

1 and 2 WATT DC/DC CONVERTERS

Key Features

- Compact SIP and DIP Packages
- Input/Output Isolated
- Self-recovering Short Circuit Protection
- No derating to 71° C
- Single and Dual Output Models
- Designed to Meet FCC SEC 15, Sub Part J, A and B

Applications

- OP-Amps
- A/D, D/A and F/V converters
- RAM
- EPROMS and EEPROMS
- ECL
- microprocessors negative biasing



These converters provide economical space and efficiency solutions where systems require isolation at the load point. Wherever 5 VDC or 12 VDC are available, these converters enable the designer to have either a positive or negative voltage compatible with today's design and assembly requirements. They operate without derating or heat sinking. Solid tantalum capacitors are used to provide reliability. Applications include OP-Amps, A/D, D/A and F/V converters, RAM, EPROMS, EEPROMS, ECL and microprocessors or negative biasing applications.

General Electrical Specifications

(Specifications at Nominal Input and 25 C, nominal input voltage and rated output current unless otherwise noted.)

Parameter	Limits	Conditions
Input Voltage Range	4.75 - 5.25 VDC 10.80 - 13.20 VDC	5V Input Devices 12V Input Devices
Input Filter	Filter Capacitor	
Input/Output Isolation	10 ³ megohms (Min) 40pf (Max) 500 VDC (Min)	All Device Types
Output Accuracy	± 5%	Nominal Line, Full Load
2SP5U5.	± 3%	
Load Regulation		
<i>Regulated Models</i>	0.5% 1% 2%	NL to FL Dual O/P NL to FL Single O/P NL to FL Q5R5-5
<i>Unregulated Models</i>	10%	NL to FL Nom. Input
Line Regulation		
<i>Regulated Models</i>	0.5%	FL, Low Line to High Line $\Delta V_o / \Delta V_{in}$
<i>Unregulated Models</i>	1.2% per 1%	

Parameter	Limits	Conditions
Output Voltage Temperature Coefficient: Regulated Unregulated	$\pm .015\%$ per $^{\circ}\text{C}$ $\pm 0.05\%$ per $^{\circ}\text{C}$	Typical Typical
Output Noise/Ripple	Dual 30mV P-P Single 100mV P-P	20Hz - 20 MHz Bandwidth (15 μf , across each output)
Short Circuit Protection Duration	Current Limited Continuous	All Units
Switching Frequency	100 KHz	Typical
Operating Temperature	-25 $^{\circ}\text{C}$ to +71 $^{\circ}\text{C}$	To 71 $^{\circ}\text{C}$
Derating	None	
Storage Temperature	-55 $^{\circ}\text{C}$ to +125 $^{\circ}\text{C}$	

Selection Guide - Regulated Products

Device Type	Input Voltage Range VDC	Input Current (A) @ Max	Output Voltage VDC	Max Output Current (mA)	Package/ Pinout
S5R5	4.75 - 5.25	.275	+ or - 5	100	SA
Q5R5	4.75 - 5.25	.275	+ or - 5	100	QA
S5R12	4.75 - 5.25	.400	+ or - 12	80	SA
Q5R12	4.75 - 5.25	.400	+ or - 12	80	QA
S5R15	4.75 - 5.25	.365	+ or - 15	65	SA
Q5R15	4.75 - 5.25	.365	+ or - 15	65	QA
Q5R12-12	4.75 - 5.25	.440	± 12	± 40	QB
Q5R15-15	4.75 - 5.25	.500	± 15	± 33	QB
Q12R5	10.80 - 13.20	.120	+ or - 5	100	QA
Q12R12	10.80 - 13.20	.177	+ or - 12	80	QA
S12R15	10.80 - 13.20	.177	+ or - 15	65	SA
Q12R15-15	10.80 - 13.20	.185	± 15	± 33	QB

Selection Guide - Unregulated Products

Device Type	Input Voltage Range VDC	Input Current (A) @ Max	Output Voltage VDC	Max Output Current (mA)	Package/ Pinout
SP5	4.75 - 5.25	.400	+ or - 5	200	SA
QP5	4.75 - 5.25	.400	+ or - 5	200	QA
SA12-12	4.75 - 5.25	.400	± 12	± 40	SC
QA12-12	4.75 - 5.25	.400	± 12	± 40	QC
SA15-15	4.75 - 5.25	.400	± 15	± 33	SC
QA15-15	4.75 - 5.25	.400	± 15	± 33	QC
S24P5	21.60 - 26.40	.090	+ or - 5	250	SA

