



SK7915AU_SK7915U

3-Terminal 1.5A Negative Voltage Regulator

Features

- Output current in excess of 1.5A
- -15V output voltages available
- Internal Thermal overload protection
- Short circuit protection
- Output transistor SOA protection

Description

The SK7915AU/SK7915U series of three-terminal negative regulators are available in TO-220/TO-252 package and with several fixed output voltages, making them useful in a wide range of applications. Each type employs internal current limiting, thermal shut-down and safe operating area protection, making it essentially indestructible.

Pin Configuration(TO-220&TO-252)		
Pin NO.	Pin Name	Function
1	GND	GND pin
2	VIN	Input voltage pin
3	VOUT	Output voltage pin

TO-220

TO-252

Absolute Maximum Ratings

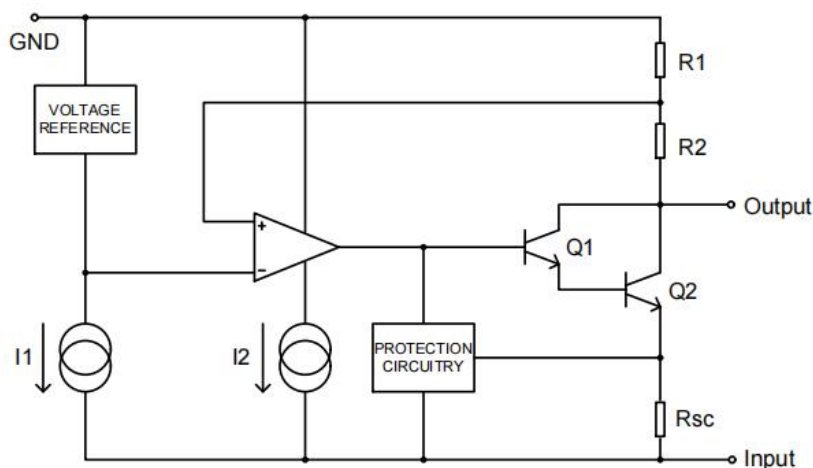
Parameter	Symbol	Value	Unit
Input Voltage	V_I	-35	V
Thermal resistance junction-air	$R_{\theta JA}$	65	$^{\circ}\text{C}/\text{W}$
Thermal resistance junction-cases	$R_{\theta JC}$	5	$^{\circ}\text{C}/\text{W}$
Operating Temperature	T_{opr}	0~125	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-65~150	$^{\circ}\text{C}$

Note: 1. Thermal resistance test board Size: 76.2mmX114.3mmX1.6mm(1S0P);

JEDEC standard: JESD51-3, JESD51-7.

2. Assume no ambient airflow

Block Diagram





SK7915AU_SK7915U

Ordering Information

Part No.	Marking	Package
SK7915AU	7915AU	TO-220
SK7915U	7915U	TO-252

SK7915AU/SK7915U Electrical Characteristics

(Refer to test circuits, $-40 < T_J < 125^{\circ}\text{C}$, $I_O = 500\text{mA}$, $V_I = -23\text{V}$, $C_I = 0.33\mu\text{F}$, $C_O = 0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Output Voltage	V_O	$T_J = 25^{\circ}\text{C}$	-14.4	-15	-15.6	V
		$5\text{mA} < I_O < 1\text{A}$, $V_I = -17\text{V}$ to -30V	-14.25	-15	-15.75	V
Line Regulation ⁽¹⁾	ΔV_{LINE}	$T_J = 25^{\circ}\text{C}$, $V_I = -17.5\text{V}$ to -30V		12	300	mV
		$T_J = 25^{\circ}\text{C}$, $V_I = -20\text{V}$ to -26V		6	150	mV
Load Regulation ⁽¹⁾	ΔV_{LOAD}	$T_J = 25^{\circ}\text{C}$, $I_O = 5\text{mA}$ to 1.5A		12	300	mV
		$T_J = 25^{\circ}\text{C}$, $I_O = 250\text{mA}$ to 750mA		4	150	mV
Quiescent Current	I_Q	$T_J = 25^{\circ}\text{C}$		3	6	mA
Quiescent Current Change	ΔI_Q	$I_O = 5\text{mA}$ to 1A		0.05	0.5	mA
		$V_I = -17.5\text{V}$ to -30V		0.1	1	mA
Temperature Coefficient of V_D	$\Delta V_O / \Delta T$	$I_O = 5\text{mA}$		1.5		mV/ $^{\circ}\text{C}$
Output Noise Voltage	V_N	$f = 10\text{Hz}$ to 100kHz , $T_J = 25^{\circ}\text{C}$		250		μV
Ripple Rejection	PSRR	$f = 120\text{Hz}$, $\Delta V_I = 10\text{V}$	54	60		dB
Dropout voltage	V_D	$I_O = 1\text{A}$, $T_J = 25^{\circ}\text{C}$		2		V
Short Circuit Current	I_{SC}			1.5		A

Note: 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.



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Typical Application

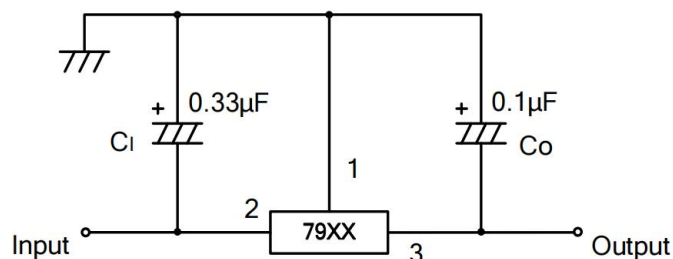


Fig.1 Negative fixed output regulator

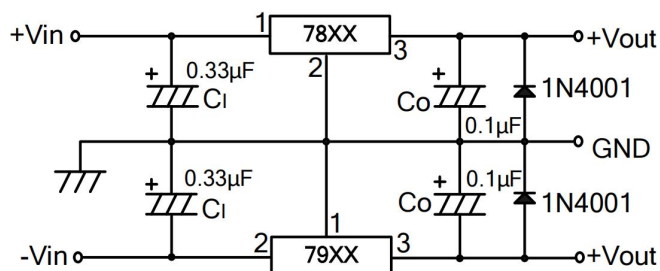
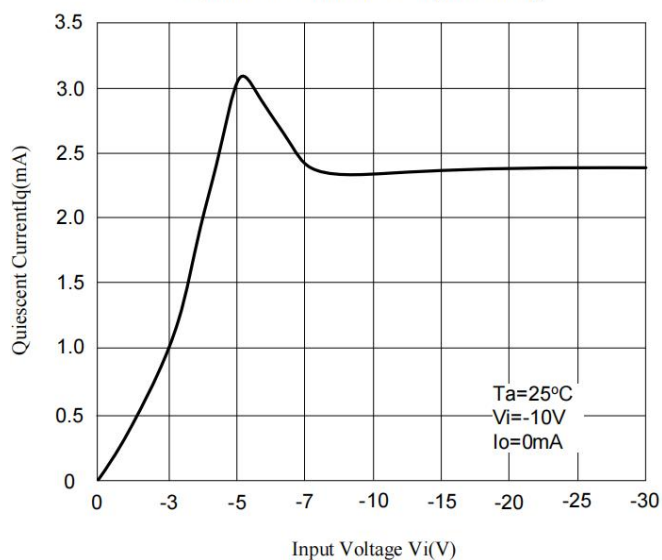


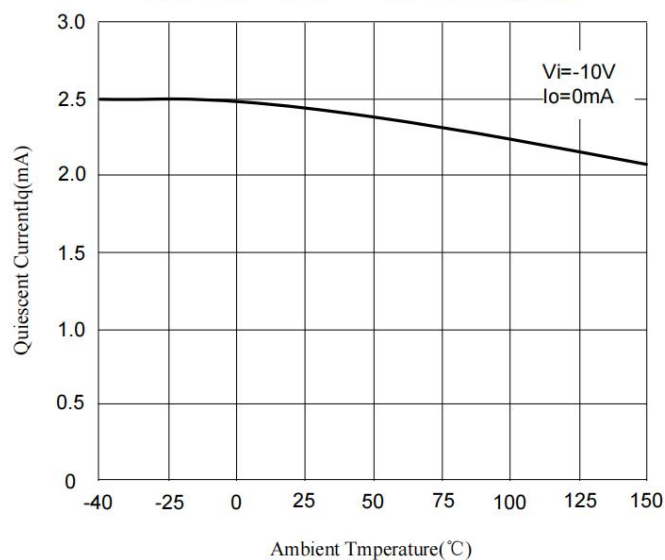
Fig.2 Split power supply

Typical Characteristics

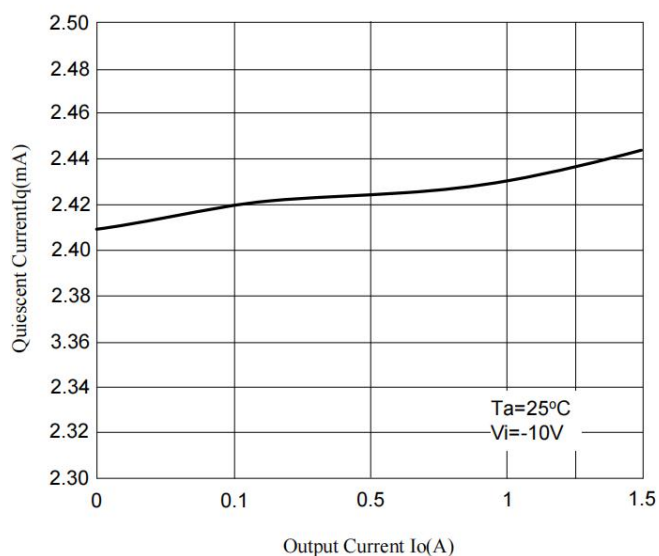
Quiescent Current vs. Input Voltage



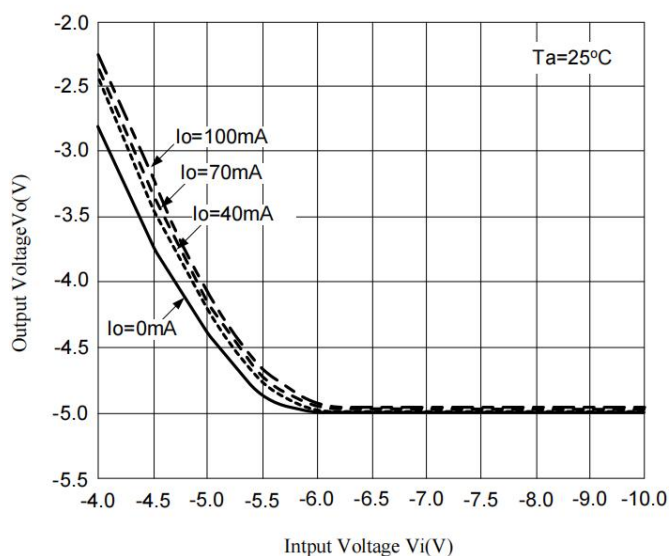
Quiescent Current vs. Ambient Temperature



Quiescent Current vs. Output Current



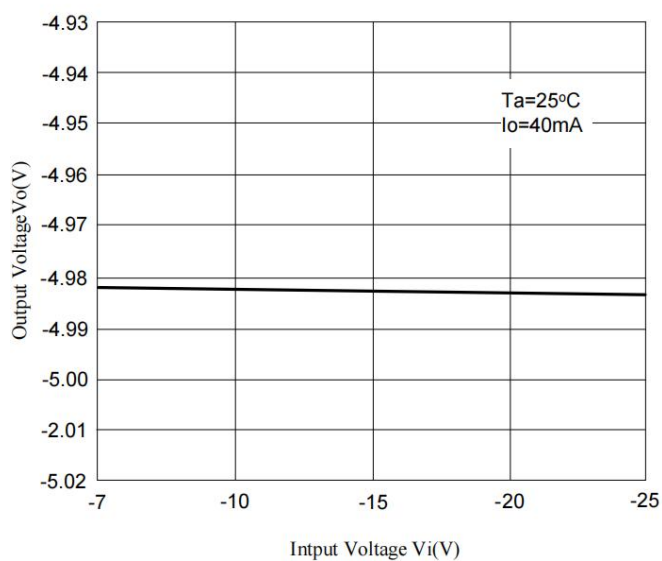
Input-Output Voltage Differential Characteristic



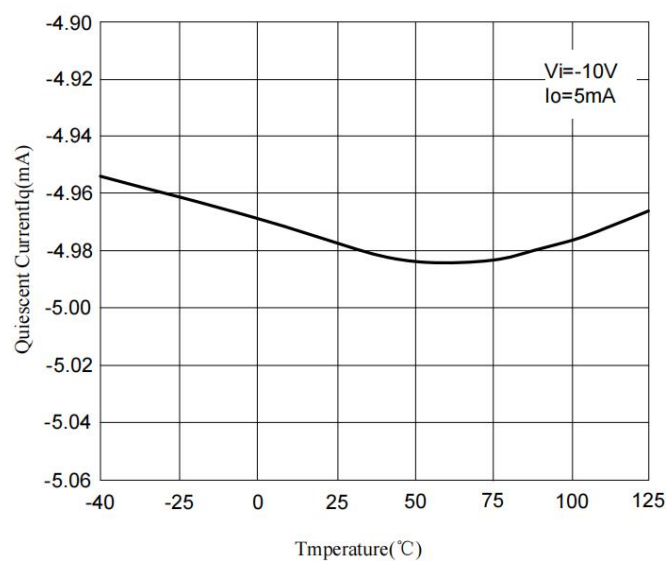


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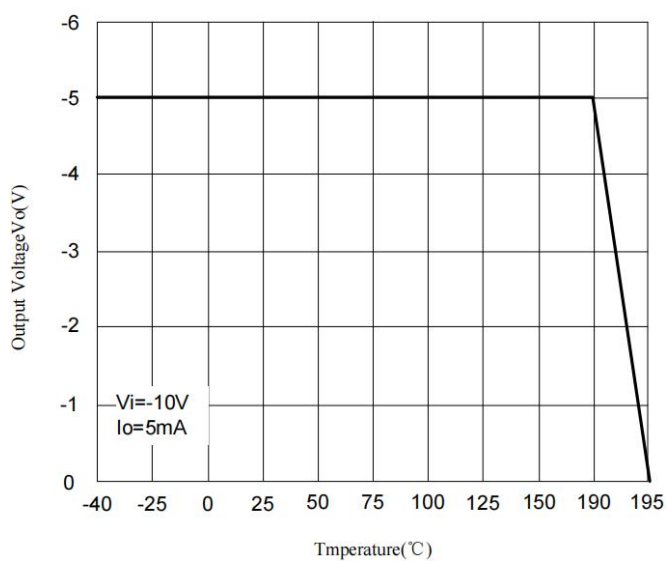
Output Voltage vs. Input Voltage



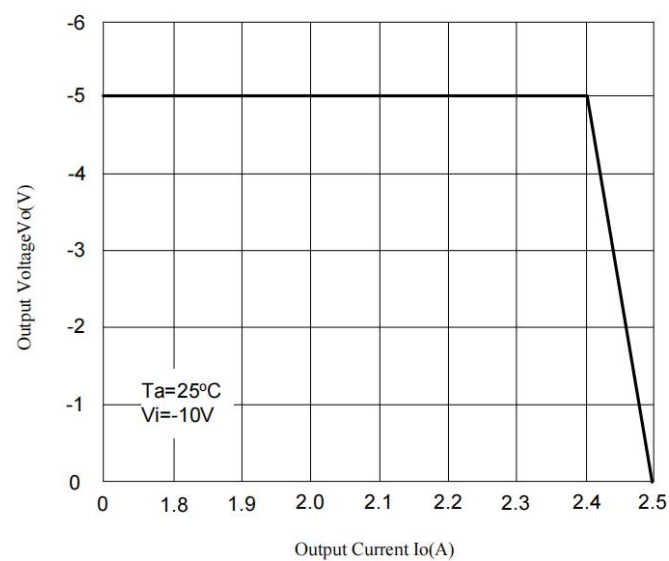
Drift Curve



Thermal Protection Curve



Overcurrent Protection



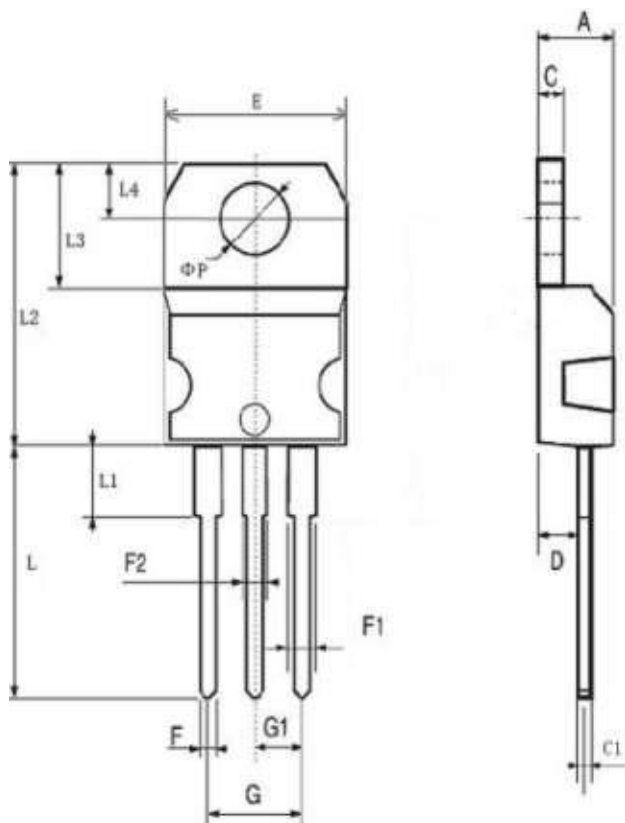


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Package Information

TO-220

Dimensions in mm



符号 Symbol	最小值 Min	典型值 Typ	最大值 Max
A	4.4		4.6
C	1.2		1.32
C1	0.38		0.55
D	2.4		2.65
E	9.85		10.85
F	0.6		0.85
F1	1.22		1.4
F2	1.22		1.4
G	4.93	5.08	5.23
G1	2.39	2.54	2.69
L	13.1		13.9
L1	3.75		4.75
L2	15.25		15.75
L3	6.25		6.75
L4	2.65		2.85
Φ p	3.75	3.84	3.95

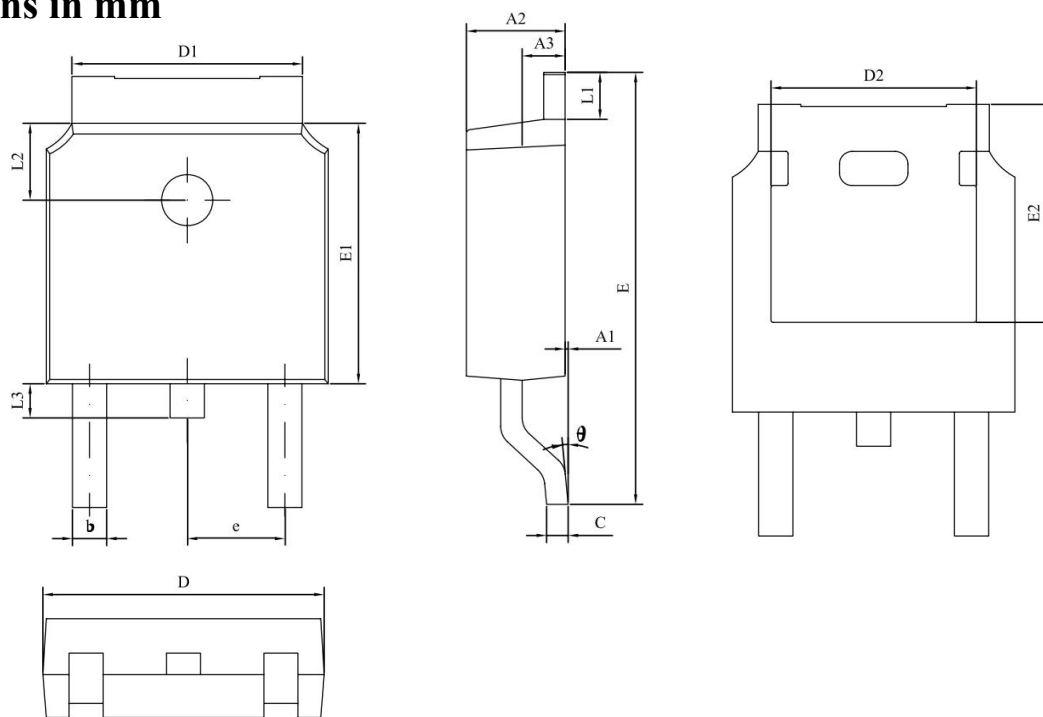


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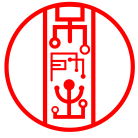
Package Information

TO-252

Dimensions in mm



Symbol	Millimeters	
	Min	Max
A1	0.00	0.13
A2	2.18	2.39
A3	0.90	1.10
b	0.65	0.85
c	0.46	0.61
D	6.35	6.73
D1	4.95	5.46
D2	4.32	
E	9.40	10.41
E1	5.97	6.22
E2	5.21	
e	2.286 BSC	
L1	0.89	1.27
L2	1.70	1.90
L3	0.60	1.00
θ	0°	8°



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