



Size: Weight: 0.74 x 0.54 x 0.33 inches (4.5g) 18.9 x 13.7 x 8.45 mm

FEATURES

- 1 Watt Output Power
- 1500VDC I/O Isolation
- Low Ripple & Noise
- Remote ON/OFF Control
- Fully Regulated Single & Dual Outputs
- MTBF > 2,800,000 Hours

- 2:1 Wide Input Voltage Range
- -40°C to +85°C Operating Temperature
- Continuous Short Circuit Protection
- Ultra Compact SMT Package
- · Qualified for Lead-free Reflow Process
- CSA/UL⁽³⁾/IEC/EN 60950-1 Safety Approvals (Pending)

DESCRIPTION

The DCMSW1 series of DC/DC converters provides 1 Watt of output power in an ultra compact SMT package. These converters operate over 2:1 input voltage ranges of 4.5-9VDC, 9-18VDC, 18-36VDC, and 36-75VDC. This series also has fully regulated single and dual output voltages of 5V, 12V, 15V, ±12V, and ±15V. The DCMSW1 series' impressive efficiencies enable these modules to deliver their fully rated output power from –40°C to +75°C without derating. Other features include remote on/off control, low ripple and noise, 1500VDC I/O isolation, and continuous short circuit protection. The very small footprint of these converters makes them an ideal solution for space critical applications in communication equipment, instrumentation, and many other battery operated applications.

MODEL SELECTION TABLE											
SINGLE OUTPUT MODELS											
Model Number	Input	Output	Output	ut Current Input		Current	Reflected	Output	Efficiency	Maximum	
	Voltage	Voltage	Min Max I		No Load Max Load		Ripple Current	Power	Efficiency	Capacitive Load	
DCMSW1-05S05	5 VDC	5 VDC	0mA	200mA		256mA		1W	78%	1680µF	
DCMSW1-05S12	(4.5 - 9	12 VDC	0mA	83mA	40mA 252mA 248mA		80mA	1W	79%	820µF	
DCMSW1-05S15	VDC)	15 VDC	0mA	67mA				1W	81%	680µF	
DCMSW1-12S05	12 VDC	5 VDC	0mA	200mA	105mA 20mA 105mA		40mA	1W	79%	1680µF	
DCMSW1-12S12	(9 - 18	12 VDC	0mA	83mA				1W	79%	820µF	
DCMSW1-12S15	VDC)	15 VDC	0mA	67mA		102mA		1W	82%	680µF	
DCMSW1-24S05	24 VDC	5 VDC	0mA	200mA		53mA		1W	79%		
DCMSW1-24S12	(18 - 36	12 VDC	0mA	83mA	10mA	51mA 30mA		1W	82%	820µF	
DCMSW1-24S15	VDC)	15 VDC	0mA	67mA		51mA		1W	82%	680µF	
DCMSW1-48S05	48 VDC	5 VDC	0mA	200mA		26mA		1W	79%	1680µF	
DCMSW1-48S12	(36 - 75	12 VDC	0mA	83mA	7mA 26mA 26mA		20mA	1W	80%	820µF	
DCMSW1-48S15	VDC)	15 VDC	0mA	67mA				1W	80%	680µF	
DUAL OUTPUT MODELS											
				DUA	AL OUTPU	I MODELS					
Model Number	Input	Output	Output	Current	Input	I MODELS Current	Reflected	Output	Efficiency	Maximum	
Model Number	Input Voltage	Output Voltage	Output Min					Output Power	Efficiency	Maximum Capacitive Load	
Model Number DCMSW1-05D12	Voltage 5 VDC			Current	Input No Load	Current	Reflected Ripple Current		Efficiency 79%		
	Voltage	Voltage	Min	Current	Input	Current Max Load	Reflected	Power		Capacitive Load	
DCMSW1-05D12	Voltage 5 VDC (4.5 - 9 VDC) 12 VDC	Voltage ±12 VDC	Min 0mA	Current Max ±42mA	Input No Load 40mA	Current Max Load 255mA	Reflected Ripple Current 80mA	Power 1W	79%	Capacitive Load ±470µF	
DCMSW1-05D12 DCMSW1-05D15	Voltage 5 VDC (4.5 - 9 VDC)	Voltage ±12 VDC ±15 VDC	Min 0mA 0mA	Current Max ±42mA ±33mA	Input No Load	Current Max Load 255mA 248mA	Reflected Ripple Current	Power 1W 1W	79% 80%	Capacitive Load ±470μF ±330μF	
DCMSW1-05D12 DCMSW1-05D15 DCMSW1-12D12	Voltage 5 VDC (4.5 - 9 VDC) 12 VDC (9 - 18 VDC) 24 VDC	Voltage ±12 VDC ±15 VDC ±12 VDC	Min 0mA 0mA 0mA	Current Max ±42mA ±33mA ±42mA	Input No Load 40mA	Current Max Load 255mA 248mA 104mA	Reflected Ripple Current 80mA 40mA	Power 1W 1W 1W	79% 80% 81%	Capacitive Load ±470μF ±330μF ±470μF	
DCMSW1-05D12 DCMSW1-05D15 DCMSW1-12D12 DCMSW1-12D15	Voltage 5 VDC (4.5 - 9 VDC) 12 VDC (9 - 18 VDC)	Voltage ±12 VDC ±15 VDC ±12 VDC ±15 VDC	Min 0mA 0mA 0mA 0mA	Current Max ±42mA ±33mA ±42mA ±33mA	Input No Load 40mA	Current Max Load 255mA 248mA 104mA	Reflected Ripple Current 80mA	Power 1W 1W 1W	79% 80% 81% 80%	Capacitive Load ±470μF ±330μF ±470μF ±330μF	
DCMSW1-05D12 DCMSW1-05D15 DCMSW1-12D12 DCMSW1-12D15 DCMSW1-24D12	Voltage 5 VDC (4.5 - 9 VDC) 12 VDC (9 - 18 VDC) 24 VDC (18 - 36 VDC) 48 VDC	Voltage ±12 VDC ±15 VDC ±12 VDC ±15 VDC ±12 VDC	Min OmA OmA OmA OmA	Current Max ±42mA ±33mA ±42mA ±33mA ±42mA	Input No Load 40mA 20mA	Current Max Load 255mA 248mA 104mA 103mA 51mA	Reflected Ripple Current 80mA 40mA	Power 1W 1W 1W 1W 1W	79% 80% 81% 80% 82%	Capacitive Load ±470μF ±330μF ±470μF ±330μF ±470μF	
DCMSW1-05D12 DCMSW1-05D15 DCMSW1-12D12 DCMSW1-12D15 DCMSW1-24D12 DCMSW1-24D15	Voltage 5 VDC (4.5 - 9 VDC) 12 VDC (9 - 18 VDC) 24 VDC (18 - 36 VDC)	Voltage ±12 VDC ±15 VDC ±12 VDC ±15 VDC ±15 VDC ±15 VDC	Min OmA OmA OmA OmA OmA	E Current Max ±42mA ±33mA ±42mA ±33mA ±42mA ±33mA	Input No Load 40mA	Current Max Load 255mA 248mA 104mA 103mA 51mA 50mA	Reflected Ripple Current 80mA 40mA	Power 1W 1W 1W 1W 1W 1W	79% 80% 81% 80% 82%	Capacitive Load ±470μF ±330μF ±470μF ±330μF ±470μF ±330μF	

- 1. All DC/DC converters should be externally fused at the front end for protection.
- 2. Other input and output voltages may be available, please contact factory.
- 3. This product is Listed to applicable standards and requirements by UL.
- *Due to advances in technology, specifications are subject to change without notice.



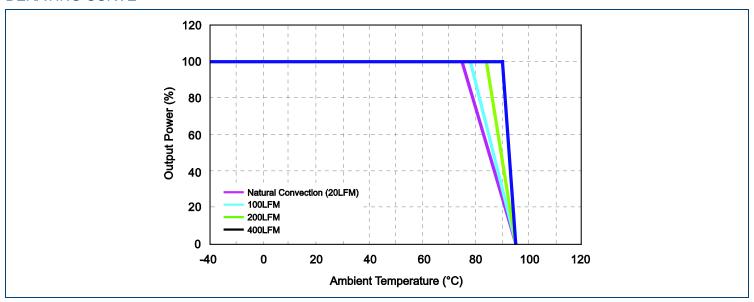
SPECIFICATIONS: DCMSW1 SERIES

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted. We reserve the right to change specifications based on technological advances.

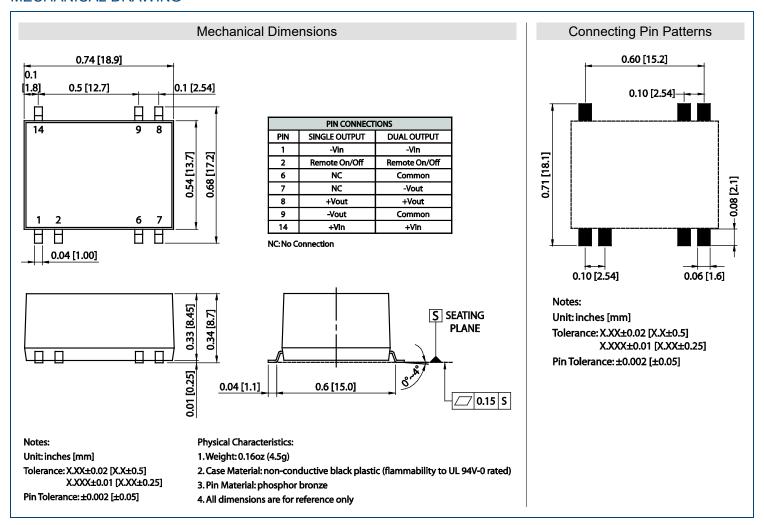
Input Voltage Range	ODE OFFICE ATION	TEST COMPLETION	10		_				
Imput Voltage Range	SPECIFICATION	TEST CONDITION	5	Min	Тур	Max	Unit		
Imput Voltage Range	INPUT SPECIFICATIONS								
Input Voltage Range		5VDC nominal input models		4.5	5	9			
A VPC nominal input models			_		_				
A VDC nominal input models	Input Voltage Range	24 VDC nominal input models	_			VDC			
Input Surge Voltage (1sec, max.) 5VDC nominal input models -0.7 25 24 VDC nominal input models -0.7 25 24 VDC nominal input models -0.7 100 25 VDC 25 VDC 25 VDC 25 VDC 26 VDC 26 VDC 27 VDC 27 VDC 28 VDC nominal input models -0.7 100 27 VDC 28 VDC nominal input models -0.7 100 27 VDC 28 VDC nominal input models -0.7 100 28 VDC 28 VDC nominal input models -0.7 100 28 VDC 28 VDC nominal input models -0.7 100 28 VDC 28 VDC nominal input models -0.7 100 28 VDC 28 VDC nominal input models -0.7 25 VDC 28 VDC nominal input models -0.7 28 VDC 28 VDC nominal input models -0.7 28 VDC 28 VDC 28 VDC nominal input models -0.7 28 VDC 28									
Imput Surge Voltage (1sec, max.) 12VDC nominal input models -0.7 25 24 VDC nominal input models -0.7 5.0 4.5		48 VDC nominal input models		48					
A VDC nominal input models		5VDC nominal input models		-0.7		15			
A VDC nominal input models		12VDC nominal input models	-0.7		25				
48 VDC nominal input models -0.7 100 5 VDC nominal input models 12 VDC nominal input models 13 18 VDC 18 18 VDC 19 VDC 18 18 VDC 19 VDC 18 VDC 18 VDC 18 VDC 18 VDC 18 VDC	Input Surge Voltage (1sec, max.)		_			VDC			
Start-Up Threshold Voltage									
Start-Up Threshold Voltage			-0.7						
24 VDC nominal input models									
A VLC nominal input models 18 49 VLC nominal input models 18 49 VLC nominal input models 500	Start I in Threehold Valtage				9	VDC			
Maximum Max	Start-Op Threshold Voltage	24 VDC nominal input models			18				
Input Current Input Filter						36			
Input Filter	Input Current	10 VB G Hommar inpactine dele			Soo.				
Input Fuse									
Input Fuse	Input Filter								
Input Puse 24 VDC nominal input models 48 VDC nominal input models 60mA slow-blow type		5VDC nominal input models		500mA slow-blow type					
Input Puse 24 VDC nominal input models 48 VDC nominal input models 60mA slow-blow type		12VDC nominal input models							
OUTPUT SPECIFICATIONS Output Voltage Output Voltage Setting Accuracy Line Regulation Low line to high line Load Regulation Min load to full load Dual Output Models	Input Fuse								
OUTPUT SPECIFICATIONS Output Voltage Output Voltage Output Voltage Output Voltage Setting Accuracy Line Regulation Low line to high line Min load to full load Low line to high line Min load to full load Single Output Models Dual Output Models 10% load to 90% load Single Output Models 10% load to 90% load set 90% load		48 VDC nominal input models							
Output Voltage Setting Accuracy Nominal input and half load \$\frac{\text{Se Table}}{\$\text{\$\e	OUTDUIT ODEOUTIONS	46 VDC Horrillar input models			OUTIA SIOV	v-blow type			
Nominal input and half load Low line to high line Low line to high line to high line Low line Low line to high line Low line	OUTPUT SPECIFICATIONS								
Low line to high line					See	Table			
Low line to high line	Output Voltage Setting Accuracy	Nominal input and half load				±1.0	%Vnom		
Min load to full load Single Output Models 11.0 %						+0.2	%		
Dual Output Models 11.0 10% 10% 100		2011 11110 10 111911 11110	Single Output Models						
10% load to 90% load Single Output Models ±0.5 ±0.8 Mn		Min load to full load					%		
10% load to 90% load Dual Output Models Dual	Load Regulation		Duai Output Models						
Minimum Load		10% load to 90% load				±0.5	0/2		
Output Current		10 /0 load to 30 /0 load	Dual Output Models			±0.8	70		
Output Current	Minimum Load		•	0			mA		
Output Current See Table Maximum Capacitive Load Measurement bandwidth is 0-20MHz 30 mVp-F Ripple & Noise Measurement bandwidth is 0-20MHz 30 mVp-F Transient Recovery Time 25% load step change 250 µs Temperature Coefficient 25% load step change 250 µs PROTECTION Continuous continuous SRMOTE ON/OFF CONTROL Open or high impedance Converter ON 2~4mA current applied via 1KΩ resistor Standby Input Current Supply Off & Nominal Vin 2.5 mA GENERAL SPECIFICATIONS See Table Stiffciency Nominal input voltage and full load See Table Switching Frequency Soe sconds 220 KHz Isolation Voltage (I/P to O/P) 60 seconds 1500 MO Isolation Resistance (I/P to O/P) 500 vpc 1500 MC Isolation Capacitance (I/P to O/P) 100KHz, 1V 50 pF ENVIRONMENTAL SPECIFICATIONS Poperating Ambient Temperature -40 +85 °C						1			
Maximum Capacitive Load Ripple & Noise Measurement bandwidth is 0-20MHz 30 mVp-F					C '		VV		
Ripple & Noise									
Transjent Recovery Time 25% load step change 250						Table			
Transjent Recovery Time 25% load step change 250	Ripple & Noise	Measurement bandwidth is 0-20MHz			30		mVp-p		
Temperature Coefficient	Transient Recovery Time	25% load step change			250				
PROTECTION Short Circuit Protection Short Circuit Protection Continuous		g-				+0.02			
Short Circuit Protection Continuous	DDOTECTION					±0.02	707 0		
REMOTE ON/OFF CONTROL				T					
Converter ON Converter OFF Open or high impedance cesistor cesistor Converter OFF 2~4mA current applied via 1KΩ resistor Standby Input Current Supply Off & Nominal Vin 2.5 mA GENERAL SPECIFICATIONS Efficiency Nominal input voltage and full load See Table Switching Frequency 1500 VDC Isolation Voltage (I/P to O/P) 60 seconds 1500 VDC Isolation Resistance (I/P to O/P) 500 VDC 1000 MΩ MΩ Isolation Capacitance (I/P to O/P) 500 VDC 1000 MΩ D pF ENVIRONMENTAL SPECIFICATIONS P ENVIRONMENTAL SPECIFICATIONS TO PF C C Case Temperature 440 +85 °C C C C C Relative Humidity Non-condensing P E ** C C Relative Humidity Non-condensing Free air convection (20LFM) E ** C Relative Humidity Relative Humidity Relative Humidity Relative Humidity Relative Humidity Relative Humidi					contii	nuous			
Converter OFF Supply Off & Nominal Vin Supply Off & Nominal Vin Supply Off & Nominal Vin See Table	REMOTE ON/OFF CONTROL								
Converter OFF Standby Input Current Supply Off & Nominal Vin Supply Off & Nominal Vin Supply Off & Nominal Vin See Table	Converter ON				open or high	h impedanc	е		
Standby Input Current GENERAL SPECIFICATIONS Supply Off & Nominal Vin 2.5 mA GENERAL SPECIFICATIONS Efficiency Nominal input voltage and full load See Table Switching Frequency 220 KHz Isolation Voltage (I/P to O/P) 60 seconds 1500 VDC Isolation Resistance (I/P to O/P) 500 VDC 1000 MΩ Isolation Capacitance (I/P to O/P) 100KHz, 1V 50 pF ENVIRONMENTAL SPECIFICATIONS PE -40 +85 °C Case Temperature 95 +95 °C Case Temperature -50 +125 °C Relative Humidity Non-condensing 95 % RH Cooling Natural convection is about 20LFM but is not equal to still air (0LFM) Free air convection (20LFM) Lead Temperature 1.5mm from case for 10 sec. 260 °C MTBF MIL-HDBK-217F at 25°C, ground benign 2,800,000 hours PHYSICAL SPECIFICATIONS 0.16oz (4.5g) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Case Material Flammability to UL 94V-0 rated	Converter OFF								
GENERAL SPECIFICATIONS Efficiency Nominal input voltage and full load See Table Switching Frequency 220 KHz Isolation Voltage (I/P to O/P) 60 seconds 1500 VDC Isolation Resistance (I/P to O/P) 500 VDC 1000 MΩ Isolation Capacitance (I/P to O/P) 100KHz, 1V 50 pF ENVIRONMENTAL SPECIFICATIONS PF See derating curve -40 +85 °C Case Temperature See derating curve -50 +125 °C Case Temperature -50 +125 °C Relative Humidity Non-condensing Free air convection (20LFM) Lead Temperature 1.5mm from case for 10 sec. 260 °C MTBF MIL-HDBK-217F at 25°C, ground benign 2,800,000 hours PHYSICAL SPECIFICATIONS 0.16oz (4.5g) 0.06oz (4.5g) Dimensions (L x W x H) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) nm) Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Pin Material Phosphor bronze		Supply Off & Naminal Vin	,						
Efficiency Nominal input voltage and full load See Table Switching Frequency 220 KHz Isolation Voltage (I/P to O/P) 60 seconds 1500 VDC Isolation Resistance (I/P to O/P) 500VDC 1000 MΩ Isolation Capacitance (I/P to O/P) 100KHz, 1V 50 pF ENVIRONMENTAL SPECIFICATIONS PF ENVIRONMENTAL SPECIFICATIONS +85 °C Case Temperature See derating curve -40 +85 °C Case Temperature -50 +125 °C Relative Humidity Non-condensing 95 % RH Cooling Natural convection is about 20LFM but is not equal to still air (0LFM) Free air convection (20LFM) Lead Temperature 1.5mm from case for 10 sec. 260 °C MTBF MIL-HDBK-217F at 25°C, ground benign 2,800,000 hours PHYSICAL SPECIFICATIONS 0.16oz (4.5g) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Dimensions (L x W x H) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Non-conductive black plastic Phosphor bronze <t< td=""><td></td><td>Supply On & Norminal VIII</td><td></td><td></td><td>2.3</td><td></td><td>ША</td></t<>		Supply On & Norminal VIII			2.3		ША		
Switching Frequency Isolation Voltage (I/P to O/P) 60 seconds 1500 KHz Isolation Voltage (I/P to O/P) 60 seconds 1500 VDC Isolation Resistance (I/P to O/P) 500 VDC 1000 MΩ MΩ Isolation Capacitance (I/P to O/P) 100KHz, 1V 50 pF F ENVIRONMENTAL SPECIFICATIONS 50 pF F ENVIRONMENTAL SPECIFICATIONS 40 +85 °C *C Case Temperature -40 +85 °C *C Case Temperature -50 +125 °C *C Relative Humidity Non-condensing 95 % RH *C Coling Non-condensing Pree air convection (20LFM) *C *C Relative Humidity Non-conductive in sabout 20LFM but is not equal to still air (0LFM) Free air convection (20LFM) *C *C MTL-HDBK-217F at 25°C, ground benign 2,800,000 *D *C *C *MTL-HDBK-217F at 25°C, ground benign 0.16oz (4.5g) *D				1					
Isolation Voltage (I/P to O/P) 60 seconds 1500 VDC Isolation Resistance (I/P to O/P) 500VDC 1000 MΩ MΩ Solution Capacitance (I/P to O/P) 100KHz, 1V 50 pF ENVIRONMENTAL SPECIFICATIONS See derating curve -40 +85 °C Case Temperature -50 +125 °C Storage Temperature -50 +125 °C Relative Humidity Non-condensing 95 % RH Cooling Natural convection is about 20LFM but is not equal to still air (0LFM) Free air convection (20LFM) Lead Temperature 1.5mm from case for 10 sec. 260 °C MIL-HDBK-217F at 25°C, ground benign 2,800,000 hours PHYSICAL SPECIFICATIONS 0.16oz (4.5g) Dimensions (L x W x H) Case Material Flammability to UL 94V-0 rated Phosphor bronze SAFETY		Nominal input voltage and full load				Table			
Isolation Resistance (I/P to O/P) 500VDC 1000 MΩ Isolation Capacitance (I/P to O/P) 100KHz, 1V 50 pF ENVIRONMENTAL SPECIFICATIONS See derating curve -40 +85 °C Case Temperature -40 +85 °C Case Temperature -50 +125 °C Relative Humidity Non-condensing 95 % RH Cooling Natural convection is about 20LFM but is not equal to still air (0LFM) Free air convection (20LFM) Lead Temperature 1.5mm from case for 10 sec. 2,800,000 hours PHYSICAL SPECIFICATIONS 0.16oz (4.5g) 0.16oz (4.5g) Dimensions (L x W x H) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Phosphor bronze SAFETY	Switching Frequency				220		KHz		
Isolation Resistance (I/P to O/P) 500VDC 1000 MΩ Isolation Capacitance (I/P to O/P) 100KHz, 1V 50 pF ENVIRONMENTAL SPECIFICATIONS See derating curve -40 +85 °C Case Temperature -40 +85 °C Case Temperature -50 +125 °C Relative Humidity Non-condensing 95 % RH Cooling Natural convection is about 20LFM but is not equal to still air (0LFM) Free air convection (20LFM) Lead Temperature 1.5mm from case for 10 sec. 2,800,000 hours PHYSICAL SPECIFICATIONS 0.16oz (4.5g) 0.16oz (4.5g) Dimensions (L x W x H) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Phosphor bronze SAFETY	Isolation Voltage (I/P to O/P)	60 seconds		1500			VDC		
Isolation Capacitance (I/P to O/P)									
ENVIRONMENTAL SPECIFICATIONS Operating Ambient Temperature Case Temperature See derating curve -40 +85 °C Case Temperature Storage Temperature Storage Temperature Relative Humidity Non-condensing Natural convection is about 20LFM but is not equal to still air (0LFM) Lead Temperature 1.5mm from case for 10 sec. MIL-HDBK-217F at 25°C, ground benign PHYSICAL SPECIFICATIONS Weight Dimensions (L x W x H) Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Phosphor bronze SAFETY				1000		50			
Operating Ambient Temperature Case Temperature See derating curve Case Temperature Storage Temperature Storage Temperature Relative Humidity Non-condensing Natural convection is about 20LFM but is not equal to still air (0LFM) Lead Temperature 1.5mm from case for 10 sec. MIL-HDBK-217F at 25°C, ground benign PHYSICAL SPECIFICATIONS Weight Dimensions (L x W x H) Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Phosphor bronze SAFETY		TUUKHZ, TV				30	рг		
Case Temperature +95 °C Storage Temperature -50 +125 °C Relative Humidity Non-condensing 95 % RH Cooling Natural convection is about 20LFM but is not equal to still air (0LFM) Free air convection (20LFM) Lead Temperature 1.5mm from case for 10 sec. 260 °C MTBF MIL-HDBK-217F at 25°C, ground benign 2,800,000 hours PHYSICAL SPECIFICATIONS Weight 0.16oz (4.5g) 0.16oz (4.5g) Dimensions (L x W x H) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) mm) Case Material Non-conductive black plastic Pin Material Phosphor bronze SAFETY Phosphor bronze SAFETY	ENVIRONMENTAL SPECIFICATIONS								
Case Temperature +95 °C Storage Temperature -50 +125 °C Relative Humidity Non-condensing 95 % RH Cooling Natural convection is about 20LFM but is not equal to still air (0LFM) Free air convection (20LFM) Lead Temperature 1.5mm from case for 10 sec. 260 °C MTBF MIL-HDBK-217F at 25°C, ground benign 2,800,000 hours PHYSICAL SPECIFICATIONS Weight 0.16oz (4.5g) 0.16oz (4.5g) Dimensions (L x W x H) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) mm) Case Material Non-conductive black plastic Pin Material Phosphor bronze SAFETY Phosphor bronze SAFETY		See derating curve		-40					
Storage Temperature Relative Humidity Non-condensing Natural convection is about 20LFM but is not equal to still air (0LFM) Lead Temperature 1.5mm from case for 10 sec. MIL-HDBK-217F at 25°C, ground benign PHYSICAL SPECIFICATIONS Weight Dimensions (L x W x H) Case Material Flammability to UL 94V-0 rated SAFETY Phosphor bronze	Case Temperature					+95	°C		
Relative Humidity Non-condensing Cooling Natural convection is about 20LFM but is not equal to still air (0LFM) Lead Temperature 1.5mm from case for 10 sec. MIL-HDBK-217F at 25°C, ground benign PHYSICAL SPECIFICATIONS Weight Dimensions (L x W x H) Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Phosphor bronze SAFETY				-50			°C		
Cooling Natural convection is about 20LFM but is not equal to still air (0LFM) Free air convection (20LFM) Lead Temperature 1.5mm from case for 10 sec. 260 °C MTBF MIL-HDBK-217F at 25°C, ground benign 2,800,000 hours PHYSICAL SPECIFICATIONS Weight 0.16oz (4.5g) Dimensions (L x W x H) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Pin Material SAFETY		Non condensing	30			_			
Lead Temperature 1.5mm from case for 10 sec. 260 °C MTBF MIL-HDBK-217F at 25°C, ground benign 2,800,000 hours PHYSICAL SPECIFICATIONS 0.16oz (4.5g) Weight 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Pin Material Phosphor bronze SAFETY			_						
MTBF MIL-HDBK-217F at 25°C, ground benign 2,800,000 hours PHYSICAL SPECIFICATIONS 0.16oz (4.5g) Weight 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Pin Material Phosphor bronze SAFETY			t equal to still air (0LFM)	Fre	e air conve				
PHYSICAL SPECIFICATIONS Weight Dimensions (L x W x H) Case Material Pin Material SAFETY O.16oz (4.5g) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Non-conductive black plastic Phosphor bronze					260	°C			
PHYSICAL SPECIFICATIONS Weight Dimensions (L x W x H) Case Material Pin Material SAFETY O.16oz (4.5g) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Non-conductive black plastic Phosphor bronze	MTBF	MIL-HDBK-217F at 25°C, ground benian		2,800,000			hours		
Weight Dimensions (L x W x H) Case Material Pin Material SAFETY O.16oz (4.5g) 0.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Non-conductive black plastic Phosphor bronze				,					
Dimensions (L x W x H) Case Material Pin Material SAFETY O.74 x 0.54 x 0.33 inch (18.9 x 13.7 x 8.4 mm) Non-conductive black plastic Phosphor bronze		0.1807 (4.50)							
Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Pin Material Phosphor bronze SAFETY	vveigitt								
Case Material Flammability to UL 94V-0 rated Non-conductive black plastic Pin Material Phosphor bronze SAFETY	Dimensions (L x W x H)			0.74 x 0.5			3.7 x 8.45		
Pin Material Phosphor bronze SAFETY	,								
Pin Material Phosphor bronze SAFETY	ase Material Flammability to UL 94V-0 rated				Non-conductive black plastic				
SAFETY									
CALIFORNIUM DE L'ENTROPE LA RECOGNICATION DE L'ENTROPOLIT DE L			CSA 60050 1 races	nition IEC/E	N 60050 1	(CB cohom	a) pandina		
Con 00300-1 recognition, iEO/E19 00300-1 (OB-Scheine) perior	οαιτιγ Αμμιυναίδ		COA 00900-1 recogi	iiiiOH, IEC/E	1-00800 M	(CD-SCHem	e) pending		



DERATING CURVE-



MECHANICAL DRAWING -

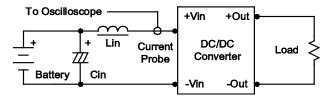




TEST SETUP-

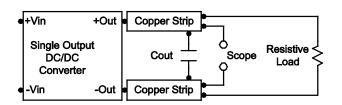
Input Reflected-Ripple Current Test Setup

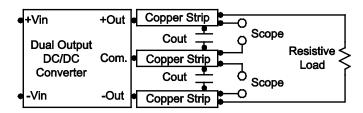
Input reflected-ripple current is measured with an inductor Lin (4.7 μ H) and Cin (220 μ F, ESR < 1.0 Ω at 100 KHz) to simulate source impedance. Capacitor Cin offsets possible battery impedance. Current ripple is measured at the input terminals of the module. Measurement bandwidth is 0-500 KHz.



Peak-to-Peak Output Noise Measurement Test

Use a 0.47µF ceramic capacitor. Scope measurement should be made by using a BNC socket, measurement bandwidth is 0-20MHz. Position the load between 50mm and 75mm from the DC/DC converter.





DESIGN & FEATURE CONSIDERATIONS

Remote On/Off

Negative logic remote on/off turns the module OFF during a logic high voltage on the remote on/off pin and ON during a logic low. To turn the module on and off, the user must supply a switch to control the voltage between the on/off terminal and the – Vin terminal. The switch can be an open collector or equivalent. A logic high is $2\sim4$ mA current applied via 1K Ω resistor. A logic low is open circuit or high impedance.

Maximum Capacitive Load

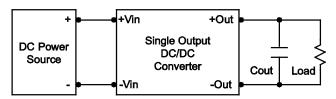
The DCMSW1 series has a limitation of maximum connected capacitance on the output. The power module may be operated in current limiting mode during start-up, affecting the ramp-up and the start-up time. The maximum capacitance can be found in the Model Selection Table.

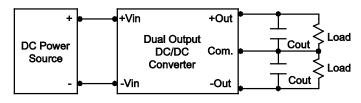
Over Current Protection

To provide protection in a fault (output overload) condition, the unit is equipped with internal current limiting circuitry and can endure overload for an unlimited duration. At the point of current-limit inception, the unit shifts from voltage control to current control. The unit operates normally once the output current is brought back into its specified range.

Output Ripple Reduction

A good quality low ESR capacitor placed as close as possible across the load will give the best ripple and noise performance. To reduce output ripple, it is recommended to use 3.3µF capacitors at the output.

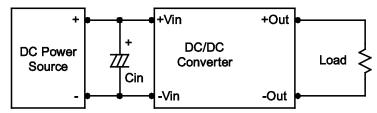






Input Source Impedance

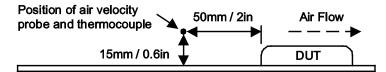
The power module should be connected to a low ac-impedance input source. Highly inductive source impedances can affect the stability of the power module. In applications where power is supplied over long lines and output loading is high, it may be necessary to use a capacitor at the input to ensure startup. Capacitor mounted close to the power module helps ensure stability of the unit, it is recommended to use a good quality low Equivalent Series Resistance (ESR < 1.0Ω at 100 KHz) capacitor of 8.2μ F for 5VDC input models, 3.3μ F for 12VDC input models, and 1.5μ F for 24VDC and 48VDC input models.



DESIGN & FEATURE CONSIDERATIONS

Thermal Considerations

Many conditions affect the thermal performance of the power module, such as orientation, airflow over the module, and board spacing. To avoid exceeding the maximum temperature rating of the components inside the power module, the case temperature must be kept below 95°C. The derating curves are determined from measurements obtained in a test setup.



COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact Wall Industries for further information:

Phone: ☎(603)778-2300 Toll Free: ☎(888)597-9255 Fax: ☎(603)778-9797

E-mail: sales@wallindustries.com
Web: www.wallindustries.com
Address: 37 Industrial Drive

Exeter, NH 03833

©2019 Wall Industries, Inc. Specifications subject to change without notice. Wall Industries is not responsible for typographical errors. The information contained herein is for informational purposes only. This information is provided by Wall Industries and we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the information contained in this document for any purpose. All product and manufacturer names are trademarks or registered trademarks of their respective companies.