



DC-DC

HIGH RELIABILITY
COTS MODULES

CONVERTERS
and Accessories for
Avionics and Military
Applications



Power Your Critical Mission Today.

INNOVATIVE TECHNOLOGY.
FAST DELIVERY.
AFFORDABLE SOLUTIONS.
CERTIFIED QUALITY.



LEADING POWER PRODUCTS FOR WHEN THE MISSION IS CRITICAL

VPT Inc. is a world leader in providing high density, low profile, lightweight DC-DC converters, EMI filters, and accessory products for use in avionics, military and space applications. VPT is part of the HEICO Electronic Technologies Group (NYSE:HEI.A) (NYSE:HEI). Every day, leading organizations including NASA, Lockheed Martin, Boeing, BAE, Honeywell, GE, Thales, the United States Air Force, and many more depend on quality solutions from VPT to power critical systems.

COMMERCIAL-OFF-THE-SHELF (COTS) POWER CONVERTERS AND ACCESSORIES

At VPT, we take the "Commercial-off-the-Shelf" (COTS) initiative from the Department of Defense seriously. Unlike other DC-DC converters labeled "COTS," VPT's COTS products are built on VPT's long-standing tradition of military-grade products, and are designed specifically for the unique requirements of avionics and military applications.

- Magnetic feedback for optimal performance
- Wide military temperature ranges
- Manufacturing to today's industry standards including J-STD-001, ISO 9001, and IPC-A-610
- Rugged environmental screening
- Optimization for MIL-STD-1275 and MIL-STD-704 bus
- Full military standard input voltage ranges

Ideal for commercial and military avionics, weapons systems, ground vehicles, and more, VPT's COTS power products are priced to satisfy your program's budget and usually ship to you immediately from stock.

When you need mission-ready COTS power products, depend on VPT.

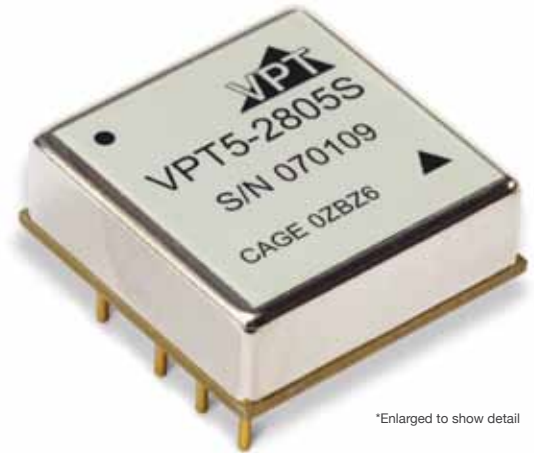


DC-DC CONVERTERS

Max Output Power (W)	Model Series	Input DC Voltage (V)	Output Voltage (V)	EMI Filter	Page #
Rugged Metal COTS DC-DC Converters—The VPT Series for high reliability, high temperature converters in metal packaging.					
5	VPT5-2800S	15–50	Single 3.3, 5, 12, 15	VPTF1, VPTF10, VPTF20, VPTi10, VPTc10	4
15	VPT15-2800S/D	15–50	Single 3.3, 5, 12, 15 Dual ± 5 , ± 12 , ± 15	VPTF1, VPTF3, VPTF10, VPTF20, VPTi10, VPTc10	5
30	VPT30-2800S/D	15–50	Single 3.3, 5, 12, 15 Dual ± 5 , ± 12 , ± 15	VPTF3, VPTF10, VPTF20, VPTi10, VPTc10	6
100+	VPT100+2800S/D	16–40	Single 3.3, 5, 7, 12, 15, 28 Dual ± 12 , ± 15	VPTF10, VPTi10, VPTc10	7
Potted COTS DC-DC Converters—Plastic potted modules for rugged applications.					
30	DVST-2800T	15–50	Triple: 3 outputs 1.8, 3.3, 5, 6.25, 12, 15 each independent	Included	8
200	DV200-28S/D	16–50	Single 3.3, 5, 12, 15 Dual ± 5 , ± 12 , ± 15	DVMN28	9

ACCESSORY PRODUCTS – EMI FILTERS AND TRANSIENT SUPPRESSION

Max Output Current (A)	Model Series	Input DC Voltage (V)	Page #
EMI Filters - Reduce noise and heat with VPT's companion EMI filters.			
1.0	VPTF1-28	0–50	10
3.0	VPTF3-28	0–50	10
10.0	VPTF10-28	0–50	11
20.0	VPTF20-28	0–50	11
14.0	DVMN28	0–50	12
EMI/Transient Suppressor Combo - Protect your system two ways with one module.			
Max Output Current (A)	Model Series	Input DC Voltage (V)	Page #
10.0	VPTi10-28	-40 – +40	12
10.0	VPTc10-28	-40 – +40	13
Other Modules - Input transient suppressor (VPTPCM) and Bus Converter Module (VPTHVM)			
Max Output Power (W)	Model Series	Input DC Voltage (V)	Page #
120	VPTPCM-12	16–40	13
200	VPTHVM-270	180–350	14



*Enlarged to show detail

COMPLETE VME POWER SUPPLY

Max Output Power (W)	Model Series	Input DC Voltage (V)	Page #
VME Power - Single slot 6U, configurable VME power supply delivered fast.			
500.00	VPTVME-28	18–40	15

PARTIAL LIST OF PROGRAMS POWERED BY VPT

Aircraft/Avionics A-1 • Airbus A380 • Airbus A400M • ALR-56 • AW129 • Apache Helicopter • B-52 • Blackhawk • Boeing 737 • Boeing 757 • Boeing 777 • Boeing 787 • Canadair • C130J • C-17 • CH-47 • CH-53 • CL289 DRONE • CX • Comanche • D0428 • Eurofighter Typhoon • F-15 • F-16 • F-18 • F-22 • F-35 • Falcon 7x • Falcon 900 • Fokker • Global Hawk • Gulfstream • Harrier • Hercules C-130 • Hummingbird UAV • Jaas-39 Grippen • LAVA - airborne phased array radar • Lynx • Mini-Armor • NH-90 • P1 • Predator • SAR • Tiger • Tornado • WAH-64 HUMS • Warfighter Information Network - Tactical (WIN-T) • Watchkeeper **Spacecraft/Space Systems** AISAT • FAISAT • GPS IIF • GPS IIR-M • ISS • Mercury Messenger • Phobos-Grunt • Pluto New Horizons • SCISAT • SDO • Space Shuttle Experiments • Space Station • Tacsat 2 • TET-1 • Venus Express Satellite • WFCA • X-33 • X-37

Terrestrial Vehicles Abrams Tank • Bradley Fighting Vehicle • Crusader • Flying Tiger • Future Combat System (FCS) • GIRAFFE Radar • K1A1 MBT • Lance • Leopard • Raven II • Scimitar • SeaLaunch • Titan • Trojan • US Army LAV • Virginia Class Submarine • Warrior **Weapons** ACES • Advanced Targeting Pod • AMRAAM • ATACMS 2000 • Anti-Tank Guided Missile (ATGM) • Ballistic Missile Defense System (BMD) • Blue Shark • DAGR Missile Launcher • Hellfire Missile • IRIS T • JAGM Missile • M299 Launcher • MEADS • Meteor-W • PAC-3 • PAC-3J • PAVEWAY • RAM • Stinger Missile • Tactical Tomahawk • THAAD • Tomahawk • Tracer

VPT5-2800 SERIES

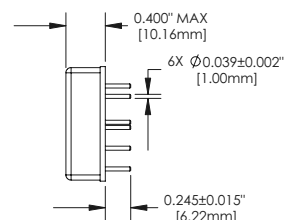
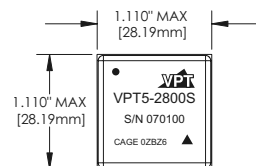
METAL HI-REL COTS DC-DC CONVERTERS

WATTS

- Single outputs of 3.3V, 5V, 12V and 15V
- Very low output noise
- Wide input voltage range - 15 to 50V per MIL-STD-704 and MIL-STD-1275
- Manufactured to J-STD-001
- Operation over a wide -55°C to +100°C
- Six-sided metal cases for improved EMI and mechanical/environmental performance
- No use of optoisolators
- Undervoltage lockout
- Indefinite short circuit protection
- Current limit protection
- High input transient voltage: 80V for 1 sec per MIL-STD-704A
- High power density: >19W/in³
- Tested to JESD22, MIL-STD-810, and MIL-STD-883 including 96 hour burn-in, 100% electrical testing, and temperature cycling testing STANDARD
- Meets MIL-STD-461C/D/E conducted emissions requirements when used with a VPTF Series EMI filter

[SINGLE OUTPUT]

Designed and manufactured in a facility certified to ISO 9001, J-STD-001, and IPC-A-610, these converters are packed with features for your rugged application.



Electrical performance at T_{case} = -55°C to +100°C, V_{in} = +28V ± 5%, full load, unless otherwise specified.

SINGLE OUTPUT VERSION

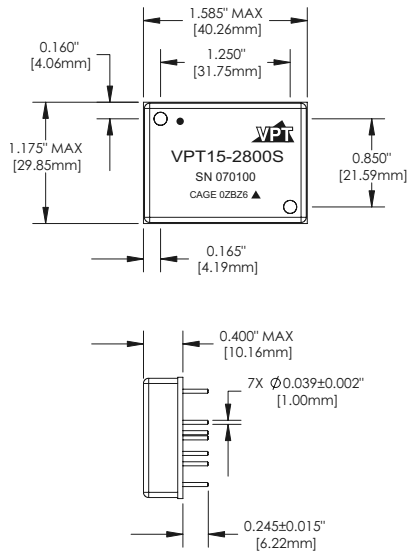
Parameter	Conditions	VPT5-283R3S			VPT5-2805S			VPT5-2812S			VPT5-2815S			Units
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Input Voltage	Continuous Transient ¹	15	28	50 80	15	28	50 80	15	28	50 80	15	28	50 80	V _{dc}
Output Voltage	Full Load	3.21	3.30	3.38	4.87	5.00	5.13	11.70	12.00	12.30	14.62	15.00	15.38	V _{dc}
Output Power ²	V _{in} : 15-50V	0		5	0		5	0		5	0		5	W
Efficiency	V _{in} : 28V, Full Load	62	66		70	74		71	75		71	76		%
Input Ripple	Full Load, 20Hz-10MHz		30	50		30	50		30	50		30	50	mApp
Output Ripple	Full Load, 20Hz-10MHz		45	60		25	40		15	30		15	30	mVpp
Load Regulation	No Load to Full Load		1	10		1	10		1	10		1	10	mV
Line Regulation	V _{in} : 15-50V		1	10		1	10		1	10		1	10	mV

1) Transient time up to 1 second. 2) Derate linearly to 0 at 110°C

For complete data, see data sheet at www.vpt-inc.com

[SINGLE OR DUAL OUTPUT]

This product is characterized by its ultra high power density and small case size.



- Up to 15W output power
- Single outputs of 3.3V, 5V, 12V and 15V
- Dual outputs of ± 5 , ± 12 , and ± 15 V
- Very low output noise
- Wide input voltage range: 15 to 50V per MIL-STD-704
- Manufactured to J-STD-001
- Operation over a wide -55°C to $+100^{\circ}\text{C}$ STANDARD
- Output voltage trim up +10% or down -20%
- Six-sided metal cases for improved EMI and mechanical/environmental performance
- NO use of optoisolators
- Undervoltage lockout
- Indefinite short circuit protection
- Current limit protection
- High input transient voltage: 80V for 1 sec per MIL-STD-704A
- High power density: $> 20 \text{ W/in}^3$
- Tested to JESD22, MIL-STD-810, and MIL-STD-883 including 96 hour burn-in, 100% electrical and temperature cycling testing STANDARD
- Meets MIL-STD-461C/D/E conducted emissions requirements when used with a VPTF Series EMI filter

Electrical performance at $T_{\text{case}} = -55^{\circ}\text{C}$ to $+100^{\circ}\text{C}$, $V_{\text{in}} = +28\text{V} \pm 5\%$, full load, unless otherwise specified.

SINGLE OUTPUT VERSION

Parameter	Conditions	VPT15-283R3S			VPT15-2805S			VPT15-2812S			VPT15-2815S			Units
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Input Voltage	Continuous Transient ¹	15	28	50 80	15	28	50 80	15	28	50 80	15	28	50 80	Vdc
Output Voltage	Full Load	3.21	3.30	3.38	4.87	5.00	5.13	11.7	12.00	12.30	14.62	15.00	15.38	Vdc
Output Power ²	$V_{\text{in}}: 15\text{--}50\text{V}$	0		10	0		15	0		15	0		15	W
Efficiency	$V_{\text{in}}: 28\text{V}$, Full Load	67	70		72	74		76	80		76	80		%
Input Ripple	Full Load, 20Hz–10MHz		40	75		50	80		40	80		40	80	mApp
Output Ripple	Full Load, 20Hz–10MHz		10	40		10	40		10	30		10	30	mVpp
Load Regulation	No Load to Full		1	10		1	10		1	10		1	10	mV
Line Regulation	$V_{\text{in}}: 15\text{--}50\text{V}$		1	10		1	10		1	10		1	10	mV

1) Transient time up to 1 second. 2) Derate linearly to 0 at 110°C

For complete data, see data sheet at www.vpt-inc.com

DUAL OUTPUT VERSION

Parameter	Conditions	VPT15-2805D			VPT15-2812D			VPT15-2815D			Units		
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max			
Input Voltage	Continuous Transient ¹			15	28	50 80	15	28	50 80	15	28	50 80	Vdc
Output Voltage	Full Load		$+V_{\text{O}}$ $-V_{\text{O}}$	4.87 4.82	5.00 5.00	5.13 5.18	11.7 11.58	12.00 12.00	12.30 12.42	14.62 14.47	15.00 15.00	15.38 15.53	Vdc
Output Power ²	Total $\pm V_{\text{out}}$, Either Output			0 0		15 10.5	0 0		15 10.5	0 0		15 10.5	W
Efficiency	Full Load			75	80		77	80		77	80		%
Input Ripple	Full Load, 20Hz–10MHz				40	75		40	75		40	75	mApp
Output Ripple	Full Load, 20Hz–10MHz				20	50		20	50		20	50	mVpp
Load Regulation	No Load to Full		$+V_{\text{O}}$ $-V_{\text{O}}$	1 20	10 100		1 20	10 100		1 20	10 100		mV
Line Regulation	$V_{\text{in}}: 15 - 50$		$+V_{\text{O}}$ $-V_{\text{O}}$	1 30	10 100		1 30	10 150		1 30	10 150		mV
Cross Regulation	+Load 70%, -Load 30% +Load 30%, -Load 70%				150	400		250	500		250	500	mV

1) Transient time up to 1 second. 2) Derate linearly to 0 at 110°C

For complete data, see data sheet at www.vpt-inc.com

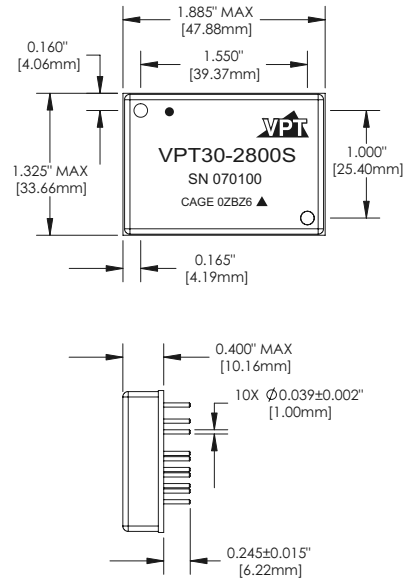
VPT30-2800 SERIES

METAL HI-REL COTS DC-DC CONVERTERS

- Up to 30W output power
- Single outputs of 3.3V, 5V, 12V and 15V
- Dual outputs of ± 5 , ± 12 , and ± 15 V
- Very low output noise
- Wide input voltage range: 15 to 50V per MIL-STD-704
- Manufactured to J-STD-001
- Operation over a wide -55°C to +100°C STANDARD
- Output voltage trim up +10% or down -20%
- Six-sided metal cases for improved EMI and mechanical/environmental performance
- NO use of optoisolators
- Input undervoltage lockout
- Short circuit protection
- Indefinite limit protection
- High power density: >30w/in³
- High input transient voltage: 80V for 1 sec per MIL-STD-704A
- Tested to JESD22, MIL-STD-810, and MIL-STD-883 including 96 hour burn-in, 100% electrical and temperature cycling testing STANDARD
- Meets MIL-STD-461C/D/E conducted emissions requirements when used with a VPTF Series EMI filter

[SINGLE OR DUAL OUTPUT]

The VPT30-2800 Series offers a cost-effective power solution for your rugged avionics, mobile, and ground applications.



Electrical performance at Tcase = -55°C to +100°C, Vin = +28V ± 5%, full load, unless otherwise specified.

SINGLE OUTPUT VERSION

Parameter	Conditions	VPT30-283R3S			VPT30-2805S			VPT30-2812S			VPT30-2815S			Units
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Input Voltage	Continuous Transient ¹	15	28	50	15	28	50	15	28	50	15	28	50	Vdc
Output Voltage	Full Load	3.21	3.30	3.38	4.87	5.00	5.13	11.7	12.00	12.30	14.62	15.00	15.38	Vdc
Output Power ²	Vin: 15-50V	0		25	0		30	0		30	0		30	W
Efficiency	Vin: 28V, Full Load	70	75		74	81		78	83		79	84		%
Input Ripple	Full Load, 20Hz-10MHz		30	75		30	75		30	75		30	75	mApp
Output Ripple	Full Load, 20Hz-10MHz		20	50		15	50		10	50		10	50	mVpp
Load Regulation	No Load to Full		1	10		1	10		1	10		1	10	mV
Line Regulation	Vin: 15-50V		1	10		1	10		1	10		1	10	mV

1) Transient time up to 1 second. 2) Derate linearly to 0 at 110°C

For complete data, see data sheet at www.vpt-inc.com

DUAL OUTPUT VERSION

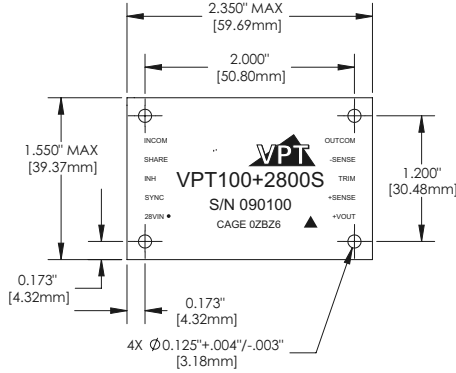
Parameter	Conditions	VPT30-2805D			VPT30-2812D			VPT30-2815D			Units			
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max				
Input Voltage	Continuous Transient ¹			15	28	50	15	28	50	15	28	50	80	Vdc
Output Voltage	Full Load	+Vo	4.87	5.00	5.13	11.70	12.00	12.3	14.62	15.00	15.38			Vdc
		-Vo	4.82	5.00	5.18	11.58	12.00	12.42	14.47	15.00	15.53			Vdc
Output Power ²	Total \pm Vout, Either Output		0		30	0		30	0		30			W
			0		21	0		21	0		21			W
Efficiency	Vin: 28V, Full Load		74	81		79	84		79	84				%
Input Ripple	Full Load, 20Hz-10MHz			30	75		30	75		30	75			mApp
Output Ripple	Full Load, 20Hz-10MHz			15	50		25	50		25	50			mVpp
Load Regulation	No Load to Full	+Vo		1	10		1	10		1	10			mV
		-Vo		30	100		30	150		30	150			mV
Line Regulation	Vin: 15V-50V	+Vo		1	10		1	10		1	10			mV
		-Vo		80	150		80	150		80	150			mV
Cross Regulation	+Load 70%, -Load 30% +Load 30%, -Load 70%			200	400		300	500		300	500			mV

1) Transient time up to 1 second. 2) Derate linearly to 0 at 110°C

For complete data, see data sheet at www.vpt-inc.com

[SINGLE OR DUAL OUTPUT]

This "plus" version of our VPT100-2800S Series delivers parallel operation of up to five units with current sharing, all in a single cost-effective package. Extremely efficient in a tiny quarter brick size, this series is ideal for avionics, ground systems, and other applications.



- Up to 100W output power per unit
- Parallel up to 5 units
- Single outputs of 3.3V, 5V, 7V, 12V, 15V and 28V
- Dual outputs of ± 12 and ± 15 V
- Very high efficiency – up to 91%
- Wide input voltage range: 16 to 40 Volts per MIL-STD-704
- Manufactured to J-STD-001, ISO 9001, and IPC-A-610
- Operation over a wide -55°C to +100°C STANDARD
- Output voltage trim up +10% or down -20%
- Six-sided metal cases for improved EMI performance and mechanical/environmental performance
- NO use of optoisolators for ultimate reliability
- Undervoltage lockout, short circuit protection
- High input transient voltage: 50 Volts for 1 sec
- Tested to JESD22, MIL-STD-810, and MIL-STD-883 including 96 hour burn-in, 100% electrical testing, and temperature cycling testing STANDARD
- Meets MIL-STD-461C/D/E conducted emissions requirements when used with a VPTF Series EMI filter

Electrical performance at Tcase = -55°C to +100°C, Vin = +28V $\pm 5\%$, full load, unless otherwise specified.

SINGLE OUTPUT VERSION

Parameter	Conditions	VPT100+283R3S			VPT100+2805S			VPT100+2807S			VPT100+2812S			VPT100+2815S			VPT100+2828S			Units
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Input Voltage	Continuous Transient ¹	16	28	40	16	28	40	16	28	40	16	28	40	16	28	40	16	28	40	Vdc
Output Voltage	Full Load	3.217	3.20	3.383	4.875	5.00	5.125	6.825	7.00	7.175	11.7	12.00	12.30	14.625	15.00	15.375	27.16	28.00	28.84	Vdc
Output Power ²		0		66	0		100	0		100	0		100	0		100	0		100	W
Efficiency	Vin: 28V, Full Load	85	90		85	90		87	90		87	90		87	91		85	88		%
Input Ripple	Full Load, 20Hz to 10 MHz			180			200			200			200			200			200	mApp
Output Ripple	Full Load, 20Hz to 10MHz			150			150			150			150			150			300	mVpp
Load Regulation	No Load to Full			50			50			70			100			100			100	mV
Line Regulation	Vin: 16-40V			20			20			20			20			20			50	mV

1) Transient time up to 1 second. 2) Derate linearly to 0 at 110°C

For complete data, see data sheet at www.vpt-inc.com

DUAL OUTPUT VERSION

Parameter	Conditions	VPT100+2812D			VPT100+2815D			Units	
		Min	Typ	Max	Min	Typ	Max		
Input Voltage	Continuous Transient ¹	16	28	40	16	28	40	Vdc	
Output Voltage ²	Full Load	+Vo -Vo	11.70 11.58	12.00 12.00	12.30 12.42	14.625 14.475	15.00 15.00	15.375 15.525	Vdc
Output Power ³	Total $\pm V_{out}$ Either Output				100 70			100 70	W
Efficiency	Vin: 28V, Full Load		86	88		87	89		%
Input Ripple	Full Load, 20Hz to 10MHz				200			200	mApp
Output Ripple	Full Load, 20Hz to 10MHz				100			100	mVpp
Load Regulation	No Load to Full Load	+Vo -Vo			100 150			100 150	mV
Line Regulation	Vin: 16-40V	+Vo -Vo			20 100			20 100	mV
Cross Regulation	+Load70%, -Load 30% +Load30%, -Load 70%				450			450	mV

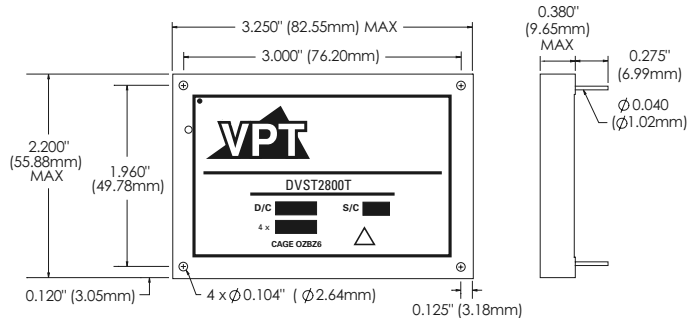
1) Transient time up to 1 second. 2) Equal load at each output. 3) Each output can only support 70% of power.

For complete data, see data sheet at www.vpt-inc.com

- Three isolated configurable outputs
- Extra-wide 15V to 50V input range with 80V transient (MIL-STD-704)
- Undervoltage lockout/soft start
- Fault tolerant design with patented technology – no optoisolators
- Internal EMI filter meets MIL-STD-461C and MIL-STD-461D conducted emissions requirements
- Extremely low profile (.380") and light weight (100g) fully potted packaging
- Case temperature operation range of -55°C to +100°C with no power derating
- 500Vdc input/output isolation
- Indefinite short circuit protection
- Low output noise
- Military and custom environmental screenings available

[TRIPLE OUTPUT]

Three independent, isolated outputs provide maximum flexibility in a power system.



Electrical performance at Tcase = -55°C to +100°C, Vin = +28V ±5%, full load, unless otherwise specified.

TRIPLE OUTPUT VERSION – INPUT

Parameter	Conditions	DVST2800T			Units
		Min	Typ	Max	
Input Voltage	Continuous Transient ¹	15	28	50 80	Vdc
Isolation	Input to Output at 500Vdc	100			M Ω

TRIPLE OUTPUT VERSION – MAIN OUTPUT

Parameter	Conditions	DVST281R8xxyyT			DVST283R3xxyyT			DVST285xxyyT			DVST286R25xxyyT			DVST2812xxyyT			Units
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Output Voltage	Full Load	1.76	1.80	1.84	3.23	3.30	3.37	4.90	5.00	5.10	6.12	6.25	6.38	11.76	12.00	12.24	Vdc
Output Power ²		0		13.5	0		15	0		20	0		20	0		20	W
Efficiency	Full Load		66			73			76			76			76		%
Output Ripple	Full Load, 20Hz–10MHz		20	75		20	50		20	50		20	50		50	50	mVpp
Load Regulation	No Load to Full		10	30		10	30		10	30		10	30		50	50	mV
Line Regulation	Vin: 15–50V		5	20		5	20		5	20		5	20		50	50	mV

For complete data, see data sheet at www.vpt-inc.com

TRIPLE OUTPUT VERSION – AUXILIARY OUTPUT

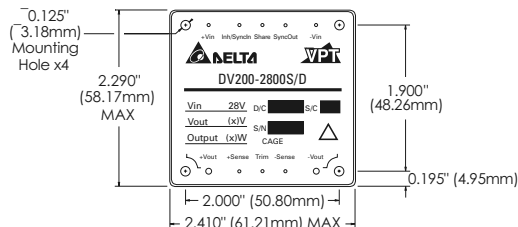
Parameter	Conditions	DVST28x3R3yyT			DVST28x5yyT			DVST28x12yyT			DVST28x15yyT			Units
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Output Voltage	Full Load	3.20	3.30	3.40	4.85	5.00	5.15	11.64	12.00	12.36	14.55	15.00	15.45	Vdc
Output Power ²		0		4	0		5	0		5	0		5	W
Output Ripple	Full Load, 20Hz–10MHz		25	50		25	50		25	50		25	50	mVpp
Load Regulation	No Load to Full		10	30		10	30		10	50		10	50	mV
Line Regulation	Vin: 15–50V		5	20		5	20		5	20		5	20	mV

1) Transient time up to 1 second. 2) Derate linearly to 0 at 110°C

For complete data, see data sheet at www.vpt-inc.com

[SINGLE OR DUAL OUTPUT]

Utilizing patented design techniques, the DV200 packs 200W in a half-brick size to deliver the highest power density available today. This COTS potted module is built in a facility qualified to ISO 9001 and certified to MIL-PRF-38534 and MIL-STD-883.



- High power density, $\approx 80W/in^3$
- Single outputs of 3.3V, 5V, 12V and 15V
- Dual outputs of $\pm 5V$, $\pm 12V$ and $\pm 15V$
- Extra-wide 16V to 50V input range with 55V transient
- Fault tolerant design with patented technology – no optoisolators
- Undervoltage lockout
- Magnetic feedback circuit
- Output voltage trim up +10% or down -20%
- Short circuit protection
- Extremely low profile (.465") and light weight (115g) fully potted, half-brick packaging
- Wide case temperature operation range of $-55^\circ C$ to $+100^\circ C$ with no power derating
- 500Vdc input/output isolation
- Environmental screenings optional
- Meets MIL-STD-461C and MIL-STD-461D EMC requirements when used with a DVMN28 EMI filter

Electrical performance at $T_{case} = -55^\circ C$ to $+100^\circ C$, $V_{in} = +28V \pm 5\%$, full load, unless otherwise specified.

SINGLE OUTPUT VERSION

Parameter	Conditions	DV200-283R3S			DV200-2805S			DV200-2812S			DV200-2815S			Units
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Input Voltage	Continuous Transient ¹	18	28	50 55	16	28	50 55	16	28	50 55	16	28	50 55	Vdc
Output Voltage	Full Load	3.25	3.30	3.35	4.925	5.00	5.075	11.82	12.00	12.18	14.775	15.00	15.225	Vdc
Output Power	$V_{in}: 18-50V$ $V_{in}: 16-18V$	0		100 0	0		150 90	0		175 105	0		200 120	W
Efficiency	$V_{in}: 28V$, Full Load	74	80		79	83		81	84		82	86		%
Input Ripple	Full Load, 20Hz–10MHz			100			100			150			150	mApp
Output Ripple	Full Load, 10kHz–10MHz Full Load, 10kHz–2MHz		50 10	200 50		50 10	200 50		100 5	200 30		100 5	200 30	mVpp
Load Regulation	No Load to Full		10	100		10	100		10	120		10	120	mV
Line Regulation	$V_{in}: 18-50V$		10	80		10	80		10	100		10	100	mV

For complete data, see data sheet at www.vpt-inc.com

DUAL OUTPUT VERSION

Parameter	Conditions		DV200-2805D			DV200-2812D			DV200-2815D			Units
			Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Input Voltage	Continuous Transient ¹		16	28	50 55	16	28	50 55	16	28	50 55	Vdc
Output Voltage ²	Full Load	+Vo -Vo	4.925 4.75	5.00 5.00	5.075 5.25	11.82 11.52	12.00 12.00	12.18 12.48	14.775 14.40	15.00 15.00	15.225 15.60	Vdc
Output Power ^{3,2}	$V_{in}: 18-50V$ $V_{in}: 16-18V$				150 90			175 105			200 120	W
Efficiency	$V_{in}: 28V$, Full Load		79	82		80	84		81	85		%
Input Ripple	Full Load, 20Hz–10MHz				150			250			300	mApp
Output Ripple	Full Load, 20Hz–10MHz			50	150		50	200		50	200	mVpp
Load Regulation ⁴	No Load to Full	+Vo -Vo		10 10	80 200		10 10	80 200		10 10	80 200	mV
Line Regulation	$V_{in}: 18-40V$	+Vo -Vo		10 10	80 200		10 10	80 200		10 10	80 200	mV
Cross Regulation	+Load 70%, -Load 30% +Load 30%, -Load 70%				550			550			550	mV

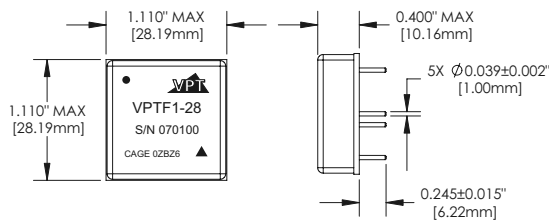
1) Transient time up to 1 second. 2) Up to 70% of the total power or current can be drawn from any one of the two outputs. 3) 100% output power available for $V_{in} = 18V$ to $50V$ and only 60% output power available for $V_{in} = 16V$ to $18V$. 4) Half load at +Vout and half load at -Vout.

For complete data, see data sheet at www.vpt-inc.com

VPTF1-28 SERIES EMI FILTER - 1 AMP

The VPTF1-28 filters conducted emissions of two VPT5-2800 or one VPT15-2800 Series DC-DC converter.

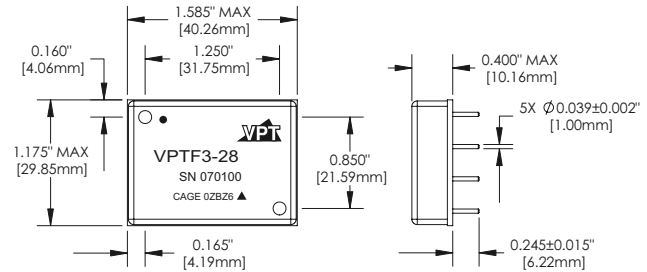
- High reliability
- Wide input voltage range: 0 to 50V per MIL-STD-704 and MIL-STD-1275
- Up to 1.0 amp maximum current
- Manufactured to J-STD-001
- Operation over a wide -55°C to +100°C STANDARD
- 55dB minimum attenuation at 500 kHz
- High input transient voltage: 80 Volts for 1 sec per MIL-STD-704A
- Meets MIL-STD-461C/D/E conducted emissions requirements when used with a VPT Series DC-DC converter
- Meets conducted susceptibility requirements specified in MIL-STD-461C, CS01 and CS02 and MIL-STD-461D/E
- Tested to JESD22, MIL-STD-810, and MIL-STD-883



VPTF3-28 SERIES EMI FILTER - 3 AMP

The VPTF3-28 filters conducted emissions of up to two VPT15-2800 Series DC-DC converters.

- High reliability
- Wide input voltage range: 0 to 50V per MIL-STD-704 and MIL-STD-1275
- Up to 3.0 amp maximum current
- Manufactured to J-STD-001
- Operation over a wide -55°C to +100°C STANDARD
- 55dB minimum attenuation at 500 kHz
- High input transient voltage: 80 Volts for 1 sec per MIL-STD-704A
- Meets MIL-STD-461C/D/E conducted emissions requirements when used with a VPT Series DC-DC converter
- Meets conducted susceptibility requirements specified in MIL-STD-461C, CS01 and CS02 and MIL-STD-461D/E
- Tested to JESD22, MIL-STD-810, and MIL-STD-883



Electrical performance at $T_{case} = -55^{\circ}C$ to $+100^{\circ}C$, $V_{in} = +28V \pm 5\%$, full load, unless otherwise specified.

Parameter	Conditions	VPTF1-28			Units
		Min	Typ	Max	
Input Voltage	Continuous Transient ¹	0	28	50 80	Vdc
Output Current		0		1.0	A
Output Power		0		25	W
Noise Rejection	f = 500kHz	55			dB

1) Transient time up to 1 second.

For complete data, see data sheet at www.vpt-inc.com

Electrical performance at $T_{case} = -55^{\circ}C$ to $+100^{\circ}C$, $V_{in} = +28V \pm 5\%$, full load, unless otherwise specified.

Parameter	Conditions	VPTF3-28			Units
		Min	Typ	Max	
Input Voltage	Continuous Transient ¹	0	28	50 80	Vdc
Output Current		0		3.0	A
Output Power		0		75	W
Noise Rejection	f = 500kHz	55			dB

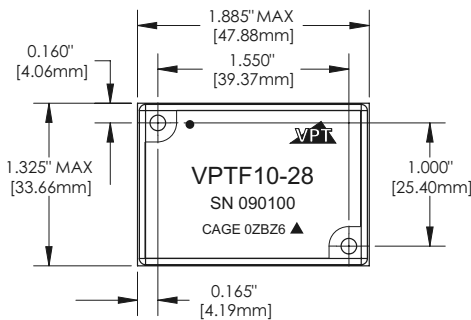
1) Transient time up to 1 second.

For complete data, see data sheet at www.vpt-inc.com

VPTF10-28 SERIES EMI FILTER - 10 AMP

The VPTF10-28 filters conducted emissions of multiple VPT Series DC-DC converters up to its current rating, providing compliance to MIL-STD-461C/D/E for conducted emissions.

- High reliability
- Wide input voltage range: 0 to 50V per MIL-STD-704
- Up to 10.0 amp maximum current
- Up to 200W output power
- Manufactured to J-STD-001, ISO 9001, and IPC-A-610
- Operation over a wide -55°C to +100°C STANDARD
- Six-sided rugged metal enclosure
- 45dB minimum attenuation at 500 kHz
- High input transient voltage: 80 Volts for 1 sec per MIL-STD 704A
- Meets MIL-STD-461C/D/E conducted emissions requirements when used with a VPT Series DC-DC converter
- Meets conducted susceptibility specified in MIL-STD-461C, CS01 and CS02 and MIL-STD-461D/E
- Tested to JESD22, MIL-STD-810, and MIL-STD-883



Electrical performance at $T_{case} = -55^{\circ}\text{C}$ to $+100^{\circ}\text{C}$, $V_{in} = +28\text{V} \pm 5\%$, full load, unless otherwise specified.

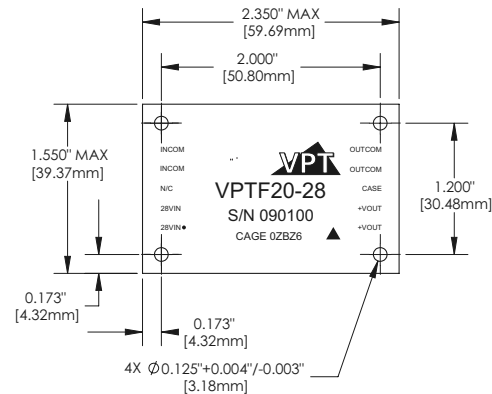
Parameter	Conditions	VPTF10-28			Units
		Min	Typ	Max	
Input Voltage	Continuous Transient ¹	0	28	50 80	Vdc
Output Current ¹	$V_{in}: 0-50\text{V}$	0		10	A
Noise Rejection	$f = 500\text{kHz}$	45			dB

¹) Derate linearly to 0° at 110°C. For complete data, see data sheet at www.vpt-inc.com

VPTF20-28 SERIES EMI FILTER - 20 AMP

The VPTF20-28 EMI filter works in conjunction most VPT Series DC-DC converters.

- High reliability
- Wide input voltage range: 0 to 50V per MIL-STD-704 and MIL-STD-1275
- Up to 20.0 amp maximum current
- Up to 400W output power
- Manufactured to J-STD-001, ISO 9001, and IPC-A-610
- Operation over a wide -55°C to +100°C STANDARD
- Six-sided rugged metal enclosure
- 45dB minimum attenuation at 500 kHz
- High input transient voltage: 80 Volts for 1 sec per MIL-STD-704A
- Meets MIL-STD-461C/D/E conducted emissions requirements when used with a VPT Series DC-DC converter
- Meets conducted susceptibility specified in MIL-STD-461C, CS01 and CS02 and MIL-STD-461D/E
- Tested to JESD22, MIL-STD-810, and MIL-STD-883



Electrical performance at $T_{case} = -55^{\circ}\text{C}$ to $+100^{\circ}\text{C}$, $V_{in} = +28\text{V} \pm 5\%$, full load, unless otherwise specified.

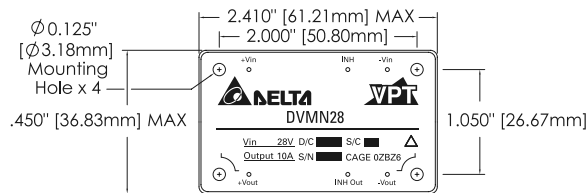
Parameter	Conditions	VPTF20-28			Units
		Min	Typ	Max	
Input Voltage	Continuous Transient ¹	0	28	50 80	Vdc
Output Current ¹	$V_{in}: 0-50\text{V}$	0		20	A
Noise Rejection	$f = 500\text{kHz}$	45			dB

¹) Derate linearly to 0° at 110°C. For complete data, see data sheet at www.vpt-inc.com

DVMN28 EMI FILTER

For use with the DV200-28 Series DC-DC converters

- 14A max output current
- 50dB minimum attenuation at 500kHz
- Meets MIL-STD-704A, B, C, and D surge limits
- Compliant to MIL-STD-461C CE03 and MIL-STD-461D CE102 requirements
- Compliant to DEF STAN 59-41 and 61-5 EMC requirements
- Protects against conducted susceptibility specified in MIL-STD-461C, CS01 and CS02
- Protects against voltage spikes specified in MIL-STD-461C CS06
- Wide case temperature operation range of -55°C to +100°C
- Environmental screenings optional



Electrical performance at $T_{case} = -55^{\circ}\text{C}$ to $+100^{\circ}\text{C}$,
 $V_{in} = +28\text{V} \pm 5\%$, full load, unless otherwise specified.

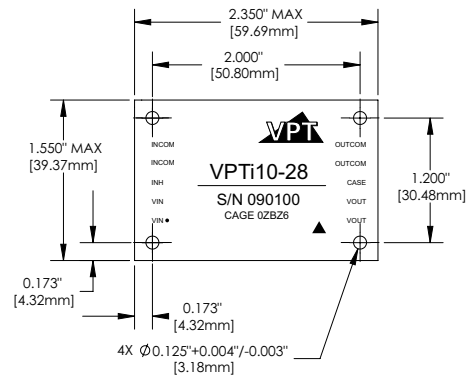
Parameter	Conditions	DVMN28			Units
		Min	Typ	Max	
Input Voltage	Continuous Transient - 50ms, 500 mΩ Transient - 10 μs, 50Ω	16	28	50	Vdc
Output Current	Continuous			14	A
Noise Rejection	f = 500kHz	50	60		dB
Output Clamp Voltage		51		55	Vdc

For complete data, see data sheet at www.vpt-inc.com

VPTi10-28 SERIES EMI FILTER AND TRANSIENT SUPPRESSOR -10 AMP

The VPTi10-28 Series EMI filter and transient suppression combines two modules in one mini package to reduce the reflected noise of DC-DC converters while simultaneously protecting your power system from inrush current damage.

- High reliability
- 10A output current, 200W output power
- Transient operation up to 80V per MIL-STD-704 and 100V per MIL-STD-1275
- 45db minimum attenuation at 500 kHz
- Operation over a wide temperature range of -55°C to 100°C STANDARD
- Six-sided rugged metal enclosure
- Meets MIL-STD-461 C/D/E conducted emissions requirements when used with a VPT Series DC-DC converter
- Meets conducted susceptibility requirements of MIL-STD-461C, CS01 and CS02, and MIL-STD-461D/E when used with any VPT Series DC-DC converter
- Environmental screening available
- Tested to JESD22, MIL-STD-810, and MILSTD-883



Electrical performance at $T_{case} = -55^{\circ}\text{C}$ to $+100^{\circ}\text{C}$,
 $V_{in} = +28\text{V} \pm 5\%$, full load, unless otherwise specified.

Parameter	Conditions	VPTi10-28			Units
		Min	Typ	Max	
Input Voltage	Continuous Transient ¹	-40	28	40 50	Vdc
Output Current ²	Vin: 0-50V	0		10	A
Noise Rejection	f = 500kHz	45			dB

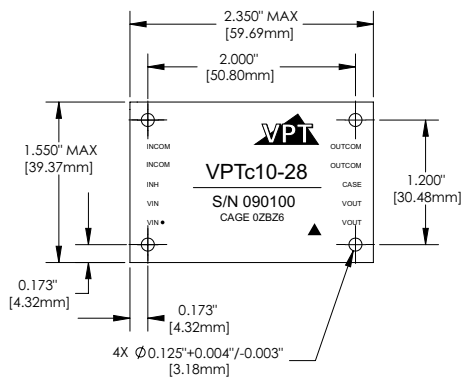
1) For 1 second, verified by qualification testing. 2) Derate linearly to 0° at 110°C.

For complete data, see data sheet at www.vpt-inc.com

VPTc10-28 SERIES EMI FILTER AND TRANSIENT SUPPRESSOR - 10 AMP

The VPTc10-28 Series EMI filter and transient suppression is similar to the VPTi10-28, but meets international filtering and suppression standards as well.

- High reliability
- Up to 10A output current, up to 150W output power
- Transient operation of up to 202V per ISO 7637-2 and DEF STAN 61-5 part 6, issue 6
- 45db minimum attenuation at 500 kHz
- Operation over a wide temperature range of -55°C to 100°C STANDARD
- Meets conducted emissions requirements of DEF STAN 59-411 part 3, issue 1, when used with VPT Series DC-DC converters
- Meets conducted susceptibility requirements of DEF STAN 59-411 part 3, issue 1, for land applications when used with VPT Series DC-DC converters
- Intended for harsh environments including severe vibration, shock, and temperature cycling conditions
- Tested to JESD22, MIL-STD-810, and MIL-STD-883



Electrical performance at Tcase = -55°C to +100°C, Vin = +28V ±5%, full load, unless otherwise specified.

Parameter	Conditions	VPTc10-28			Units
		Min	Typ	Max	
Input Voltage	Continuous	-40	28	40	Vdc
	Transient ¹			50	
	Transient - 350ms, 1Ω per ISO-7637-2 load dump			202	
	Transient - 1μs, 50Ω	-250		250	
Output Current ²	Vin:0-50V	0		10	A
Noise Rejection	f = 500kHz	45	65		dB

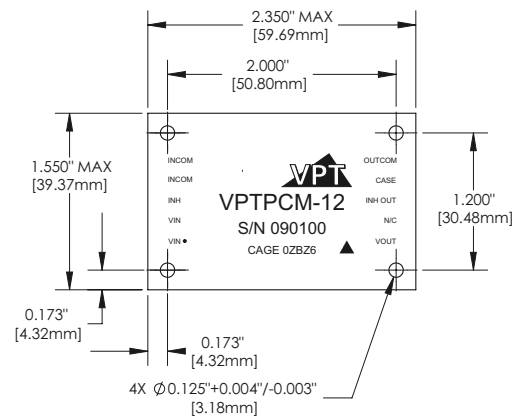
1) For 1 second, verified by qualification testing. 2) Derate linearly to 0° at 110°C.

For complete data, see data sheet at www.vpt-inc.com

VPTPCM-12 LINE CONDITIONING MODULE

When your input power is on the line, depend on VPT's line conditioning module. The VPTPCM-12 ensures smooth, consistent input power for the ultimate flexibility in designing reliable military and avionics systems.

- Continuous operation with input transients down to 6V and up to 100V per MIL-STD-1275
- A wide input range that provides dual nominal input voltages (12V and 28V) to satisfy both MIL-STD-1275 and MIL-STD-704 requirements
- Transient suppression up to 600Vdc
- Up to 120W output power from a single unit
- Operation over a wide -55°C to +100°C STANDARD
- High efficiency, up to 99%
- Manufactured in a facility certified to ISO 9001, J-STD-001 and IPC-A-610
- Six-sided metal case intended for rugged environments
- Space-saving size – just 2.350" x 1.550" x 0.465", 90g



Electrical Performance at Tcase = -55°C to +100°C, Vin = +28V ± 5%, full load, unless otherwise specified.

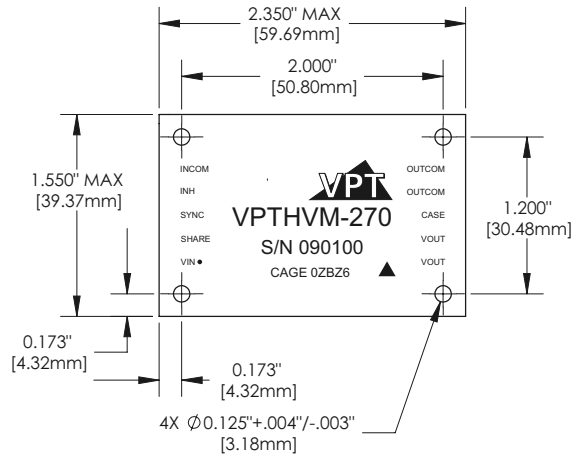
Parameter	Conditions	VPTPCM-12			Units
		Min	Typ	Max	
Input Voltage	Continuous	9		40	Vdc
	Transient, 1 sec	6		50	
	Transient - 50ms, 500mΩ			100	
	Transient - 70μs, 15mJ	-250		250	
	Transient - 10μs, 50Ω			600	
Output Voltage	Continuous	17		40	Vdc
	Transient			50	
Output Power		0		120	W
Efficiency	Vin=28V	97	99		%
	Vin=12V	88	92		%
Output Ripple	Vin=12V, full load, 20Hz to 10MHz			500	mVpp
Input Ripple	Vin=12V, full load, 20Hz to 10MHz			250	mApp

For complete data, see data sheet at www.vpt-inc.com

VPTHVM-270 BUS CONVERTER

With up to 200W of output power, this isolated, regulated bus converter module operates from a 270V bus to step down the power and create a 28V bus for your power system. A wide input voltage range accommodates MIL-STD-704 input power requirements for avionics, mobile, ground and other applications. The high efficiency design reduces input power requirements and eases thermal management.

- Up to 200W output power
- Single output
- Use in conjunction with any VPT DV or VPT Series 28V DC-DC converters
- Very high efficiency – up to 91%
- Wide input voltage range: 160 to 500 Volts per MIL-STD-704
- High input transient voltage - 500V for 1 second
- Low input transient voltage - 160V for 1 second
- Operation over a wide -55°C to +100°C STANDARD
- High isolation: 2250V
- Six-sided metal cases for improved EMI performance and mechanical/environmental performance
- Parallel up to 5 units with current sharing
- Undervoltage lockout, fixed frequency, output soft start, current limit protection
- No optoisolators for ultimate reliability
- Environmental screening including a 96 hour burn-in, 100% electrical testing, and temperature cycling testing STANDARD
- Testing to JESD22, MIL-STD-810, MIL-STD-883
- Designed and manufactured in a facility certified to ISO 9001, J-STD-001, and IPC-A-610



Electrical Performance at Tcase = -55°C to +100°C, Vin = +270V ± 5%, full load, unless otherwise specified.

Parameter	Conditions	VPTHVM-270			Units
		Min	Typ	Max	
Input Voltage	Continuous	180		350	Vdc
	Transient (1 second)	160		500	
Output Voltage	Vin=270V	26	27	30	Vdc
	Vin=160V to 500V	16	27	30	
Output Power ¹		0		200	W
Efficiency	Vin: 270V	89	91		%
Input Ripple	Vin=270, Full Load, 20Hz to 10MHz		30	80	mVpp
Output Ripple	20Hz to 10MHz		100	250	mVpp
Isolation	2250Vdc	100			mΩ

¹) Derate linearly to 0° at 110°C. **For complete data, see data sheet at www.vpt-inc.com**

BUILT SMARTER. BUILT FASTER. INTRODUCING THE VME DC-DC POWER SUPPLY FROM VPT.

VPT builds your VME power system using a wide base of standard, mission-proven VPT DC-DC converters. As a result your product is delivered quickly, and with maximum reliability, so that your avionics or military mission can get off the ground fast. VPT's VME power supply is a smart, effective COTS solution for many demanding high reliability applications. **This product is available in the US only at this time.**

- Single slot 6U VME form factor
- Up to 5 configurable outputs
- IEEE Std. 1101.2-1992 compatible
- Conduction cooled
- 28Vdc input per MIL-STD-704
- MIL-STD-1275 compatible version available
- Up to 500W maximum output power
- Meets MIL-STD-461 D/E/F conducted emissions requirements
- Input undervoltage lockout
- Over voltage, over current protection
- Rugged metal enclosure
- Wide temperature range: -55°C to +85°C
- Custom configurations available



SEE THE TECH
VIDEO ONLINE AT
WWW.VPT-INC.COM!

Electrical Performance at Tcase = -55°C to +85°C, Vin = +28V ± 5%, full load, unless otherwise specified.

Parameter	Conditions	VPTVME-28			Units
		Min	Typ	Max	
Input Voltage	Continuous Transient ¹	18	28	40 50	Vdc
Output Power		0		500	W
Efficiency		85			%
Isolation	500Vdc	100			mΩ

Parameter	Conditions	5V Output			Units
		Min	Typ	Max	
Output Voltage	Full Load	4.875	5.00	5.125	V
Power		0		200	W
Current		0		40	A
Ripple Voltage	Full Load, 20Hz to 10MHz			50	mVpp
Line Regulation	Vin=18V to 40V			20	mV
Load Regulation	No Load to Full Load			50	mΩ

Parameter	Conditions	3.3V Output			Units
		Min	Typ	Max	
Output Voltage	Full Load	3.217	3.3	3.383	V
Power		0		132	W
Current		0		40	A
Ripple Voltage	Full Load, 20Hz to 10MHz			50	mVpp
Line Regulation	Vin=18V to 40V			20	mV
Load Regulation	No Load to Full Load			50	mΩ

Parameter	Conditions	±12V Output			Units
		Min	Typ	Max	
Output Voltage	Full Load	11.7	12	12.30	V
Power		0		100	W
Current		0		8.33	A
Ripple Voltage	Full Load, 20Hz to 10MHz			100	mVpp
Line Regulation	Vin=18V to 40V			20	mV
Load Regulation	No Load to Full Load			100	mΩ

Parameter	Conditions	+5V Standby Output			Units
		Min	Typ	Max	
Output Voltage	Full Load	4.825	5	5.175	V
Power		0		5	W
Current		0		1	A
Ripple Voltage	Full Load, 20Hz to 10MHz			50	mVpp
Line Regulation	Vin=18V to 40V			20	mV
Load Regulation	No Load to Full Load			80	mΩ

For complete data, see data sheet at www.vpt-inc.com

SCREENING & DEFINITIONS



VPT's converters and EMI filters are available with targeted screening grades to satisfy a wide range of requirements. Additional custom environmental screening may be performed to meet each customer's needs. Please contact a sales representative concerning different environmental screenings.

Standard Screening for Hi-Rel COTS DC-DC Converters and EMI Filters

Screening	Condition
Internal Visual	IPC-A-610
Stabilization Bake	MIL-STD-883, Method 1008, Condition B, 125°C, 24 hours
Temperature Cycling	MIL-STD-883, Method 1010, Condition B, -55°C to +125°C, 10 Cycles
Burn-In	MIL-STD-883, Method 1015, 96 hours at +100°C
Final Electrical	100% at 25°C
External Visual	MIL-STD-883, Method 2009

Available Environmental Screening Options for Potted COTS DC-DC Converters and EMI Filters

Screening	MIL-STD-883	Standard (No Suffix)	Military/MIL
Pre-cap Inspection	IPC-A-610 Class III	■	■
Temperature Cycling	Method 1010, Condition B, 10 cycles		■
Burn-In	96 hours at 100°C 12 hours at 100°C	■	■
Final Electrical	100% at -55°C, 25°C, 100°C ¹ 100% at 25°C	■	■
Final Inspection	Method 2009	■	■

1) 100% R&R testing at -55°C, +25°C, and +100°C with all test data included in product shipment.

DEFINITION OF PART NUMBERS

COTS Potted DC-DC Converters

Product Name	Nominal Output Power (W)	Input Voltage (V)	Output Voltage (V)		No. of Outputs		Screening Code	
DV 200- 28 05 D	200	28	1R8	1.8 Volts	S D	Single Dual	None	Standard
			3R3	3.3 Volts			ML	MIL
			05	5 Volts				
			6R25	6.25 Volts				
			12	12 Volts				
			15	15 Volts				

EMI Filters

Product Name	Nominal Output Current (A)	Input Voltage (V)
VPTF 3 28	1	28
	3	

Hi-Rel COTS DC-DC Converters

Product Name	Nominal Output Power (W)	Input Voltage (V)	Output Voltage (V)		No. of Outputs	
VPT 5- 28 05 S	5	28	3R3	3.3 Volts	S D	Single Dual
	15		5	5 Volts		
	30		7	7 Volts		
	100		12	12 Volts		
			15	15 Volts		
			28	28 Volts		

POWER SYSTEM DESIGN & ASSEMBLY

VPT is your partner for fast, affordable design and assembly of your avionics, military, and space power systems. As a global leader in high reliability DC-DC power conversion, we combine experienced power system design with military quality standards to deliver your system quickly, expertly, and cost-effectively.

For your project, VPT offers:

- Expert, experienced designers
- An extensive portfolio of technical capabilities
- Exclusive experience in avionics, military, and space systems
- A proven, documented design process in class 100K facilities
- A top-flight quality system adhering to standards controlled by MIL-PRF-38534 and ISO 9001:2000

If you're short on time, resources, or internal expertise for your power system project, we invite you to consider VPT. We'll work with you to design and deliver your custom power system on time, within budget, and to your exact specifications.



TECHNICAL DESIGN ASSISTANCE

Designing a new power system? Looking to maximize efficiency and cost? Then rely on VPT's engineers and our Technical Design Assistance service.

Some of the issues we can help with include:

- Implementing a power conversion design to maximize power and cost efficiencies
- Understanding power converter topologies and performance characteristics so you can decide which products work best for your design
- Understanding reliability metrics, power derating, environmental stress screening, thermal management, and EMI performance

Hosted at the location of your choice, design assistance sessions are tailored to your specific project and typically last about an hour.

FOR FURTHER INFORMATION ON THESE PRODUCTS AND SERVICES, PLEASE CONTACT US.

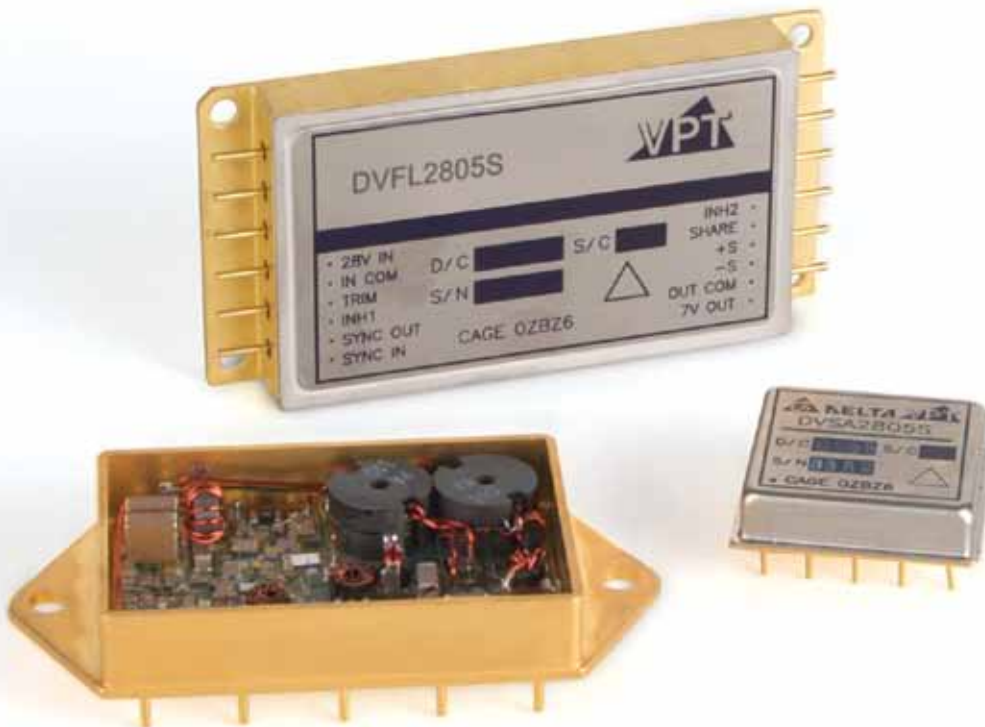
Web
Phone
Email

www.vpt-inc.com
425.353.3010
vptsales@vpt-inc.com

HI-REL HYBRID DC-DC POWER CONVERTERS AND ACCESSORIES

Designed for Your Critical Reliability Programs. VPT's traditional line of hybrid DC-DC power converters is mission proven and ready to fly when you are. Each innovative product delivers the utmost in reliability and performance under pressure. Count on this product line for your flight-critical avionics, military, and space applications.

- Power outputs ranging from 1.5 to 120 W
- Single, dual, and triple output configurations
- 28V nominal inputs
- Small size, light weight
- Thick-film hybrid technology for the ultimate in reliability
- Fully hermetic packaging
- Extreme reliability – no use of optoisolators
- Radiation tolerant modules with available radiation hardening for space applications
- Full military temperature range of -55°C to +125°C
- Available compliance with MIL-PRF-38534 Classes H/K
- Many modules on Standard Military Drawings (SMDs)
- Military, space, and custom environmental screenings available
- EMI filter modules ensure MIL-STD-461C and MIL-STD 461D/E EMI requirements
- Three environmental screening grades to fit any high reliability application



ALSO ASK ABOUT OUR DSCC CERTIFICATIONS.



**DSCC Qualified
MIL-PRF-38534**

Visit www.vpt-inc.com for the latest in:



POWER YOUR CRITICAL MISSION TODAY

CONTACT YOUR LOCAL SALES
REPRESENTATIVE

To learn more about how VPT DC-DC converters, EMI filters, and accessories can power your mission today, visit the VPT Web site at www.vpt-inc.com.

VPT, Inc. Sales and Support Headquarters

11314 4th Avenue West
Suite 206
Everett, WA 98204

Telephone: (425) 353-3010
Fax: (425) 353-4030
Email: vptsales@vpt-inc.com



VPT, Inc. Headquarters

2801 Commerce Street SE
Blacksburg, VA 24060

Telephone: (540) 552-5000
Fax: (540) 552-5003
Email: vptsales@vpt-inc.com