text{C}$
Supply Voltage Rejection	SVR	60	75		dB	$I_{OUT}=40\text{mA}, f=120\text{Hz}, T_J=+25^{\circ}\text{C}$ $V_{IN}=5.5\text{V}, V_{RIPPLE}=1V_{pp}$
Dropout Voltage	V_D		1.00	1.10	V	$I_{OUT}=100\text{mA}$
			1.15	1.25	V	$I_{OUT}=500\text{mA}$
			1.20	1.30	V	$I_{OUT}=800\text{mA}$
			1.20	1.30	V	$I_{OUT}=1000\text{mA}$
Thermal Regulation			0.01	0.10	%/w	$T_a=+25^{\circ}\text{C}, 30\text{ms Pulse}$

LOW DROP LINEAR VOLTAGE REGULATORS
ELECTRICAL CHARACTERISTICS OF HV1117/A-2.5
($T_a=25^{\circ}\text{C}$, refer to the test circuits, $T_J=0$ to 125°C , $C_o=10\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_{OUT}	2.475	2.500	2.525	V	$V_{IN}=4.5\text{V}, I_{OUT}=10\text{mA}, T_J=+25^{\circ}\text{C}$
		2.450	2.500	2.550	V	
		2.450	2.500	2.550		V
		2.400	2.500	2.600	1117: $I_{OUT}=0\sim 800\text{mA}$ 1117A: $I_{OUT}=0\sim 1\text{A}$	
Line regulation	ΔV_{OUT}		1	6	mV	$V_{IN}=3.9\sim 10\text{V}, I_{OUT}=0\text{mA}$
Load Regulation	ΔV_{OUT}		1	10	mV	$V_{IN}=3.9\text{V}$
Temperature stability	ΔV_{OUT}		0.5		%	
Long Term Stability	ΔV_{OUT}		0.3		%	1000hrs, $T_J=+125^{\circ}\text{C}$
Operating Input Voltage	V_{IN}			15	V	$I_{OUT}=100\text{mA}$
Quiescent Current	I_q		5	10	mA	$V_{IN}\leq 10\text{V}$
Current Limit	I_{LIMIT}	0.8			A	1117
		1			A	1117A
Output Noise Voltage	eN		100		μV	$B=10\text{Hz}\sim 10\text{kHz}, T_J=+25^{\circ}\text{C}$
Supply Voltage Rejection	SVR	60	75		dB	$I_{OUT}=40\text{mA}, f=120\text{Hz}, T_J=+25^{\circ}\text{C}$ $V_{IN}=5.5\text{V}, V_{RIPPLE}=1V_{pp}$
Dropout Voltage	V_D		1.00	1.10	V	$I_{OUT}=100\text{mA}$
			1.15	1.25	V	$I_{OUT}=500\text{mA}$
			1.20	1.30	V	$I_{OUT}=800\text{mA}$
			1.20	1.30	V	$I_{OUT}=1000\text{mA}$
Thermal Regulation			0.01	0.10	%/w	$T_A=+25^{\circ}\text{C}, 30\text{ms Pulse}$

ELECTRICAL CHARACTERISTICS OF HV1117/A-2.85
($T_a=25^{\circ}\text{C}$, refer to the test circuits, $T_J=0$ to 125°C , $C_o=10\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_{OUT}	2.828	2.850	2.880	V	$V_{IN}=4.85\text{V}, I_{OUT}=10\text{mA}, T_J=+25^{\circ}\text{C}$
		2.790	2.850	2.910	V	$V_{IN}=4.25\sim 10\text{V}$
Line regulation	ΔV_{OUT}		1	6	mV	$V_{IN}=4.25\sim 10\text{V}, I_{OUT}=0\text{mA}$
Load Regulation	ΔV_{OUT}		1	10	mV	$V_{IN}=4.25\text{V}$
Temperature stability	ΔV_{OUT}		0.5		%	
Long Term Stability	ΔV_{OUT}		0.3		%	1000hrs, $T_J=+125^{\circ}\text{C}$
Operating Input Voltage	V_{IN}			15	V	$I_{OUT}=100\text{mA}$
Quiescent Current	I_q		5	10	mA	$V_{IN}\leq 10\text{V}$
Current Limit	I_{LIMIT}	0.8			A	1117
		1			A	1117A
Output Noise Voltage	eN		100		μV	$B=10\text{Hz}\sim 10\text{kHz}, T_J=+25^{\circ}\text{C}$
Supply Voltage Rejection	SVR	60	75		dB	$I_{OUT}=40\text{mA}, f=120\text{Hz}, T_J=+25^{\circ}\text{C}$ $V_{IN}=5.85\text{V}, V_{RIPPLE}=1V_{pp}$
Dropout Voltage	V_D		1.00	1.10	V	$I_{OUT}=100\text{mA}$
			1.15	1.25	V	$I_{OUT}=500\text{mA}$
			1.20	1.30	V	$I_{OUT}=800\text{mA}$
			1.20	1.30	V	$I_{OUT}=1000\text{mA}$
Thermal Regulation			0.01	0.10	%/w	$T_A=+25^{\circ}\text{C}, 30\text{ms Pulse}$

LOW DROP LINEAR VOLTAGE REGULATORS
ELECTRICAL CHARACTERISTICS OF HV1117/A-3.0
($T_a=25^{\circ}\text{C}$, refer to the test circuits, $T_J=0$ to 125°C , $C_o=10\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_{OUT}	2.970	3.000	3.030	V	$V_{IN}=5\text{V}, I_{OUT}=10\text{mA}, T_J=+25^{\circ}\text{C}$
		2.940	3.000	3.060		
		2.940	3.000	3.060	V	$V_{IN}=4.5\sim 10\text{V}$
		2.880	3.000	3.120		
Line regulation	ΔV_{OUT}		1	6	mV	$V_{IN}=4.5\sim 12\text{V}, I_{OUT}=0\text{mA}$
Load Regulation	ΔV_{OUT}		1	10	mV	$V_{IN}=4.5\text{V}$
Temperature stability	ΔV_{OUT}		0.5		%	
Long Term Stability	ΔV_{OUT}		0.3		%	1000hrs, $T_J=+125^{\circ}\text{C}$
Operating Input Voltage	V_{IN}			15	V	$I_{OUT}=100\text{mA}$
Quiescent Current	I_q		5	10	mA	$V_{IN}\leq 10\text{V}$
Current Limit	I_{LIMIT}	0.8			A	1117
		1			A	1117A
Output Noise Voltage	eN		100		μV	$B=10\text{Hz}\sim 10\text{kHz}, T_J=+25^{\circ}\text{C}$
Supply Voltage Rejection	SVR	60	75		dB	$I_{OUT}=40\text{mA}, f=120\text{Hz}, T_J=+25^{\circ}\text{C}$ $V_{IN}=6\text{V}, V_{RIPPLE}=1V_{pp}$
Dropout Voltage	V_D		1.00	1.10	V	$I_{OUT}=100\text{mA}$
			1.15	1.25	V	$I_{OUT}=500\text{mA}$
			1.20	1.30	V	$I_{OUT}=800\text{mA}$
			1.20	1.30	V	$I_{OUT}=1000\text{mA}$
Thermal Regulation			0.01	0.10	%/w	$T_A=+25^{\circ}\text{C}, 30\text{ms Pulse}$

ELECTRICAL CHARACTERISTICS OF HV1117/A-3.3
($T_a=25^{\circ}\text{C}$, refer to the test circuits, $T_J=0$ to 125°C , $C_o=10\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_{OUT}	3.267	3.300	3.333	V	$V_{IN}=5.3\text{V}, I_{OUT}=10\text{mA}, T_J=+25^{\circ}\text{C}$
		3.235	3.300	3.365		
		3.235	3.300	3.365	V	$V_{IN}=4.75\sim 10\text{V}$
		3.160	3.300	3.440		
Line regulation	ΔV_{OUT}		1	6	mV	$V_{IN}=4.75\sim 15\text{V}, I_{OUT}=0\text{mA}$
Load Regulation	ΔV_{OUT}		1	10	mV	$V_{IN}=4.75\text{V}$
Temperature stability	ΔV_{OUT}		0.5		%	
Long Term Stability	ΔV_{OUT}		0.3		%	1000hrs, $T_J=+125^{\circ}\text{C}$
Operating Input Voltage	V_{IN}			15	V	$I_{OUT}=100\text{mA}$
Quiescent Current	I_q		5	10	mA	$V_{IN}\leq 15\text{V}$
Current Limit	I_{LIMIT}	0.8			A	1117
		1			A	1117A
Output Noise Voltage	eN		100		μV	$B=10\text{Hz}\sim 10\text{kHz}, T_J=+25^{\circ}\text{C}$
Supply Voltage Rejection	SVR	60	75		dB	$I_{OUT}=40\text{mA}, f=120\text{Hz}, T_J=+25^{\circ}\text{C}$ $V_{IN}=6.3\text{V}, V_{RIPPLE}=1V_{pp}$
Dropout Voltage	V_D		1.00	1.10	V	$I_{OUT}=100\text{mA}$
			1.15	1.25	V	$I_{OUT}=500\text{mA}$
			1.20	1.30	V	$I_{OUT}=800\text{mA}$
			1.20	1.30	V	$I_{OUT}=1000\text{mA}$
Thermal Regulation			0.01	0.10	%/w	$T_A=+25^{\circ}\text{C}, 30\text{ms Pulse}$

LOW DROP LINEAR VOLTAGE REGULATORS
ELECTRICAL CHARACTERISTICS OF HV1117/A-3.6
($T_a=25^{\circ}\text{C}$, refer to the test circuits, $T_J=0$ to 125°C , $C_o=10\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Output voltage	V_{OUT}	3.564	3.600	3.636	V	$V_{IN}=5.6\text{V}, I_{OUT}=10\text{mA}, T_J=+25^{\circ}\text{C}$
		3.528	3.600	3.672	V	$V_{IN}=5\sim 10\text{V}$ 1117: $I_{OUT}=0\sim 800\text{mA}$ 1117A: $I_{OUT}=0\sim 1\text{A}$
Line regulation	ΔV_{OUT}		1	6	mV	$V_{IN}=5\sim 15\text{V}, I_{OUT}=0\text{mA}$
Load Regulation	ΔV_{OUT}		1	10	mV	$V_{IN}=5\text{V}$ 1117: $I_{OUT}=0\sim 800\text{mA}$ 1117A: $I_{OUT}=0\sim 1\text{A}$
Temperature stability	ΔV_{OUT}		0.5		%	
Long Term Stability	ΔV_{OUT}		0.3		%	1000hrs, $T_J=+125^{\circ}\text{C}$
Operating Input Voltage	V_{IN}			15	V	$I_{OUT}=100\text{mA}$
Quiescent Current	I_q		5	10	mA	$V_{IN}\leq 15\text{V}$
Current Limit	I_{LIMIT}	0.8			A	1117
		1			A	1117A
Output Noise Voltage	eN		100		μV	$B=10\text{Hz}\sim 10\text{kHz}, T_J=+25^{\circ}\text{C}$
Supply Voltage Rejection	SVR	60	75		dB	$I_{OUT}=40\text{mA}, f=120\text{Hz}, T_J=+25^{\circ}\text{C}$ $V_{IN}=6.6\text{V}, V_{RIPPLE}=1V_{pp}$
Dropout Voltage	V_D		1.00	1.10	V	$I_{OUT}=100\text{mA}$
			1.15	1.25	V	$I_{OUT}=500\text{mA}$
			1.20	1.30	V	$I_{OUT}=800\text{mA}$
			1.20	1.30	V	$I_{OUT}=1000\text{mA}$
Thermal Regulation			0.01	0.10	%/w	$T_A=+25^{\circ}\text{C}, 30\text{ms Pulse}$

ELECTRICAL CHARACTERISTICS OF HV1117/A-5.0
($T_a=25^{\circ}\text{C}$, refer to the test circuits, $T_J=0$ to 125°C , $C_o=10\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions	
Output voltage	V_{OUT}	1%	4.950	5.000	5.050	V	$V_{IN}=7\text{V}, I_{OUT}=10\text{mA}, T_J=+25^{\circ}\text{C}$
		2%	4.900	5.000	5.100		
		2%	4.900	5.000	5.100	V	$V_{IN}=6.5\sim 15\text{V}$ 1117: $I_{OUT}=0\sim 800\text{mA}$ 1117A: $I_{OUT}=0\sim 1\text{A}$
		4%	4.800	5.000	5.200		
Line regulation	ΔV_{OUT}		1	6	mV	$V_{IN}=6.5\sim 15\text{V}, I_{OUT}=0\text{mA}$	
Load Regulation	ΔV_{OUT}		1	10	mV	$V_{IN}=6.5\text{V}$ 1117: $I_{OUT}=0\sim 800\text{mA}$ 1117A: $I_{OUT}=0\sim 1\text{A}$	
Temperature stability	ΔV_{OUT}		0.5		%		
Long Term Stability	ΔV_{OUT}		0.3		%	1000hrs, $T_J=+125^{\circ}\text{C}$	
Operating Input Voltage	V_{IN}			15	V	$I_{OUT}=100\text{mA}$	
Quiescent Current	I_q		5	10	mA	$V_{IN}\leq 15\text{V}$	
Current Limit	I_{LIMIT}	0.8			A	1117	
		1			A	1117A	
Output Noise Voltage	eN		100		μV	$B=10\text{Hz}\sim 10\text{kHz}, T_J=+25^{\circ}\text{C}$	
Supply Voltage Rejection	SVR	60	75		dB	$I_{OUT}=40\text{mA}, f=120\text{Hz}, T_J=+25^{\circ}\text{C}$ $V_{IN}=8\text{V}, V_{RIPPLE}=1V_{pp}$	
Dropout Voltage	V_D		1.00	1.10	V	$I_{OUT}=100\text{mA}$	
			1.15	1.25	V	$I_{OUT}=500\text{mA}$	
			1.20	1.30	V	$I_{OUT}=800\text{mA}$	
			1.20	1.30	V	$I_{OUT}=1000\text{mA}$	
Thermal Regulation			0.01	0.10	%/w	$T_A=+25^{\circ}\text{C}, 30\text{ms Pulse}$	

LOW DROP LINEAR VOLTAGE REGULATORS
ELECTRICAL CHARACTERISTICS OF HV1117/A-ADJ

(Ta=25°C, refer to the test circuits, Tj=0 to 125°C, Co=10µF unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Reference Voltage	V _{REF}	1.188	1.200	1.212	V	V _{IN} -V _{OUT} =2V, I _{OUT} =10mA, T _J =+25°C
		1.176	1.200	1.224	V	V _{IN} -V _{OUT} =1.4~10V 1117: I _{OUT} =0~800mA 1117A: I _{OUT} =0~1A
Line regulation	ΔV _{OUT}		1	6	mV	V _{IN} -V _{OUT} =1.5~13.75V, I _{OUT} =0mA
Load Regulation	ΔV _{OUT}		1	10	mV	V _{IN} -V _{OUT} =3V
						1117: I _{OUT} =0~800mA 1117A: I _{OUT} =0~1A
Temperature stability	ΔV _{OUT}		0.5		%	
Long Term Stability	ΔV _{OUT}		0.3		%	1000hrs, T _J =+125°C
Operating Input Voltage	V _{IN}			15	V	I _{OUT} =100mA
Adjustment Pin Current	I _{ADJ}		60	120	µA	V _{IN} ≤15V
Adjustment Pin Current Change	ΔI _{ADJ}		1	5	µA	V _{IN} -V _{OUT} =1.4~10V
						1117: I _{OUT} =0~800mA 1117A: I _{OUT} =0~1A
Current Limit	I _{LIMIT}	0.8			A	1117
		1			A	1117A
						V _{IN} -V _{OUT} =5V, T _J =+25°C
Minimum Load Current	I _{O(MIN)}		2	5	mA	V _{IN} =15V
Output Noise Voltage	eN		0.003		%	B=10Hz~10kHz, T _J =+25°C
Supply Voltage Rejection	SVR	60	75		dB	I _{OUT} =40mA, f=120Hz, T _J =+25°C V _{IN} -V _{OUT} =3V, V _{RIPPLE} =1V _{pp}
Dropout Voltage	V _D		1.00	1.10	V	I _{OUT} =100mA
			1.15	1.25	V	I _{OUT} =500mA
			1.20	1.30	V	I _{OUT} =800mA
			1.20	1.30	V	I _{OUT} =1000mA
Thermal Regulation			0.01	0.10	%/W	T _A =+25°C, 30ms Pulse

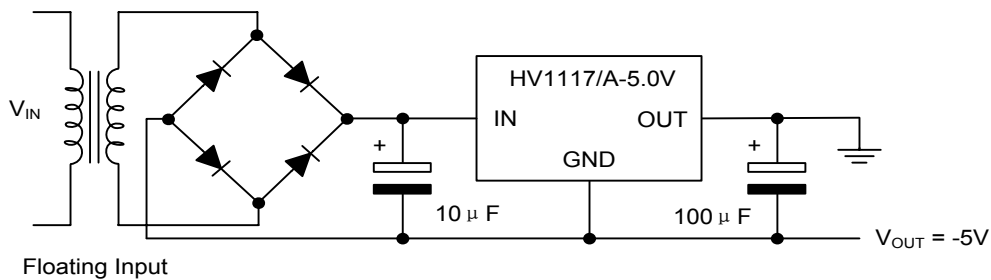
TYPICAL APPLICATION


FIG.1 Negative Supply

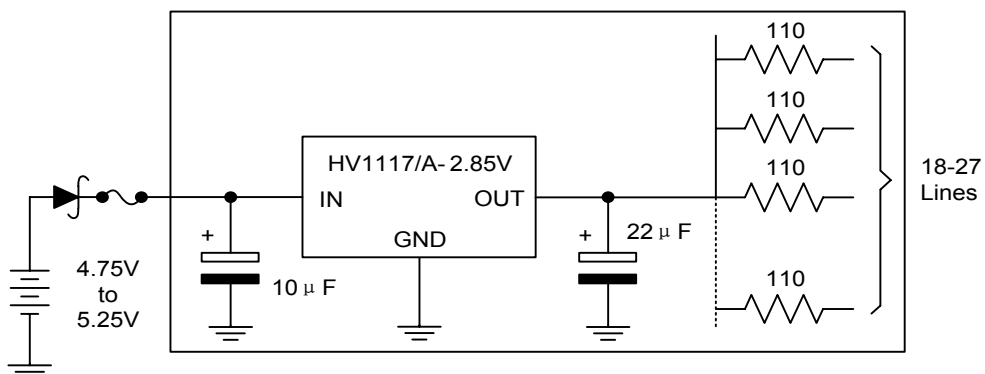


FIG.2 Active Terminator for SCSI-2 BUS

LOW DROP LINEAR VOLTAGE REGULATORS

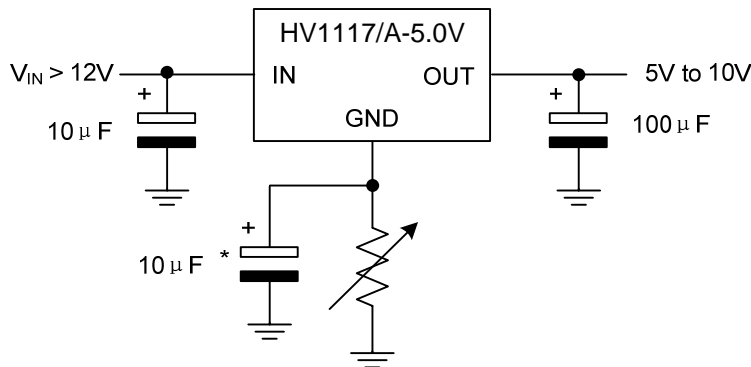


FIG.3 Circuit for Increasing Output Voltage

APPLICATION NOTE of HV1117/A ADJUSTABLE

The HV1117/A ADJUSTABLE has a reference voltage of between the OUT and ADJ pins. I_{ADJ} is 60µA typ. (120µA max.) and ΔI_{ADJ} is 1µA typ. (5µA max.).

R1 is normally fixed to 120Ω.

From figure 4 we obtain:

$$V_{OUT} = V_{REF} + R2(I_{ADJ} + I_{R1}) = V_{REF} + R2(I_{ADJ} + V_{REF} / R1) = V_{REF}(1 + R2/R1) + R2 \times I_{ADJ}$$

Usually R2 value is in the range of few KΩ, so the $R2 \times I_{ADJ}$ product could be neglected; then the above expression becomes: $V_{OUT} = V_{REF}(1 + R2/R1)$

For better load regulation, realize a good Kelvin connection of R1 and R2 is important. Particularly R1 connection must be realized very close to OUT and ADJ pin, while R2 ground connection must be placed as near as possible to the negative Load pin. Ripple rejection can be improved by introducing a 10µF electrolytic capacitor placed in parallel to the R2 resistor (See Fig. 5)

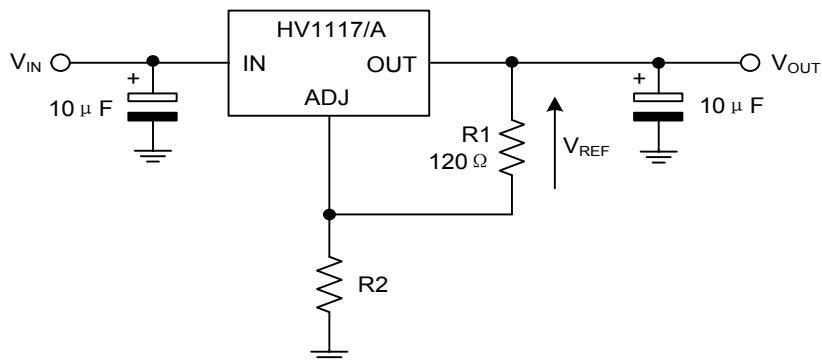


FIG.4 Adjustable Output Voltage Application Circuit

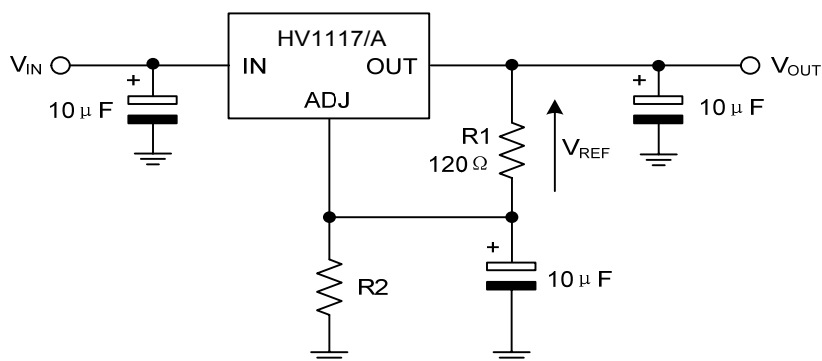
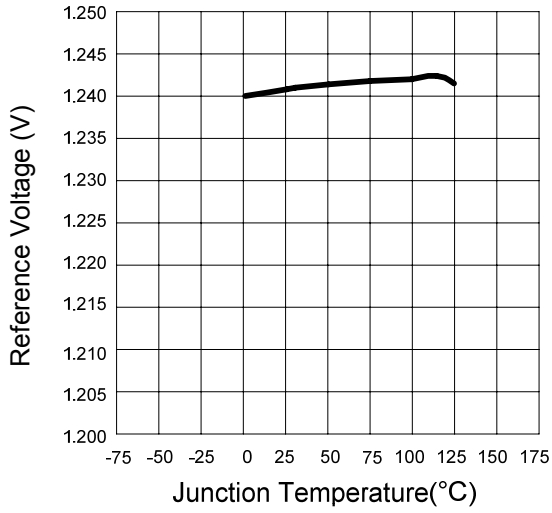


FIG.5 Adjustable Output Voltage Application with improved Ripple Rejection.

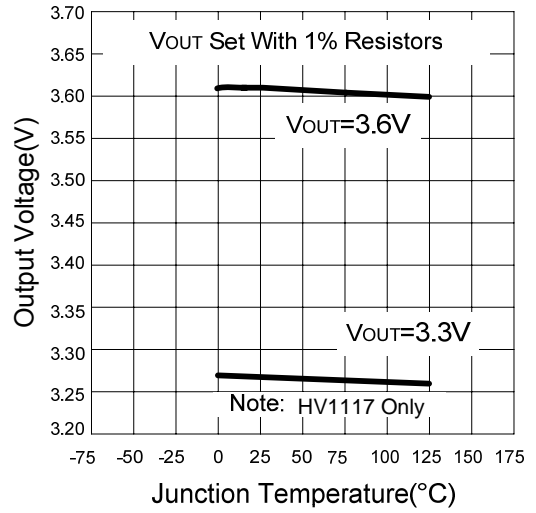
LOW DROP LINEAR VOLTAGE REGULATORS

Typical Characteristics

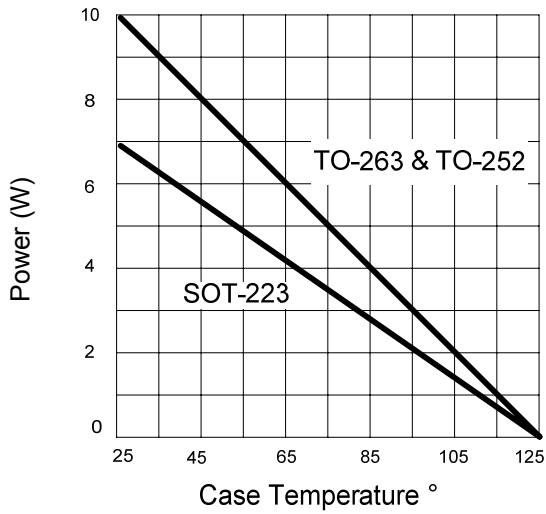
Reference Voltage vs. Temperature

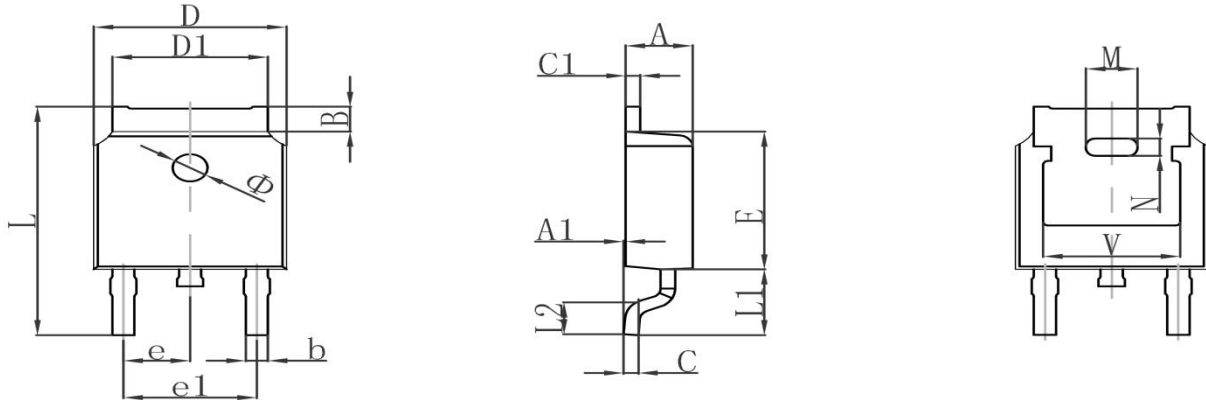


Output Voltage vs. Temperature

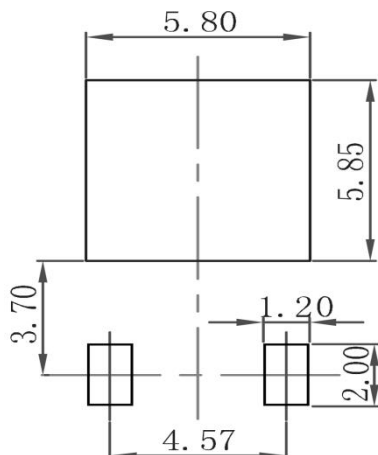


Maximum Power Dissipation

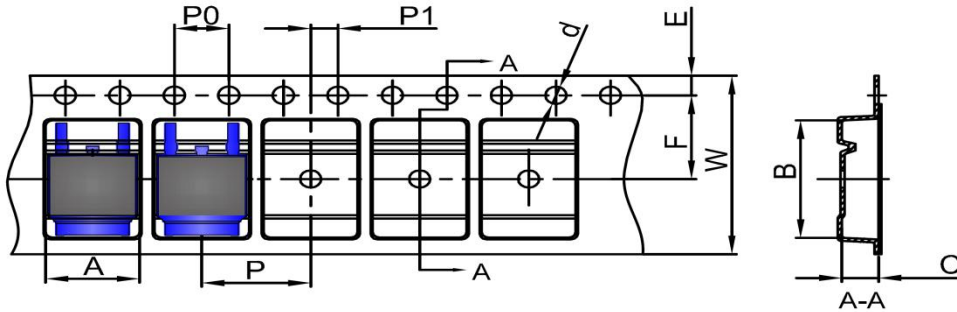


LOW DROP LINEAR VOLTAGE REGULATORS
TO-252 Package Outline Dimensions


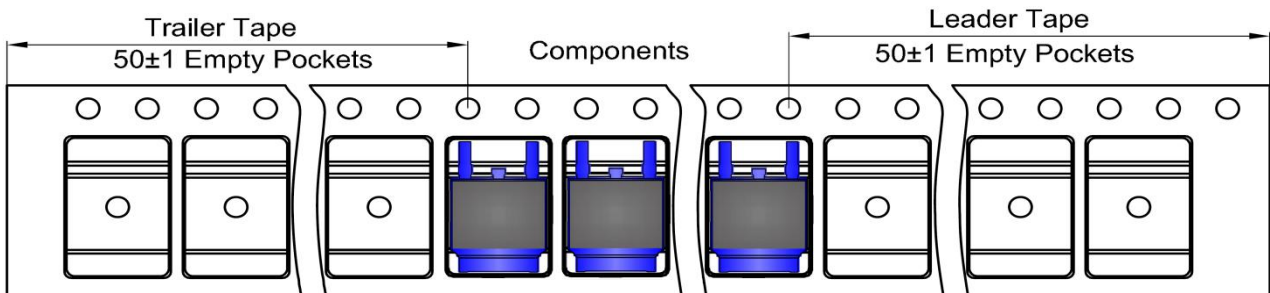
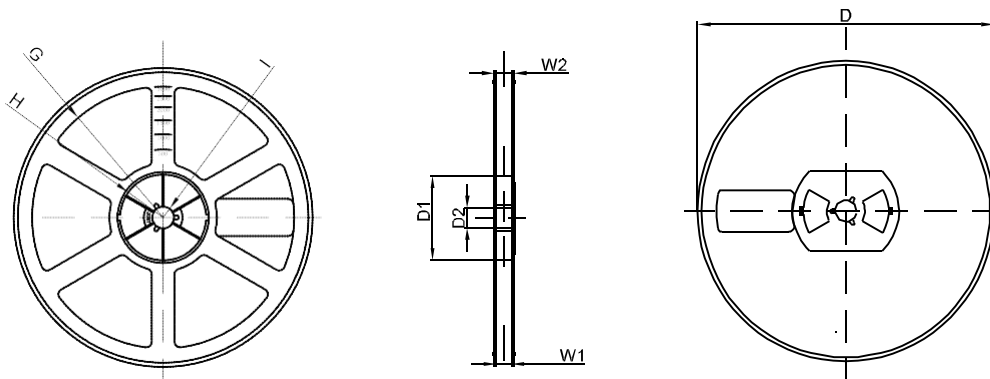
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
B	0.800	1.400	0.031	0.055
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
c1	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
E	6.000	6.200	0.236	0.244
e	2.286TYP		0.090TYP	
e1	4.327	4.727	0.170	0.186
M	1.778REF		0.070REF	
N	0.762REF		0.018REF	
L	9.800	10.400	0.386	0.409
L1	2.9REF		0.114REF	
L2	1.400	1.700	0.055	0.067
V	4.830REF		0.190REF	
Φ	1.100	1.300	0.043	0.051

TO-252 Suggested Pad Layout

Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

LOW DROP LINEAR VOLTAGE REGULATORS
TO-252 Tape and Reel
TO-252 Embossed Carrier Tape


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
TO-252	6.90	10.50	2.70	Ø1.55	1.75	7.50	4.00	8.00	2.00	16.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

TO-252 Tape Leader and Trailer

TO-252 Reel


DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
13" DIA	Ø330.00	100.00	Φ21.00	R151.00	R56.00	R6.50	16.40	21.00
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1