

# PSDV-A-xxxxE



## PSDV-A-SERIES

Rev.07-2015

- ✓ 0.25 Watt
- ✓ Unregulated
- ✓ **Single Output**
- ✓ **SMD Case**
- ✓ **1.5 kV - 3 kV DC I/O Isolation**
- ✓ **Continuous Short Circuit Prot.**
- ✓ **2 Years Warranty (Date Code)**

The PSDV-A series is a family of cost effective 0.25 W single output DC/DC converters. These converters are in an ultra miniature SMD 5-pin case. Devices are encapsulated. High performance features: 1500VDC and 3000VDC (for the most types) input/output isolation, industrial standard pinout, high power density. No heatsink required.

All specifications typical at Ta=25°C, nominal input voltage and full load unless otherwise specified

### Input Specifications

Voltage Range	±10%
Current max.	15 – 68mA (See table)
Current No-Load	8 – 15mA (See table)
Filter	Capacitors
Reflected Ripple Current (@12uH)	20mA pk-pk (5Vin) 5mA pk-pk (12/24Vin)

### General Specifications

Efficiency	Up to 79% (See table)
Isolation I/O (60 sec)	1500VDC (standard) 3000VDC (add "H30")
Isolation I/O Capacitance	20 pF
Isolation I/O Resistance	1000 MΩ, min.
Switching Frequency	100 kHz
Humidity (rel.)	95%
MTBF (Calculated MIL-HDBK-217F)	>3500 Khrs
Pin Welding Temperature (10 sec.)	300°C, max.
Reflow Soldering	245°C, peak (217°C ≤60s)

### EMC Specifications

Radiated Emissions*	CISPR22/EN55022	Class B
Conducted Emissions*	CISPR22/EN55022	Class B
ESD (contact ±6KV / ±8KV)	IEC-61000-4-2	Pref. Criteria B

\*Input filter components are required to meet (see App Note)

### Output Specifications

Voltage accuracy	See App Note
Line regulation (per 1% Vin change)	±1.2% (1.5% for 3.3Vout)
Load regulation (10% to 100%)	See Table
Ripple & noise (20 MHz bandwidth)	20 mV pk-pk
Temperature coefficient	±0.03%/°C
Capacitor load (Test: min. Vin + const. load)	220uF
Short Circuit Protection	Continuous

### Environment / Physical Specifications

Operation Temp.	-40°C to 105°C
Case Temp. Rise (nominal Input and full load)	15°C
Storage	-55°C to 125°C
Cooling	Nature / Free Air
Case Material	Plastic (UL94V-0 rated)
Potting	Epoxy (UL94V-0 rated)
Weight	~1.5 g

# Selection Guide

## Single Output

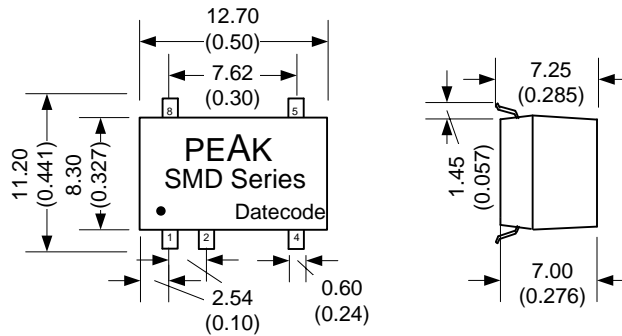
Order #	Input Voltage (VDC)	Output Voltage (VDC)	Output Current max. (mA)	Output Current min. (mA)	Input Current Full Load typ. (mA)	Input Current no Load typ. (mA)	Load Regulation (%)	Efficiency (%)
<b><u>SINGLE OUTPUT</u></b>								
PSDV-A-053R3E	5	3.3	76	8	68	15	15	74
PSDV-A-0505E*	5	5	50	5	68	15	12	79
PSDV-A-1205E*	12	5	50	5	27	10	12	79
PSDV-A-1212E	12	12	21	2	27	10	7	79
PSDV-A-2405E	24	5	50	5	15	8	12	71

If you need other specifications, please enquire.

**\*For optional 3000KV isolation, please add "H30"**  
**For example: PSDV-A-0505EH30**

Notes:

# Package / Pinning / Derating



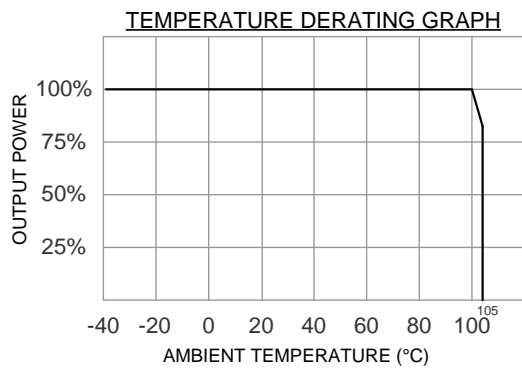
All dimensions are typical in millimeters (inches).

- Pin pitch tolerance:  $\pm 0.35$  ( $\pm 0.014$ )

- Case tolerance  $\pm 0.7$  ( $\pm 0.028$ )

Specification may change without notice.

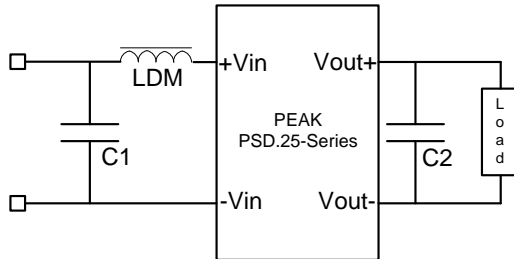
**PSDV-Series**  
**Single output**



PIN CONNECTIONS	
#	SINGLE
1	- Vin
2	+Vin
4	- Vout
5	+Vout
8	N.C.

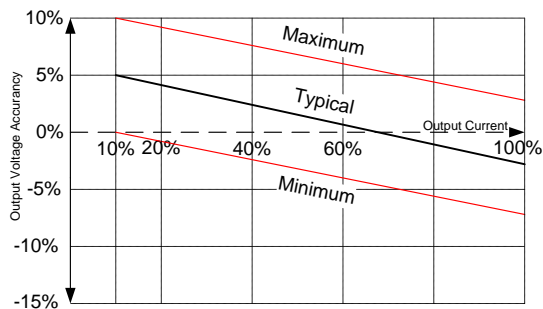
# App Notes

## EMC Typical Recommended Circuit (CLASS B)



Vout	C1	C2	LDM
3.3 / 5	4.7uF/50V	10 uF	6.8uH
12	4.7uF/50V	2.2 uF	6.8uH

## Tolerance Envelope Curve



### Requirement on output load

This module can operate efficiently and reliably if the minimum output load is **not less than 10%** of the full load. If the actual output power is very small, please connect a resistor with proper resistance at the output end in parallel to increase the load.

**It is not recommended to increase the output power capability by connecting two or more converters in parallel. The product is not hot-swappable.**

**No parallel connection or plug and play.**