



PRELIMINARY

# SOLID STATE DEVICES, INC.

14830 Valley View Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-7855 \* Fax: (562) 404-1773

## Designer's Data Sheet

### SVR1033N, P, E, & B

### 3 Amp NEGATIVE ADJUSTABLE LINEAR VOLTAGE REGULATOR

#### Part Number /Ordering Information <sup>1/</sup>

SVR1033 N DB H

- Screening <sup>2/</sup>:** \_ = Not Screened  
H = High Rel Level  
K = Space Level  
R = Radiation Tolerant
- Lead Bend: <sup>3/</sup>** \_ = Straight  
DB = Down Bend  
UB = Up Bend
- Package:** N = TO-254  
P = TO-254Z  
E = MilPack I  
B = MilPack II

#### FEATURES:

- 3A Output over -1.2 to -32V Voltage Range
- Internal Current, Power, and Thermal Limiting
- Eutectic Die Attach
- Replaces LT1033 Types
- Maximum Output Voltage Error of 1%
- Isolated Hermetically Sealed Power Package
- 150°C Operating Temperature
- Custom Lead Forming Available
- Ceramic Seal Package Available
- Class H or K (Space) Screening Available

MAXIMUM RATINGS	SYMBOL	VALUE	UNITS
Power Dissipation <sup>4/</sup>	P <sub>D</sub>	Internally Limited, 30	W
Input to Output Voltage Differential	ΔV <sub>IN/OUT</sub>	35	V
Maximum Current	I <sub>MAX</sub>	3	A
Operating Junction Temperature	T <sub>J</sub>	-55 TO +150	°C
Storage Temperature	T <sub>STG</sub>	-65 TO +150	°C

TO-258 (N):	TO-259 (P):	MilPack I (E):	MilPack II (B):

#### PIN ASSIGNMENT

FUNCTION	PIN 1	PIN 2	PIN 3
Voltage Regulator	Adjust	Input	Output

**NOTE:** All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

**DATA SHEET #: SVR004A**

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Electrical Characteristics <sup>4/</sup>	t°	SYMBOL	MIN	TYP	MAX	UNITS
Reference Voltage $\Delta V = 5V, I_{OUT} = 5mA$ $5mA \leq I_{OUT} \leq I_{MAX}, 3V \leq \Delta V \leq 35V, P \leq P_{MAX}$	25	$V_{REF}$	-1.238	-1.250	-1.262	V
	*		-1.215	-1.250	-1.850	V
Line Regulation <sup>5/</sup> $3V \leq \Delta V \leq 35V$	25	$\frac{\Delta V_{OUT}}{\Delta V_{IN}}$	--	0.005	0.015	%/V
	*		--	0.02	0.04	%/V
Load Regulation <sup>5/</sup> ( $10mA \leq I_{OUT} \leq I_{MAX}$ )	25	$\frac{\Delta V_{OUT}}{\Delta I_{OUT}}$	--	10	50	mV
	25		--	0.2	1.0	%
	*		--	20	75	mV
	*		--	0.4	1.5	%
Thermal Regulation 10 msec Pulse	25		--	.002	.02	%/W
Ripple Rejection $V_{OUT} = -10V, f=120Hz$	25		56	66	--	dB
	25		70	80	--	dB
Adjust Pin Current	*	$I_{ADJ}$	--	65	100	$\mu A$
Adjust Pin Current Change $10mA \leq I_{OUT} \leq I_{MAX}$ $3V \leq \Delta V \leq 35V$	*	$\Delta I_{ADJ}$	--	0.2	2	$\mu A$
	*		--	1.0	5	$\mu A$
Minimum Load Current $\Delta V \leq 35V$ $\Delta V \leq 10V$	25		--	2.5	5.0	mA
	25		--	1.2	3.0	mA
Current Limit $\Delta V \leq 10V_{DC}$ <sup>5/</sup> $\Delta V = 35V$	25	$I_{SC}$	3	4.3	6	A
	25		0.5	1.3	2.5	A
Temperature Stability $T_{MIN} \leq T \leq T_{MAX}$	*	$\frac{\Delta V_{OUT}}{\Delta T}$	--	0.3	1.5	%
Long Term Strability T = 1000 Hours	125	$\frac{\Delta V_{OUT}}{\Delta V_{time}}$	--	0.003	1.0	%
RMS Output Noise (% of $V_{OUT}$ ) 10 Hz $\leq f \leq$ 10 kHz	25	$e_n$	--	--	--	%
Thermal Resistance Junction to Case Package N and Z Package E and B		$R_{\theta JC}$	--		1.6	$^{\circ}C/W$
			--		1.2	$^{\circ}C/W$

**NOTES:**

- \* Full Temperature Range
- <sup>1/</sup> For Ordering Information, Price, and Availability Contact Factory.
- <sup>2/</sup> Screening per MIL-STD-883.
- <sup>3/</sup> For Lead Bend Options Request Document # DSB-001 (Available for Download @ ssdi-power.com).
- <sup>4/</sup> Unless otherwise specified, these specifications apply:  $\Delta V = 5V$  and  $I_{OUT} = 5mA$ . Power dissipation is internally limited. However, these specifications apply for power dissipation up to 30W,  $I_{MAX} = 3A$ .
- <sup>5/</sup> Testing is done using a pulsed low duty cycle technique.



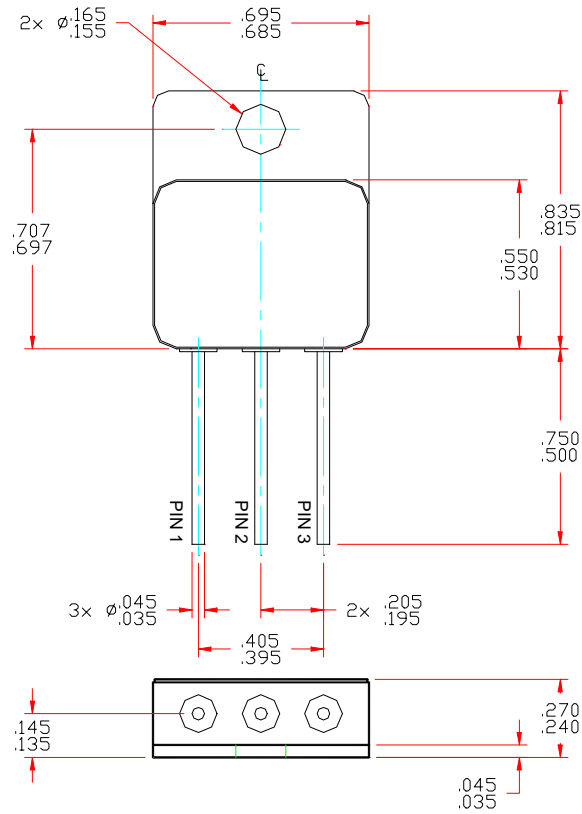
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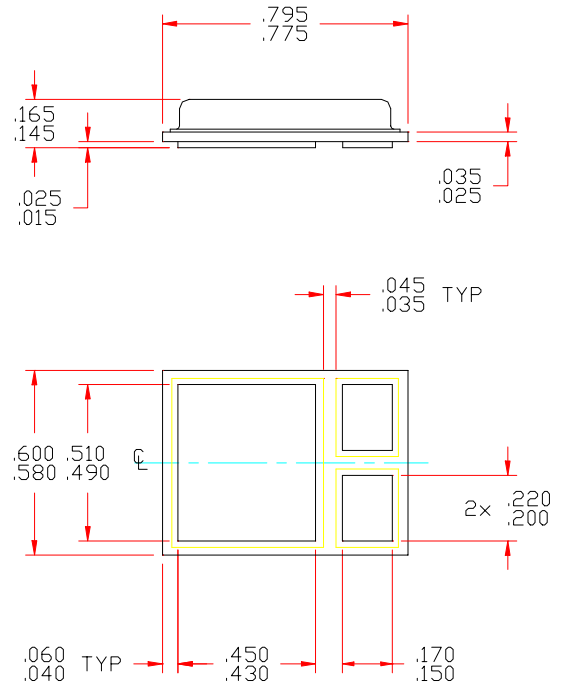
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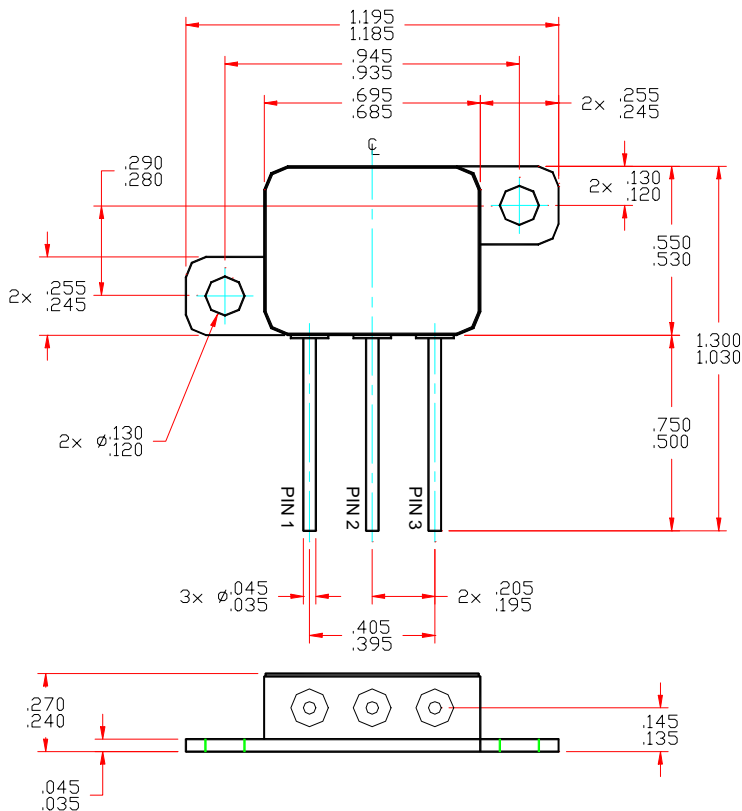
TO-258 (N):



MilPack II (B):



TO-259 (P)



MilPack I (E):

