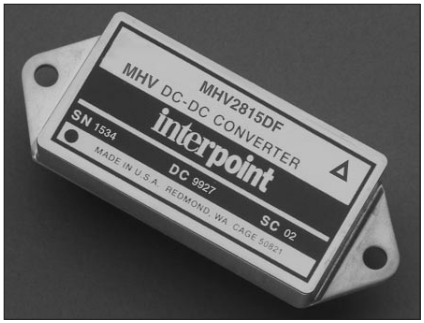
FEATURES

- **–55° to +125°C operation**
- **16 to 50 VDC input**
- Fully Isolated
- Optocoupler feedback
- Fixed switching frequency 600 kHz typical,
- Topology – Dual Single Ended Flybacks
- 80 V / 120 ms transient protection (12 Vout single and dual to 75 V, 15 Vout single and dual to 60V)
- Inhibit and sync functions
- Trim on single output models
- Up to 84% efficiency
- Low output noise

DC/DC CONVERTERS 28 VOLT INPUT

MHV SERIES 15 WATT



MODELS		
VDC OUTPUT		
SINGLE	DUAL	TRIPLE
3.3	±5	+5 & ±12
5	±12	+5 & ±15
12	±15	
15		

Size (max.): Non flanged Single and dual output models, case H2, 2.125 x 1.125 x 0.400 inches (53.98 x 28.58 x 10.16 mm)
Triple output models, case F1, 1.950 x 1.350 x 0.405 inches (49.53 x 34.29 x 10.29 mm)
Flanged Single and dual output models, case K3, 2.910 x 1.125 x 0.400 inches (73.91 x 28.58 x 10.16 mm)
Triple output models, case J1, 2.720 x 1.350 x 0.405 inches (69.09 x 34.29 x 10.29 mm)
See Section B8, cases H2, F1, K3, and J1 for dimensions.
Weight: 60 grams maximum.
Screening: Standard, ES, or 883 (Class H). See Section C2 for screening options, see Section A5 for ordering information.

DESCRIPTION

Interpoint's MHV Series™ of DC/DC converters offer a wide input voltage range of 16 to 50 VDC and a choice of nine different output voltage configurations comprised of single, dual or triple outputs. The converters will withstand transients of up to 80 V for up to 120 milliseconds while maintaining output voltages (with the exception of the 12 volt single and dual outputs which will withstand transients up to 75 volts and the 15 volt single and dual outputs which will withstand up to 60 volts). The MHV Series operates at a full 15 watts of output power (10 watts for the 3.3 volt single output) over the military temperature range of –55°C to +125°C while maintaining low input and output noise.

CONVERTER DESIGN

MHV Series DC/DC converters are switching regulators that use continuous flyback conversion topology with a clock frequency of approximately 600 kHz. MHV Series converters incorporate two internal converters with one converter phase shifted 180° from the other to create a dual phase/phase-shifted operation. Each of the internal converters operates at approximately one-half of the clock frequency. This proprietary technology eliminates cross regulation, minimizes input ripple, greatly reduces output ripple and improves efficiency. On the triple output models, this design provides completely independent regulation with no cross regulation effect between the main and auxiliary outputs and no minimum loading required on the main output.

INHIBIT FUNCTION

Open collector TTL levels control the inhibit circuit. The converter is enabled when the inhibit terminal is left unconnected or when the inhibit terminal is connected to a voltage between 11.5 and 50 V.

When a low (0.8 V) is applied to the inhibit terminal the converter shuts down, typically drawing 8.4 mA of input current. Inhibit terminal resistance is 3.3 k ohms and draws 8.4 mA, typical.

SYNCHRONIZATION FUNCTION

Applying an external signal of 40% to 60% duty cycle and 500 to 700 kHz will synchronize the converter to your system requirements. Free run clock frequency is approximately 600 kHz. If not used, the sync terminal must be left unconnected.

TRIM

Single output converters feature a trim range of as low as 80% to as high as 110% of Vout nominal, depending on the model. To trim up, connect a resistor from output common (pin 4) to the trim terminal (pin 3). To trim down, connect a resistor from the positive output (pin 5) to the trim terminal (pin 3). See Figure 4 and trim tables for more information.

UNDERVOLTAGE LOCKOUT

An undervoltage lockout of approximately 7 VDC keeps system current levels low during startup.

SHORT CIRCUIT PROTECTION

Under short circuit conditions of 130% or more of full load current, the converter will protect itself by shutting down. Short circuit duration should be brief because power dissipation may cause internal temperatures to rise rapidly. Restart is automatic upon removal of the short circuit.

DC/DC CONVERTERS

ABSOLUTE MAXIMUM RATINGS

Input Voltage
- 16 to 50 VDC

Output Power
- 15 watts (10 watts MHV283R3S)

Lead Soldering Temperature (10 sec per lead)
- 300°C

Storage Temperature Range (Case)
- –65°C to +150°C

RECOMMENDED OPERATING CONDITIONS

Input Voltage Range
- 16 to 50 VDC continuous
- Transient: see Electrical Characteristics tables

Case Operating Temperature (Tc)
- –55°C to +125°C full power
- –55°C to +130°C absolute

Derating Output Power/Current
- Linearly from 100% at 125°C to 0% at 130°C

SYNC AND INHIBIT

Sync In (500 to 700 kHz)
- Duty cycle 40% min, 60% max
- Logic low 0.8 V max
- Logic high 4.5 V min, 10 V max
- Referenced to input common
- If not used, leave unconnected

Inhibit TTL Open Collector
- Logic low (output disabled)
  Logic low voltage ≤0.8 V
  Inhibit pin current
  8.4 mA typical, 10 mA maximum
- Referenced to input common
- Logic high (output enabled)
  Open collector
  Unconnected or 11.5 to 50 V

TYPICAL CHARACTERISTICS

Output Voltage Temperature Coefficient
- 100 ppm/°C typical

Undervoltage Lockout
- 7 V input typical

Current Limit
- 130% of full load typical at 25°C

Isolation
- 100 megohm minimum at 500 V

Audio Rejection
- 30 dB typical

Conversion (Switching) Frequency
- Free run mode 300 kHz
  typical 245 kHz. min, 355 kHz. max

Clock Frequency
- External sync range 500 to 700 kHz.

Inhibit Pin Voltage (unit enabled)
- 11 V typical

Electrical Characteristics: 25°C Tc, 28 VDC Vin, 100% load, free run, unless otherwise specified.

SINGLE OUTPUT MODELS		MHV283R3S			MHV2805S			MHV2812S			MHV2815S			
PARAMETER	CONDITIONS	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	UNITS
OUTPUT VOLTAGE		3.27	3.30	3.33	4.95	5.00	5.05	11.88	12.00	12.12	14.85	15.00	15.15	VDC
OUTPUT CURRENT	V_{IN} = 16 to 50 VDC	0	—	3.03	0	—	3.0	0	—	1.25	0	—	1.0	A
OUTPUT POWER	V_{IN} = 16 to 50 VDC	0	—	10	0	—	15	0	—	15	0	—	15	W
OUTPUT RIPPLE	10 kHz - 2 MHz													
VOLTAGE	Tc = –55°C to +125°C	—	5	60	—	10	60	—	7	60	—	5	60	mV p-p
LINE REGULATION	V_{IN} = 16 to 50 VDC	—	0	20	—	0	20	—	0	20	—	0	20	mV
LOAD REGULATION	NO LOAD TO FULL	—	15	45	—	15	40	—	5	35	—	5	40	mV
INPUT VOLTAGE	CONTINUOUS	16	28	50	16	28	50	16	28	50	16	28	50	VDC
NO LOAD TO FULL	TRANSIENT 120 ms	—	—	80	—	—	80	—	—	75	—	—	60	V
INPUT CURRENT	NO LOAD	—	23	45	—	29	52	—	26	51	—	28	57	mA
	FULL LOAD	—	489	518	—	687	724	—	638	678	—	638	687	mA
	INHIBITED	—	8.4	10	—	8.4	10	—	8.4	10	—	8.4	10	mA
INPUT RIPPLE	10 kHz - 20 MHz													
CURRENT[1]	Tc = –55°C to +125°C	—	10	50	—	10	50	—	10	50	—	10	50	mA pp
EFFICIENCY		69	73	—	74	78	—	79	84	—	78	84	—	%
LOAD FAULT[2]	POWER DISSIPATION													
	SHORT CIRCUIT[2]	—	—	9.5	—	—	11	—	—	11	—	—	10.5	W
	RECOVERY	—	—	20	—	—	20	—	—	20	—	—	20	ms
	OUTPUT CURRENT													
	TRIP POINT	3.97	—	—	3.93	—	—	1.64	—	—	1.31	—	—	A
STEP LOAD	50% – 100% – 50%													
RESPONSE[3]	TRANSIENT	—	—	250	—	—	300	—	—	300	—	—	350	mV pk
	RECOVERY	—	—	700	—	—	1500	—	—	900	—	—	700	µs
START-UP	DELAY	—	5	20	—	5	20	—	5	20	—	5	20	ms
0 TO 28 V_{IN}	OVERSHOOT	—	50	100	—	0	50	—	0	120	—	0	150	mV pk

Notes
1. Lin = 5.5 µH.
2. Load fault is a short circuit (<50 mΩ). Recovery is into a resistive load.
3. Load step transition ≥ 10 µs. Recovery = time to settle to within 1% of Vout final value.
4. Input step transition ≥ 10 µs. Recovery = time to settle to within 1% of Vout final value.

Electrical Characteristics: 25°C Tc, 28 VDC Vin, 100% load, free run, unless otherwise specified.

DUAL OUTPUT MODELS		MHV2805D			MHV2812D			MHV2815D			
PARAMETER	**CONDITIONS**	**MIN**	**TYP**	**MAX**	**MIN**	**TYP**	**MAX**	**MIN**	**TYP**	**MAX**	**UNITS**
OUTPUT VOLTAGE	$+V_{OUT}$	4.95	5.00	5.05	11.88	12.00	12.12	14.85	15.00	15.15	VDC
	$-V_{OUT}$	4.95	5.00	5.05	11.88	12.00	12.12	14.85	15.00	15.15	
OUTPUT CURRENT	V_{IN} = 16 TO 50 VDC	—	—	±1.50	—	—	±0.625	—	—	±0.500	A
OUTPUT POWER[1]	V_{IN} = 16 TO 50 VDC	—	±7.5	15	—	±7.5	15	—	±7.5	15	W
OUTPUT RIPPLE VOLTAGE	10 kHz- 2 MHz Tc = –55°C to +125°C $+V_{OUT}$ / $-V_{OUT}$	—	15	120	—	10	60	—	20	80	mVp-p
LINE REGULATION	V_{IN} = 16 TO 50 VDC ±V_{OUT}	—	0	20	—	0	20	—	0	20	mV
LOAD REGULATION	NO LOAD TO FULL ±V_{OUT}	—	5	40	—	5	40	—	5	40	mV
INPUT VOLTAGE	CONTINUOUS	16	28	50	16	28	50	16	28	50	VDC
NO LOAD TO FULL	TRANSIENT 120 msec	—	—	80	—	—	75	—	—	60	V
INPUT CURRENT	NO LOAD	—	18	25	—	30	40	—	35	45	mA
	FULL LOAD	—	670	705	—	634	670	—	635	670	
	INHIBITED	—	8.4	10	—	8.4	10	—	8.4	10	
INPUT RIPPLE CURRENT[2]	10 kHz - 20 MHz Tc = –55°C to +125°C	—	10	200	—	10	200	—	10	200	mA p-p
EFFICIENCY		76	80	—	80	85	—	80	84	—	%
LOAD FAULT[3]	POWER DISSIPATION SHORT CIRCUIT	—	—	9	—	—	10	—	—	10	W
	RECOVERY	—	—	15	—	—	25	—	—	25	ms
	OUTPUT CURRENT TRIP POINT	1.97	—	—	0.819	—	—	0.655	—	—	A
STEP LOAD RESPONSE[4] ± V_{OUT}	50% – 100% — 50% TRANSIENT	—	—	200	—	—	300	—	—	400	mV pk
	RECOVERY	—	—	500	—	—	700	—	—	900	µs
START-UP 0 TO 28 V_{IN}	DELAY	—	5	12	—	10	18	—	12	20	ms
	OVERSHOOT	—	0	50	—	0	120	—	0	150	mV pk

Notes
1. Up to 7.5 watts is available from either output.
2. Lin = 2 µH.
3. Load fault is a short circuit (<50 mΩ). Recovery is into a resistive load.
4. Load step transition ≥ 10 µs. Recovery = time to settle to within 1% of Vout final value.
5. Input step transition ≥ 10 µs. Recovery = time to settle to within 1% of Vout final value.

DC/DC CONVERTERS

Electrical Characteristics: 25°C Tc, 28 VDC Vin, 100% load, free run, unless otherwise specified.

TRIPLE OUTPUT MODELS		MHV28512T			MHV28515T			
PARAMETER	**CONDITION**	**MIN**	**TYP**	**MAX**	**MIN**	**TYP**	**MAX**	**UNITS**
OUTPUT VOLTAGE	MAIN	4.95	5.0	5.05	4.95	5.0	5.05	VDC
	+ AUXILIARY	11.88	12.0	12.12	14.85	15.0	15.15	
	– AUXILIARY	11.82	12.0	12.18	14.77	15.0	15.23	
OUTPUT CURRENT[1]	MAIN	0	—	2.0	0	—	2.0	A
V_{IN} = 16 TO 50	+ AUXILIARY	—	—	0.333	—	—	0.267	
	– AUXILIARY	—	—	0.333	—	—	0.267	
	TOTAL	—	—	2.416	—	—	2.333	
OUTPUT POWER[2]	MAIN	—	—	10	—	—	10	W
V_{IN} = 16 TO 50	+ AUXILIARY	—	—	4	—	—	4	
	– AUXILIARY	—	—	4	—	_	4	
	TOTAL	—	—	15	—	—	15	
OUTPUT RIPPLE	10 kHz to 2 MHz MAIN	—	5	30	—	10	35	mV p-p
VOLTAGE	10 kHz to 2 MHz ± AUXILIARY	—	5	30	—	10	35	
LINE REGULATION	MAIN	—	0	20	—	0	20	mV
V_{IN} = MIN. TO MAX.	+AUXILIARY	—	1	35	—	5	35	
	– AUXILIARY	—	1	35	—	5	35	
LOAD REGULATION	MAIN	—	10	25	—	10	25	mV
	+AUXILIARY	—	10	45	—	15	55	
	– AUXILIARY	—	10	65	—	15	80	
CROSS REGULATION[3]	CONDITION A	—	300	500	—	300	500	mV
– AUXILIARY	CONDITION B	—	400	700	—	400	700	
INPUT VOLTAGE	CONTINUOUS	16	28	50	16	28	50	VDC
	TRANSIENT 120 ms	—	—	80	—	—	80	
INPUT CURRENT	NO LOAD	—	23	32	—	28	37	mA
	FULL LOAD	—	670	705	—	670	705	
	INHIBITED	—	8.4	10	—	8.4	10	
INPUT RIPPLE CURRENT	10 kHz to 10 MHz	—	10	40	—	15	40	mA p-p
EFFICIENCY		76	80	—	76	80	—	%
LOAD FAULT[4]	SHORT CIRCUIT POWER DISSIPATION							
	MAIN	—	—	9	—	—	9	W
	± AUXILIARY	—	—	8	—	—	8	
STEP LOAD RESPONSE[5, 6]	TRANSIENT							
	MAIN	—	—	250	—	—	250	mV
	± AUXILIARY	—	—	500	—	—	500	
	RECOVERY							
	MAIN	—	—	2.5	—	—	2.5	ms
	± AUXILIARY	—	—	4	—	—	3.5	
START-UP[6] 0 TO 28 V_{IN}	DELAY EACH OUTPUT	—	5	12	—	5	12	ms

Notes

1. The sum of the 12 volt auxiliary output currents may not exceed 416 mA. The sum of the 15 volt auxiliary output currents may not exceed 333 mA.
2. The sum of the auxiliary output power may not exceed 5 watts.
3. Cross regulation occurs between the two auxiliaries and is measured on –aux. +5 is held constant at 2.0 A. Cross regulation is specified for two conditions:
   A. Positive aux. = 2.5 W; negative aux. = 2.5 W to 0.5 W.
   B. Negative aux. = 4 W to 1 W; positive aux. = 1 W to 4 W, simultaneous.
4. Load fault is a short circuit (<50 mΩ). Recovery is into a resistive load.
5. Load step transition ≥ 10 µs. Recovery = time to settle to within 1% of Vout final value.
6. Input step transition ≥ 10 µs. Recovery = time to settle to within 1% of Vout final value.
7. Lin = 5.5 µH.

DIAGRAMS

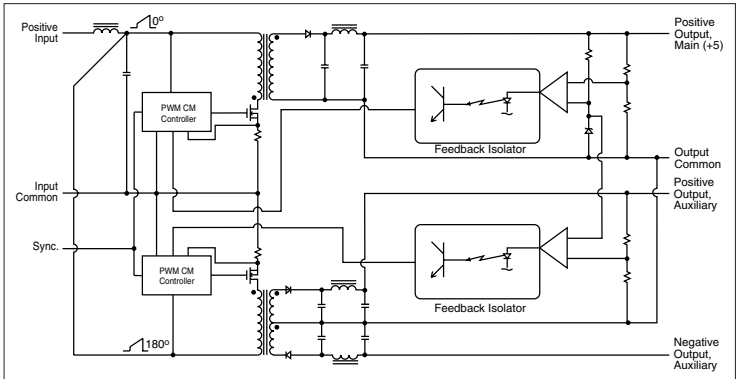


FIGURE 1: MHV TRIPLE BLOCK DIAGRAM

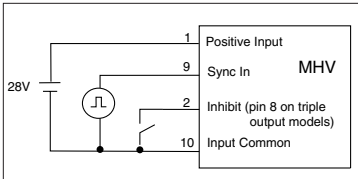
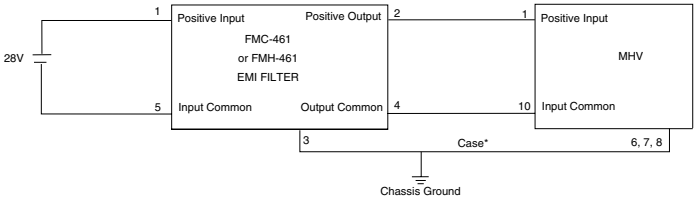


FIGURE 2: TYPICAL CONNECTIONS



*The case ground connection should be as low an impedance as possible to minimize EMI.
Direct contact of baseplate to chassis ground provides the lowest impedance.

FIGURE 3: EMI FILTER CONNECTION

TRIM – SINGLE OUTPUT MODELS ONLY

Calculated Trim

Trim down: $R_T\ (k\Omega) = \left(\frac{(V_o - 2.5)}{V_{o\ nominal} - V_0}\right) A - B$

Trim up: $R_T\ (k\Omega) = \left(\frac{2.5A}{V_o - V_{o\ nominal}}\right) - B$

V_o = desired output voltage

Formula Values by Model

	3.3V	5V	12V	15V
A	3.7	3.7	14	18.2
B	10	10	30	30

Quick Reference Trim Table

MODEL	% V_{OUT} NOMINAL					
	110	106	102	95	90	80
	R_{TRIM} (R_T) k ohms					
MHV283R3S	18	36	128	4	n/a	n/a
MHV2805S	8	20	81	23	5	n/a
MHV2812S	n/a	19	116	177	67	11
MHV2815S	0.3	21	122	255	104	28

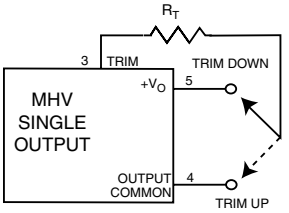


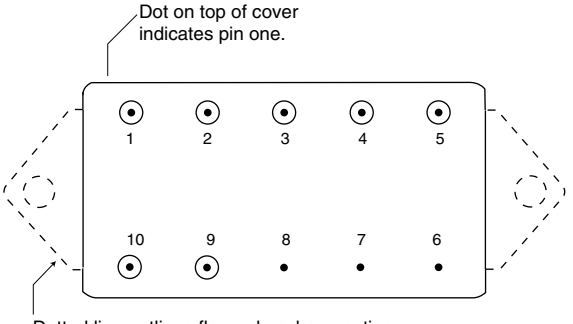
FIGURE 4: MHV SINGLE OUTPUT TRIM

Notes
If calculated result is a negative value, the desired output voltage is outside the allowed trim range.
Calculated values of R_T are ±15%.
When trimming up, do not exceed the maximum output power.
When trimming down, do not exceed the maximum output current.

PIN OUT

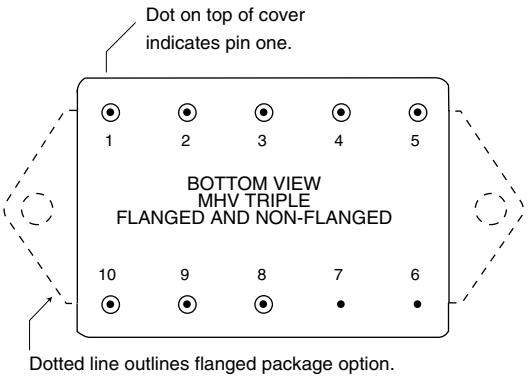
Pin	Single Output	Dual Output	Triple Output
1	Positive Input	Positive Input	Positive Input
2	Inhibit	Inhibit	Main (+5) Output
3	Trim	Positive Output	Output Common
4	Output Common	Output Common	Neg. Aux. Output
5	Positive Output	Negative Output	Pos. Aux. Output
6,7	Case Ground	Case Ground	Case Ground
8	Case Ground	Case Ground	Inhibit
9	Sync In	Sync In	Sync In
10	Input Common	Input Common	Input Common

Leave sync pin (pin 9) unconnected if not used.



See Section B8, cases H2 and K3 for dimensions.

FIGURE 5: PIN OUT SINGLES AND DUALS



See Section B8, cases F1, J1, and J2 for dimensions.

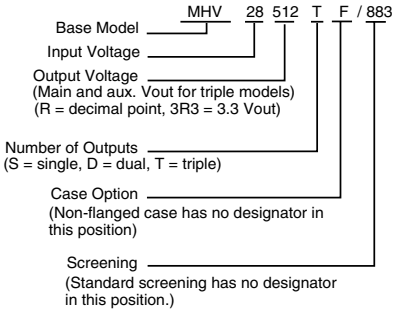
FIGURE 6: PIN OUT TRIPLE

SMD NUMBERS

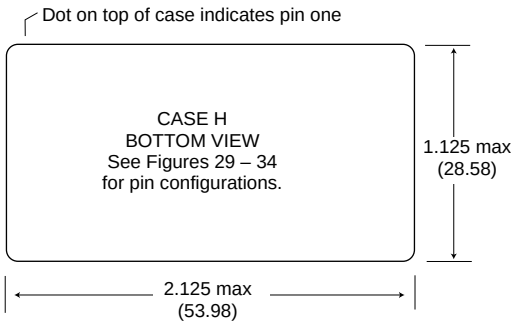
STANDARD MICROCIRCUIT DRAWING (SMD)	MHV SERIES SIMILAR PART
IN PROCESS	MHV283R3S/883 MHV2805S/883 MHV2812S/883 MHV2815S/883 MHV2805D/883 MHV2812D/883 MHV2815D/883 MHV28512T/883 MHV28515T/883

Flanged SMD numbers for the MHV Series of converters have the suffix HZC instead of HXC. For exact specifications for an SMD product, refer to the SMD drawing. Call your Interpoint representative for status on MHV SMD releases. See Section A3, SMDs, for more information.

MODEL NUMBERING KEY



MHV 21421-001-DTS Rev B



Materials

Header Cold Rolled Steel/Nickel/Gold
cases H1 and H2
Cold Rolled Steel/Nickel/Tin
cases H3, H4, and H5

Cover Kovar/Nickel
cases H1 and H2
Cold Rolled Steel/Nickel/Tin
cases H3, H4, and H5

Pins #52 alloy
ceramic seal
case H1
case H2 (except MHV Series Single and Dual)
compression glass seal
MHV Series Single and Dual
case H3, H4, H5

CAUTION
Heat from reflow or wave soldering may damage the device. Solder pins individually with heat application not exceeding 300°C for 10 seconds per pin.

Case dimensions in inches (mm)
Tolerance ±0.005 (0.13) for three decimal places
±0.01 (0.3) for two decimal places
unless otherwise specified

FIGURE 28: CASE H MAXIMUM DIMENSIONS

BOTTOM VIEW CASE H1
FMC EMI Filter: Screening – Standard, ES, or 883
SFMC EMI Filter: Screening – Space Standard, H, or K

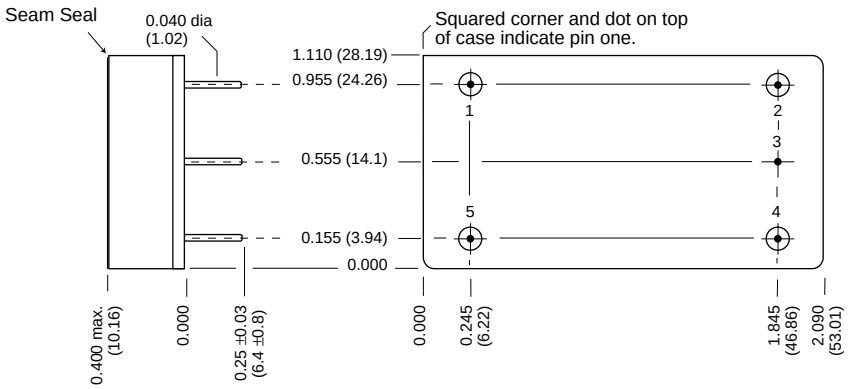


FIGURE 29: CASE H1

Note: Although every effort has been made to render the case drawings at actual size, variations in the printing process may cause some distortion. Please refer to the numerical dimensions for accuracy.

BOTTOM VIEW CASE H2

MTR Series Single, MHV Series Single and Dual, and MHD Series:
Screening – Standard, ES, or 883
MTR Series Dual: Screening – 883
SMTR Series Single and Dual: Screening – Space Standard, H, or K

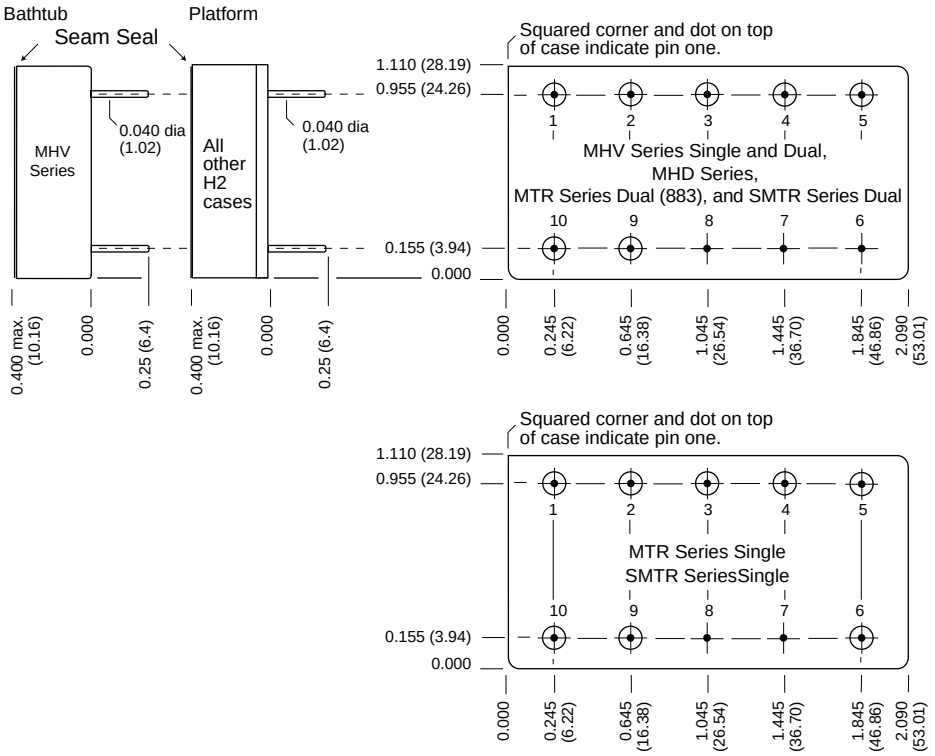
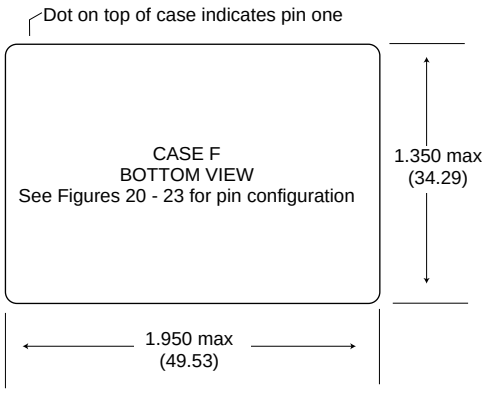


FIGURE 30: CASE H2



Materials

Header Case F1
Cold Rolled Steel/Nickel/Gold
Cases F2 - F4
Cold Rolled Steel/Nickel/Tin
Cover Case F1
Kovar/Nickel
Cases F2 - F4
Cold Rolled Steel/Nickel/Tin
Pins #52 alloy (all cases)
MHV Series Triple – compression glass seal
MTR Series Triple, case F1 – ceramic seal
MTR Series Triple, case F2 – compression glass seal
HUM40 – compression glass seal or ceramic seal
Case F3 – compression glass seal
Case F4 – compression glass seal or ceramic seal

CAUTION

Heat from reflow or wave soldering may damage the device. Solder pins individually with heat application not exceeding 300°C for 10 seconds per pin.

Case dimensions in inches (mm)

Tolerance ±0.005 (0.13) for three decimal places
±0.01 (0.2) for two decimal places
unless otherwise specified

FIGURE 19: CASE F MAXIMUM DIMENSIONS

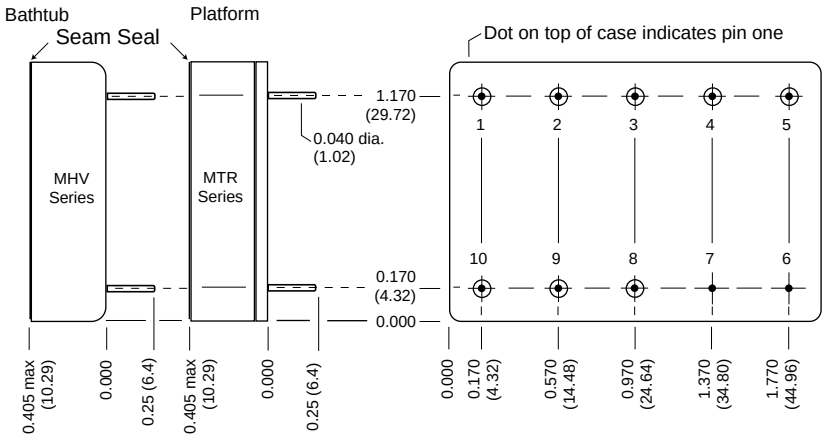


FIGURE 20: CASE F1

Note: Although every effort has been made to render the case drawings at actual size, variations in the printing process may cause some distortion. Please refer to the numerical dimensions for accuracy.

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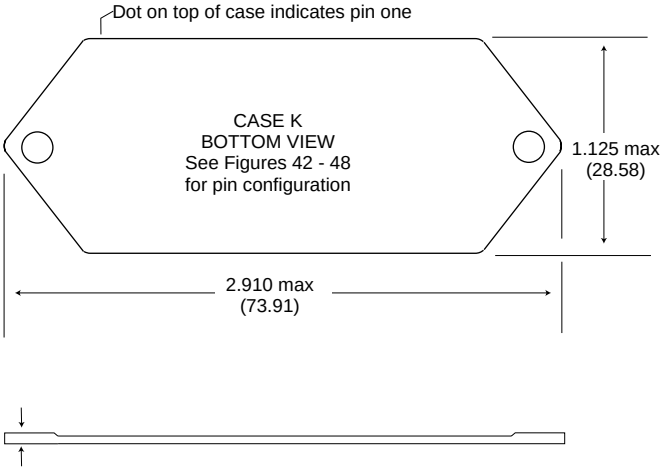
CASES



Flange Thickness:

Cases K1, K2, K3 and MLP Series (K5)
0.060 (1.52)
Cases K4, K5 (except MLP Series), K6, K7, and K8
0.067 +0.005/-0.007 (1.70 +0.13/-0.8)

Materials

Header Case K1 - K3
Cold Rolled Steel/Nickel/Gold
Cases K4 - K8
Cold Rolled Steel/Nickel/Tin
Cover Case K1 - K3
Kovar/Nickel
Case K4 - K8
Cold Rolled Steel/Nickel/Tin
Pins #52 alloy (all cases)
Case K1, K2, and K3 (except MHV Series Single and Dual)
ceramic seal
Cases K4 - K8 and MHV Series Single and Dual (K3)
compression glass seal

Case dimensions in inches (mm)

Tolerance ±0.005 (0.13) for three decimal places
±0.01 (0.2) for two decimal places
unless otherwise specified

CAUTION

Heat from reflow or wave soldering may damage the device. Solder pins individually with heat application not exceeding 300°C for 10 seconds per pin.

FIGURE 41: CASE K MAXIMUM DIMENSIONS

BOTTOM VIEW CASE K3

Flanged cases: Designator required in Case Option position of model number.
MTR Series Single, MHV Series Single and Dual, MHD Series:
Screening – Standard, ES, or 883
MTR Series Dual: Screening – 883
SMTR Series: Screening – Space Standard, H, or K

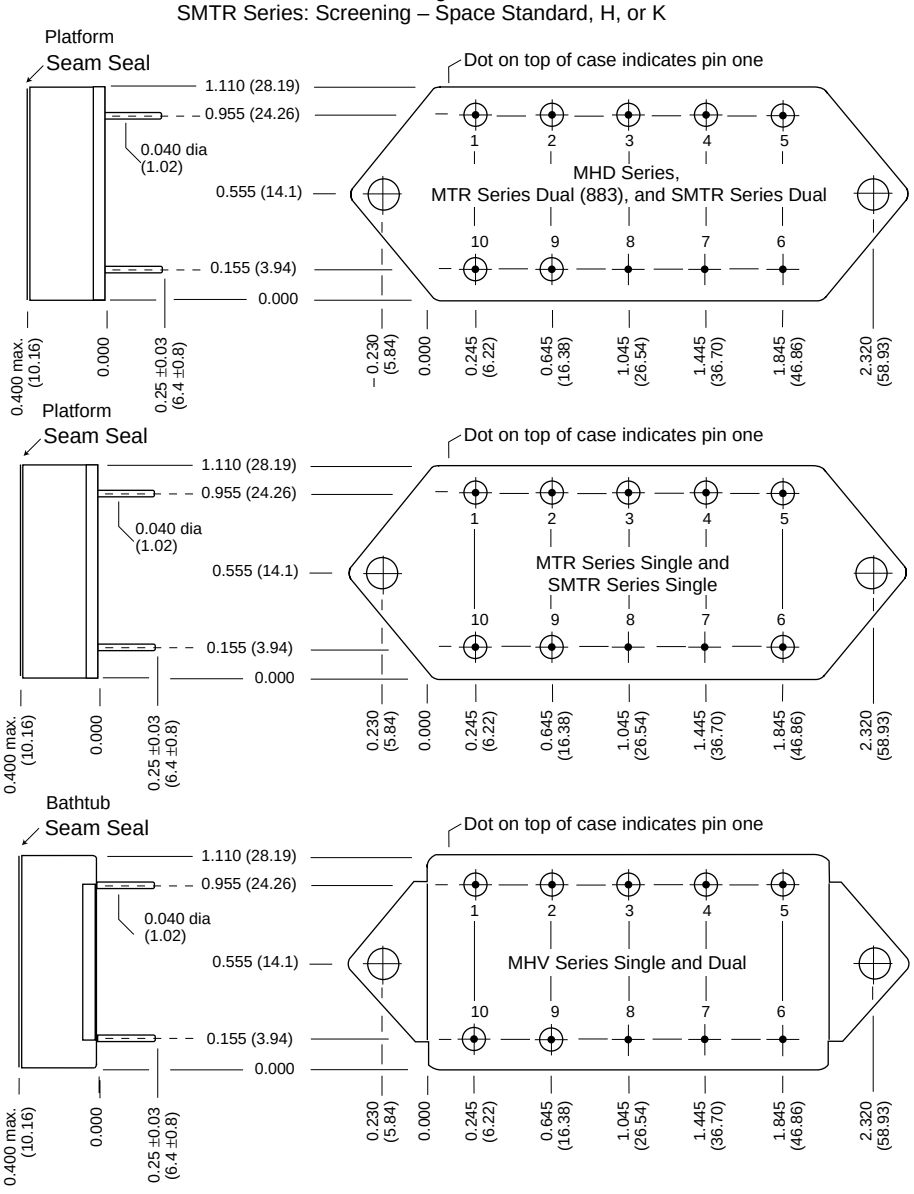
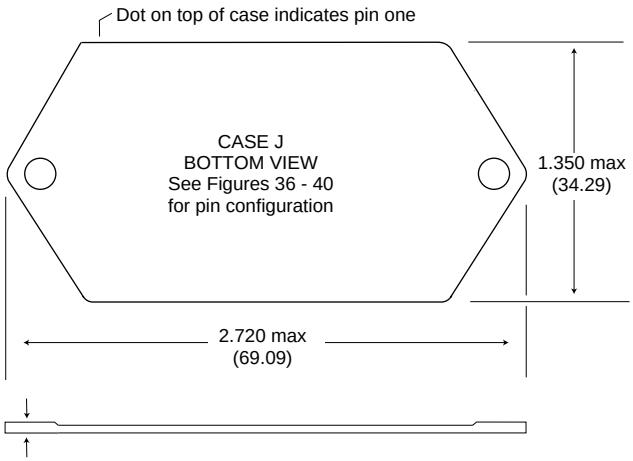


FIGURE 44: CASE K3

CASES



Flange Thickness:

Cases J1 and J5	0.060 (1.52)
Case J2	0.073 (1.85) max
Cases J3 and J4	0.067 +0.005/-0.007 (1.70 +0.13/-0.8)

Materials

Header Case J1
Cold Rolled Steel/Nickel/Gold
Cases J2 - J5
Cold Rolled Steel/Nickel/Tin
Cover Case J1
Kovar/Nickel
Case J2 - J5
Cold Rolled Steel/Nickel/Tin
Pins #52 alloy (all cases)
Case J1
MHV Series Triple – compression glass seal
MTR Series Triple – ceramic seal
Cases J2 - J5
compression glass seal

Case dimensions in inches (mm)

Tolerance ±0.005 (0.13) for three decimal places
±0.01 (0.2) for two decimal places
unless otherwise specified

CAUTION

Heat from reflow or wave soldering may damage the device. Solder pins individually with heat application not exceeding 300°C for 10 seconds per pin.

FIGURE 35: CASE J MAXIMUM DIMENSIONS

Note: Although every effort has been made to render the case drawings at actual size, variations in the printing process may cause some distortion. Please refer to the numerical dimensions for accuracy.

BOTTOM VIEW CASE J1

Flanged cases: Designator required in Case Option position of model number.
MHV Series Triple and MTR Series Triple: Screening – Standard, ES, or 883

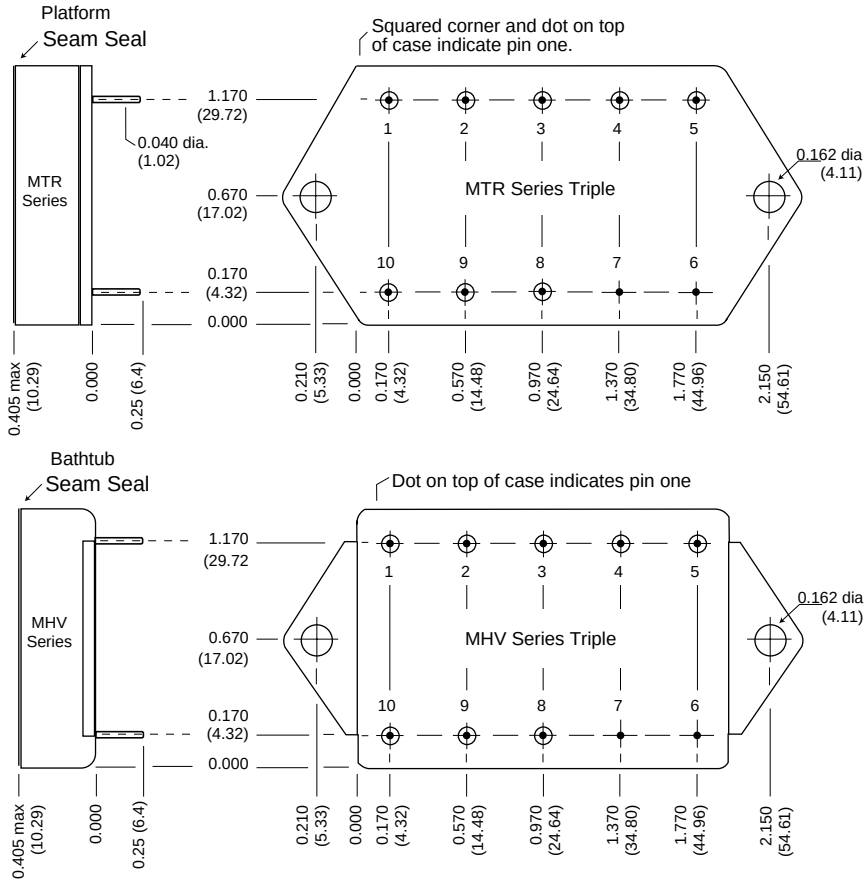


FIGURE 36: CASE J1

125°C PRODUCTS

TEST (125°C Products)	STANDARD	/ES	/883 (Class H)*
PRE-CAP INSPECTION			
Method 2017, 2032	yes	yes	yes
TEMPERATURE CYCLE (10 times)			
Method 1010, Cond. C, -65°C to 150°C	no	no	yes
Method 1010, Cond. B, -55°C to 125°C	no	yes	no
CONSTANT ACCELERATION			
Method 2001, 3000 g	no	no	yes
Method 2001, 500 g	no	yes	no
BURN-IN			
Method 1015, 160 hours at 125°C	no	no	yes
96 hours at 125°C case (typical)	no	yes	no
FINAL ELECTRICAL TEST MIL-PRF-38534, Group A			
Subgroups 1 through 6: -55°C, +25°C, +125°C	no	no	yes
Subgroups 1 and 4: +25°C case	yes	yes	no
HERMETICITY TESTING			
Fine Leak, Method 1014, Cond. A	no	yes	yes
Gross Leak, Method 1014, Cond. C	no	yes	yes
Gross Leak, Dip (1×10^{-3})	yes	no	no
FINAL VISUAL INSPECTION			
Method 2009	yes	yes	yes

Test methods are referenced to MIL-STD-883 as determined by MIL-PRF-38534.

*883 products are built with element evaluated components and are 100% tested and guaranteed over the full military temperature range of –55°C to +125°C.

Applies to the following products

MOR Series	MHD Series	MGH Series	FMGA EMI Filter
MFLHP Series	MHV Series	MCH Series	FMSA EMI Filter
MFL Series	MHF+ Series	FM-704A EMI Filter	HUM Modules**
MHP Series	MHF Series**	FMD**/FME EMI Filter	LCM Modules**
MTR Series	MGA Series	FMC EMI Filter	LIM Modules
MQO Series**	MSA Series	FMH EMI Filter	

**MFLHP Series, MQO Series, MHF Series, FMD EMI Filters, Hum Modules, and LCM Modules do not offer ‘883” screening.