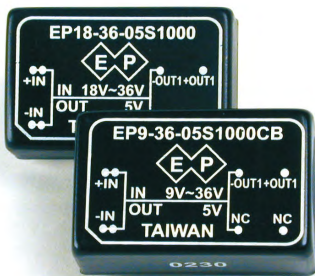


EP 3-6W Series- Wide Input Range DC-DC Converter

Features

3W TO 6W DIL & SMD PACKAGE
 4.5-9V,9-18V,18-36V,36-72V,9-36V,18-72V WIDE INPUT RANGE
 100% BURN IN
 HIGH EFFICIENCY
 UL94V-0 PACKAGE MATERIAL
 CUSTOM SOLUTIONS AVAILABLE
 RoHS COMPLIANT



Specification

Output Specification

Voltage Setpoint Accuracy

Single/Dual		+/-2% max.
Dual Separate	Out1	+/-2% max.
	Out2	+/-5% max.
Triple	Out1	+/-2% max.
	Out2/Out3	+/-5% max.
Temperature Coefficient		+/-0.05%/°C
Ripple & Noise(20MHz BW) ¹		100mVp-p max.
Line Regulation ²		
Single/Dual		+/-1% max.
Dual Separate	Out1	+/-1% max.
	Out2	+/-3% max.
Triple	Out1	+/-1% max.
	Out2/Out3	+/-3% max.

Load Regulation³

Single/Dual		+/-0.5% max.
Dual Separate	Output : 3.3V	+/-1% max.
	Out1	+/-1% max.
	Out2	+/-5% max.
Triple	Out1	+/-1% max.
	Out2/Out3	+/-5% max.

Minimum Load

20% of Full Load

Short Circuit Protection

Continuous

Short Circuit Restart

Automatic

Over Load Protection

3W~6W 110%~180%

Transient Response⁴

200uS max.

Capacitive Load

5V:1000uF max.

12V:470uF max.

15V: 330uF max.

Other Output: ±220uF max.

Input Specification

Input Voltage Range

2:1 or 4:1 Input Range

Pi Network

Fuse Recommended

Table 1

50mS max.

Operating Temperature

-40°C to +71°C

Storage Temperature

-55°C to +125°C

Case Temperature

+95°C max.

Humidity

95% max.

Cooling

Free-Air Convection

Environmental Specifications

¹ Measured with 1uF ceramic capacitor connect to the output pins.

² High Line to Low Line.

³ Load Regulation is for output load current change from 20% to 100%.

⁴ 25% Step Load Change

General Specifications

Efficiency	70% min.
Isolation Voltage ⁵	
Single/Dual/Triple	1500VDC or 3000VDC min.
Dual Separate	In to Out 1500VDC min. Out1 to Out2 500VDC min.
Isolation Resistance	10 ohms min.
Isolation Capacitance	40pF max.
Switching Frequency	50KHz min.
MTBF ⁶	>900,000 Hours
Weight	17.5g Typ.
Case Material	Five-Side Shielded Case
Case Size(DIL)	31.8mm*20.3mm*12.2mm
Case Size(SMD)	31.8mm*20.3mm*11.4mm
Potting Material(DIL)	Epoxy(UL94-V0)
Potting Material(SMD)	Non potting
Conducted Emissions	EN55022 Class A
Radiated Emissions	EN55022 Class B

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD , AND 25 °C UNLESS OTHERWISE NOTED.



⁵ 1500VDC for 10 seconds,2000VDC~3000VDC for 3 seconds

⁶ MIL-HDBK-217F @25 °C , Ground Benign

Selection Guide (1) 2:1 3W Output 1500VDC Isolation

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁷ CURRENT(mA)		EFF (%) ⁸	Isolation (VDC)
				FULL LOAD	NO LOAD		
EP4-09-3.3S755(ABC)	4.5-9	3.3	755	683	40	73	1500
EP4-09-05S500(ABCD)	4.5-9	5	500	685	40	73	1500
EP4-09-12S250(ABCD)	4.5-9	12	250	789	40	76	1500
EP4-09-15S200(ABCD)	4.5-9	15	200	789	40	76	1500
EP4-09-05D300(A)	4.5-9	+/-5	+/-300	855	40	70	1500
EP4-09-12D125(ABC)	4.5-9	+/-12	+/-125	810	40	74	1500
EP4-09-15D100(ABC)	4.5-9	+/-15	+/-100	800	60	75	1500
EP9-18-3.3S700(ABCD)	9-18	3.3	700	267	18	72	1500
EP9-18-05S600(ABCD)	9-18	5	600	338	18	74	1500
EP9-18-09S330(ABCD)	9-18	9	330	313	18	79	1500
EP9-18-12S250(ABCD)	9-18	12	250	313	18	80	1500
EP9-18-15S200(ABCD)	9-18	15	200	313	18	80	1500
EP9-18-24S125(ABCD)	9-18	24	125	313	18	80	1500
EP9-18-05D300(ABC)	9-18	+/-5	+/-300	338	18	74	1500
EP9-18-12D125(ABC)	9-18	+/-12	+/-125	316	30	79	1500
EP9-18-15D100(ABC)	9-18	+/-15	+/-100	316	32	79	1500
EP18-36-3.3S910(ABCD)	18-36	3.3	910	163	10	76	1500
EP18-36-05S600(ABCD)	18-36	5	600	167	10	75	1500
EP18-36-09S330(ABCD)	18-36	9	330	158	10	79	1500
EP18-36-12S250(ABCD)	18-36	12	250	156	10	80	1500
EP18-36-15S200(ABCD)	18-36	15	200	156	10	80	1500
EP18-36-24S125(ABCD)	18-36	24	125	156	10	80	1500
EP18-36-05D300(ABC)	18-36	+/-5	+/-300	167	10	75	1500
EP18-36-12D125(ABC)	18-36	+/-12	+/-125	156	15	80	1500
EP18-36-15D100(ABC)	18-36	+/-15	+/-100	156	25	80	1500
EP36-72-3.3S700(ABCD)	36-72	3.3	700	69	5	72	1500
EP36-72-05S600(ABCD)	36-72	5	600	82	5	76	1500
EP36-72-09S330(ABCD)	36-72	9	330	79	5	79	1500
EP36-72-12S250(ABCD)	36-72	12	250	78	5	80	1500
EP36-72-15S200(ABCD)	36-72	15	200	76	5	82	1500
EP36-72-24S125(ABCD)	36-72	24	125	76	5	82	1500
EP36-72-05D300(ABC)	36-72	+/-5	+/-300	82	5	76	1500
EP36-72-12D125(ABC)	36-72	+/-12	+/-125	80	5	78	1500
EP36-72-15D100(ABC)	36-72	+/-15	+/-100	79	5	79	1500

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION

FOR EXAMPLE:

EP9-18-05S600A (A PACKAGE 3W SINGLE OUTPUT)

EP9-18-05D300B (B PACKAGE 3W DUAL OUTPUT)

⁷ NOMINAL INPUT VOLTAGE.

⁸ NOMINAL INPUT VOLTAGE, FULL LOAD

Selection Guide (2) 4:1 3W Output 1500VDC Isolation

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁹ CURRENT(mA)		EFF (%) ¹⁰	ISOLATION (VDC)
				FULL LOAD	NO LOAD		
EP9-36-3.3S700(ABC)	9-36	3.3	700	260	20	74	1500
EP9-36-05S600(ABC)	9-36	5	600	338	18	74	1500
EP9-36-12S250(ABC)	9-36	12	250	321	18	78	1500
EP9-36-15S200(ABC)	9-36	15	200	321	18	78	1500
EP9-36-24S125(ABC)	9-36	24	125	321	20	78	1500
EP9-36-05D300(ABC)	9-36	+/-5	+/-300	333	18	75	1500
EP9-36-12D125(ABC)	9-36	+/-12	+/-125	320	18	78	1500
EP9-36-15D100(ABC)	9-36	+/-15	+/-100	320	18	78	1500
EP18-72-3.3S700(ABC)	18-72	3.3	700	136	10	71	1500
EP18-72-05S600(ABC)	18-72	5	600	169	10	74	1500
EP18-72-12S250(ABC)	18-72	12	250	160	10	78	1500
EP18-72-15S200(ABC)	18-72	15	200	156	10	80	1500
EP18-72-24S125(ABC)	18-72	24	125	160	10	78	1500
EP18-72-05D300(ABC)	18-72	+/-5	+/-300	169	10	74	1500
EP18-72-09D167(ABC)	18-72	+/-9	+/-167	158	10	79	1500
EP18-72-12D125(ABC)	18-72	+/-12	+/-125	160	10	78	1500
EP18-72-15D100(ABC)	18-72	+/-15	+/-100	160	15	78	1500

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-36-05S600A (A PACKAGE 3W SINGLE OUTPUT)

EP9-36-05D300B (B PACKAGE 3W DUAL OUTPUT)

⁹ NOMINAL INPUT VOLTAGE.

¹⁰ NOMINAL INPUT VOLTAGE, FULL LOAD.

Selection Guide(3) 2:1 3W Output 2000VDC Isolation

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ¹¹ CURRENT(mA)		EFF (%) ¹²	ISOLATION (VDC)
				FULL	NO		
				LOAD	LOAD		
EP4-09-05S500P2K	4.5-9	5	500	685	40	73	2000
EP4-09-12S250P2K	4.5-9	12	250	821	40	73	2000
EP4-09-15S200P2K	4.5-9	15	200	789	40	76	2000
EP9-18-3.3S910P2K	9-18	3.3	910	358	18	70	2000
EP9-18-05S600P2K	9-18	5	600	338	18	74	2000
EP9-18-09S330P2K	9-18	9	330	313	18	79	2000
EP9-18-12S250P2K	9-18	12	250	313	18	80	2000
EP9-18-15S200P2K	9-18	15	200	313	18	80	2000
EP18-36-3.3S910P2K	18-36	3.3	910	163	10	76	2000
EP18-36-05S500P2K	18-36	5	500	143	10	73	2000
EP18-36-05S600P2K	18-36	5	600	167	10	75	2000
EP18-36-09S330P2K	18-36	9	330	158	10	79	2000
EP18-36-12S250P2K	18-36	12	250	156	10	80	2000
EP18-36-15S200P2K	18-36	15	200	156	10	80	2000
EP36-72-3.3S910P2K	36-72	3.3	910	87	5	72	2000
EP36-72-05S600P2K	36-72	5	600	82	5	76	2000
EP36-72-09S330P2K	36-72	9	330	79	5	79	2000
EP36-72-12S250P2K	36-72	12	250	76	5	82	2000
EP36-72-15S200P2K	36-72	15	200	76	5	82	2000

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-18-15S600P2K (P PACKAGE 3W SINGLE OUTPUT 2000VDC)

¹¹ NOMINAL INPUT VOLTAGE.

¹² NOMINAL INPUT VOLTAGE, FULL LOAD.

Selection Guide(4) 2:1 4W-6W Output 1500VDC Isolation

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ¹³ CURRENT(mA)		EFF (%) ¹⁴	ISOLATION (VDC)
				FULL LOAD	NO LOAD		
EP4-09-05S800(AB)	4.5-9	5	800	1081	40	74	1500
EP4-09-12S333(AB)	4.5-9	12	333	1066	40	75	1500
EP4-09-15S267(AB)	4.5-9	15	267	1068	40	75	1500
EP4-09-05D400(AB)	4.5-9	+/-5	+/-400	1125	40	71	1500
EP4-09-12D167(AB)	4.5-9	+/-12	+/-167	1073	120	75	1500
EP4-09-15D133(AB)	4.5-9	+/-15	+/-133	1060	100	75	1500
EP9-18-3.3S1200(AB)	9-18	3.3	1200	438	40	75	1500
EP9-18-05S1000(AB)	9-18	5	1000	556	40	75	1500
EP9-18-09S556(AB)	9-18	9	556	520	40	80	1500
EP9-18-12S470(AB)	9-18	12	470	587	40	80	1500
EP9-18-15S400(AB)	9-18	15	400	617	41	81	1500
EP9-18-24S208(AB)	9-18	24	208	520	41	80	1500
EP9-18-05D500(AB)	9-18	+/-5	+/-500	556	40	75	1500
EP9-18-09D280(AB)	9-18	+/-9	+/-280	525	20	80	1500
EP9-18-12D230(AB)	9-18	+/-12	+/-230	585	40	79	1500
EP9-18-15D190(AB)	9-18	+/-15	+/-190	586	48	81	1500
EP18-36-3.3S1200(AB)	18-36	3.3	1200	217	20	76	1500
EP18-36-05S1000(AB)	18-36	5	1000	270	20	77	1500
EP18-36-09S556(AB)	18-36	9	556	257	20	81	1500
EP18-36-12S470(AB)	18-36	12	470	292	22	80	1500
EP18-36-15S400(AB)	18-36	15	400	301	21	83	1500
EP18-36-24S208(AB)	18-36	24	208	260	21	80	1500
EP18-36-05D500(AB)	18-36	+/-5	+/-500	270	20	77	1500
EP18-36-12D230(AB)	18-36	+/-12	+/-230	288	20	80	1500
EP18-36-15D190(AB)	18-36	+/-15	+/-190	286	21	83	1500
EP36-72-3.3S1200(AB)	36-72	3.3	1200	108	10	76	1500
EP36-72-05S1000(AB)	36-72	5	1000	135	10	77	1500
EP36-72-09S556(AB)	36-72	9	556	130	9	80	1500
EP36-72-12S470(AB)	36-72	12	470	145	9	81	1500
EP36-72-15S400(AB)	36-72	15	400	154	10	81	1500
EP36-72-24S208(AB)	36-72	24	208	130	10	80	1500
EP36-72-05D500(AB)	36-72	+/-5	+/-500	135	10	77	1500
EP36-72-12D230(AB)	36-72	+/-12	+/-230	144	12	80	1500
EP36-72-15D190(AB)	36-72	+/-15	+/-190	146	10	81	1500

Note: Other input to output voltages may be available. Please contact factory.

¹³ NOMINAL INPUT VOLTAGE.

¹⁴ NOMINAL INPUT VOLTAGE, FULL LOAD.

ORDERING INFORMATION:

FOR EXAMPLE: EP18-36-24S208A (A PACKAGE 5W SINGLE OUTPUT)
 EP18-36-05D500B (B PACKAGE 5W DUAL OUTPUT)

Selection Guide(5) 4:1 4W-5W Output 1500VDC Isolation

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ¹⁵ CURRENT(mA)		EFF (%) ¹⁶	ISOLATION (VDC)
				FULL LOAD	NO LOAD		
				EP9-36-03,3S1200A	9-36		
EP9-36-05S1000A	9-36	5	1000	548	40	76	1500
EP9-36-09S556A	9-36	9	556	542	40	77	1500
EP9-36-12S417A	9-36	12	417	542	20	77	1500
EP9-36-15S333A	9-36	15	333	534	20	78	1500
EP9-36-05D500A	9-36	+/-5	+/-500	563	40	74	1500
EP9-36-12D208A	9-36	+/-12	+/-208	533	40	78	1500
EP9-36-15D167A	9-36	+/-15	+/-167	535	40	78	1500
EP18-72-03,3S1200A	18-72	3.3	1200	229	20	72	1500
EP18-72-05S1000A	18-72	5	1000	271	20	77	1500
EP18-72-09S556A	18-72	9	556	264	20	79	1500
EP18-72-12S417A	18-72	12	417	264	20	79	1500
EP18-72-15S333A	18-72	15	333	260	20	80	1500
EP18-72-05D500A	18-72	+/-5	+/-500	280	20	74	1500
EP18-72-12D208A	18-72	+/-12	+/-208	270	10	77	1500
EP18-72-15D167A	18-72	+/-15	+/-167	260	10	80	1500

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-36-05S1000A (A PACKAGE 5W SINGLE OUTPUT)
 EP9-36-05D500A (A PACKAGE 5W DUAL OUTPUT)

¹⁵ NOMINAL INPUT VOLTAGE.

¹⁶ NOMINAL INPUT VOLTAGE, FULL LOAD.

Selection Guide (6) 2:1 or 4:1 3W~5W Dual Separate Output

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ¹⁷		EFF (%) ¹⁸	ISOLATION (VDC)
				CURRENT(mA)			
				FULL LOAD	NO LOAD		
EP9-36-05SS300E	9-36	V1:5V V2:5V	V1:300 V2:300	348	40	72	1500
EP9-36-05SS450E	9-36	V1:5V V2:5V	V1:450 V2:450	520	40	72	1500
EP9-18-15SS100E	9-18	V1:15V V2:15V	V1:100 V2:100	348	40	72	1500
EP9-36-15SS150E	9-36	V1:15V V2:15V	V1:150 V2:150	510	40	74	1500
EP9-36-24SS95E	9-36	V1:24V V2:24V	V1:95 V2:95	510	40	74	1500
EP18-36-12SS188E	18-36	V1:12V V2:12V	V1:188 V2:188	241	25	78	1500
EP18-36-15SS100E	18-36	V1:15V V2:15V	V1:100 V2:100	169	16	74	1500
EP18-72-05SS300E	18-72	V1:5V V2:5V	V1:300 V2:300	169	15	74	1500
EP36-72-12SS125E	36-72	V1:12V V2:12V	V1:125 V2:125	83	10	75	1500

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-18-15SS100E (E PACKAGE 3W DUAL OUTPUT)
 EP36-72-12SS125E (E PACKAGE 5W DUAL OUTPUT)

¹⁷ NOMINAL INPUT VOLTAGE.

¹⁸ NOMINAL INPUT VOLTAGE, FULL LOAD.

Selection Guide (7) 2:1 or 4:1 3 W Dual Separate Output

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ¹⁹ CURRENT(mA)		EFF (%) ²⁰	ISOLATION (VDC)
				FULL LOAD	NO LOAD		
EP9-18-15SS100F	9-18	V1:15V V2:15V	V1:100 V2:100	315	33	79	1500
EP9-36-05SS300F	9-36	V1:5V V2:5V	V1:300 V2:300	338	35	74	1500
EP9-36-12SS125F	9-36	V1:12V V2:12V	V1:125 V2:125	331	33	76	1500
EP9-36-15SS100F	9-36	V1:15V V2:15V	V1:100 V2:100	320	20	78	1500
EP9-36-24SS63F	9-36	V1:24V V2:24V	V1:63 V2:63	318	20	79	1500
EP18-72-05SS300F	18-72	V1:5V V2:5V	V1:300 V2:300	169	15	74	1500
EP18-36-12SS125F	18-36	V1:12V V2:12V	V1:125 V2:125	156	15	80	1500
EP18-72-12SS125F	18-72	V1:12V V2:12V	V1:125 V2:125	156	15	80	1500
EP18-72-15SS100F	18-72	V1:15V V2:15V	V1:100 V2:100	156	15	80	1500
EP18-72-24SS63F	18-72	V1:24V V2:24V	V1:63 V2:63	152	15	82	1500

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP18-72-24SS63F (F PACKAGE 3W DUAL OUTPUT)

¹⁹ NOMINAL INPUT VOLTAGE.

²⁰ NOMINAL INPUT VOLTAGE, FULL LOAD.

Selection Guide (8) 2:1 4W Triple Output

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)			OUTPUT CURRENT (mA)			INPUT ²¹ CURRENT (mA)		EFF (%) ²²	ISOLATION (VDC)
		OUT1	OUT2	OUT3	OUT1	OUT2	OUT3	FULL LOAD	NO LOAD		
EP4,5-9-05S12DT	4.5-9	+5	+12V	-12V	300	100	100	1085	20	74	1500
EP4,5-9-05S15DT	4.5-9	+5	+15	-15	300	80	80	1280	20	70	1500
EP9-18-05S12DT	9-18	+5	+12V	-12V	300	100	100	406	20	80	1500
EP9-18-05S15DT	9-18	+5	+15	-15	300	80	80	417	20	78	1500
EP18-36-05S12DT	18-36	+5	+12V	-12V	300	100	100	200	20	81	1500
EP18-36-05S15DT	18-36	+5	+15	-15	300	80	80	225	20	74	1500
EP36-72-05S12DT	36-72	+5	+12V	-12V	300	100	100	114	20	73	1500
EP36-72-05S15DT	36-72	+5	+15	-15	300	80	80	113	20	74	1500

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-18-05S15DT (T PACKAGE 4W TRIPLE OUTPUT)

²¹ NOMINAL INPUT VOLTAGE.

²² NOMINAL INPUT VOLTAGE, FULL LOAD.

Selection Guide (9) 2:1 3W Output 3000 VDC Isolation

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ²³ CURRENT(mA)		EFF (%) ²⁴	ISOLATION (VDC) ²⁵
				FULL LOAD	NO LOAD		
				EP4-09-3.3S755A3K	4.5-9		
EP4-09-05S500A3K	4.5-9	5	500	684	40	73	3000
EP4-09-12S250A3K	4.5-9	12	250	789	40	76	3000
EP4-09-15S200A3K	4.5-9	15	200	789	40	76	3000
EP9-18-3.3S700A3K	9-18	3.3	700	267	18	72	3000
EP9-18-05S600A3K	9-18	5	600	338	18	74	3000
EP9-18-09S300A3K	9-18	9	330	316	18	79	3000
EP9-18-12S250A3K	9-18	12	250	313	18	80	3000
EP9-18-15S200A3K	9-18	15	200	313	18	80	3000
EP9-18-05D300A3K	9-18	+/-5	+/-300	338	18	74	3000
EP9-18-12D125A3K	9-18	+/-12	+/-125	316	18	79	3000
EP9-18-15D100A3K	9-18	+/-15	+/-100	316	18	79	3000
EP18-36-3.3S910A3K	18-36	3.3	910	163	10	77	3000
EP18-36-05S600A3K	18-36	5	600	167	10	75	3000
EP18-36-09S330A3K	18-36	9	330	158	10	79	3000
EP18-36-12S250A3K	18-36	12	250	156	10	80	3000
EP18-36-15S200A3K	18-36	15	200	156	10	80	3000
EP18-36-24S125A3K	18-36	24	125	154	10	81	3000
EP18-36-05D300A3K	18-36	+/-5	+/-300	167	10	75	3000
EP18-36-12D125A3K	18-36	+/-12	+/-125	156	10	80	3000
EP18-36-15D100A3K	18-36	+/-15	+/-100	156	25	80	3000
EP36-72-3.3S700A3K	36-72	3.3	700	69	5	72	3000
EP36-72-05S600A3K	36-72	5	600	82	5	76	3000
EP36-72-09S330A3K	36-72	9	330	79	5	79	3000
EP36-72-12S250A3K	36-72	12	250	78	5	80	3000
EP36-72-15S200A3K	36-72	15	200	76	5	82	3000
EP36-72-05D300A3K	36-72	+/-5	+/-300	82	5	76	3000
EP36-72-12D125A3K	36-72	+/-12	+/-125	80	5	78	3000
EP36-72-15D100A3K	36-72	+/-15	+/-100	79	5	79	3000

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-18-05S600A3K (A PACKAGE 3W SINGLE OUTPUT 3000VDC)
EP18-36-05D600A3K (A PACKAGE 3W DUAL OUTPUT 3000VDC)

²³ NOMINAL INPUT VOLTAGE.

²⁴ NOMINAL INPUT VOLTAGE, FULL LOAD.

²⁵ FOR 3 SECONDS.

Selection Guide (10) 4:1 3 W Output 3000VDC Isolation

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ²⁶ CURRENT(mA)		EFF (%) ²⁷	ISOLATION (VDC) ²⁸
				FULL LOAD	NO LOAD		
EP9-36-3,3S700A3K	9-36	3.3	700	260	20	74	3000
EP9-36-05S600A3K	9-36	5	600	338	18	74	3000
EP9-36-09S330A3K	9-36	9	330	320	18	77	3000
EP9-36-12S250A3K	9-36	12	250	320	18	78	3000
EP9-36-15S200A3K	9-36	15	200	320	18	78	3000
EP9-36-05D300A3K	9-36	+/-5	+/-300	333	18	75	3000
EP9-36-12D125A3K	9-36	+/-12	+/-125	320	18	78	3000
EP9-36-15D100A3K	9-36	+/-15	+/-100	320	18	78	3000
EP18-72-3,3S700A3K	18-72	3.3	700	136	10	71	3000
EP18-72-05S600A3K	18-72	5	600	169	10	74	3000
EP18-72-09S330A3K	18-72	9	330	158	10	79	3000
EP18-72-12S250A3K	18-72	12	250	156	10	80	3000
EP18-72-15S200A3K	18-72	15	200	156	10	80	3000
EP18-72-05D300A3K	18-72	+/-5	+/-300	169	10	74	3000
EP18-72-12D125A3K	18-72	+/-12	+/-125	160	10	78	3000
EP18-72-15D100A3K	18-72	+/-15	+/-100	160	10	78	3000

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-36-09S330A3K (A PACKAGE 3W SINGLE OUTPUT 3000VDC)
 EP18-72-05D600A3K (A PACKAGE 3W DUAL OUTPUT 3000VDC)

²⁶ NOMINAL INPUT VOLTAGE.

²⁷ NOMINAL INPUT VOLTAGE, FULL LOAD.

²⁸ FOR 3 SECONDS.

Selection Guide(11) 2:1 4W-6W Output 3000VDC Isolation

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ²⁹ CURRENT(mA)		EFF (%) ³⁰	ISOLATION (VDC) ³¹
				FULL LOAD	NO LOAD		
EP4-09-05S800A3K	4.5-9	5	800	1081	40	74	3000
EP9-18-3,3S1200A3K	9-18	3.3	1200	438	40	75	3000
EP9-18-05S1000A3K	9-18	5	1000	556	40	75	3000
EP9-18-09S556A3K	9-18	9	556	520	40	80	3000
EP9-18-12S470A3K	9-18	12	470	587	40	80	3000
EP9-18-15S400A3K	9-18	15	400	617	30	81	3000
EP9-18-05D500A3K	9-18	+/-5	+/-500	556	40	75	3000
EP9-18-12D230A3K	9-18	+/-12	+/-230	585	40	79	3000
EP9-18-15D190A3K	9-18	+/-15	+/-190	586	41	81	3000
EP18-36-3,3S1200A3K	18-36	3.3	1200	217	20	76	3000
EP18-36-05S1000A3K	18-36	5	1000	270	20	77	3000
EP18-36-09S556A3K	18-36	9	556	257	20	81	3000
EP18-36-12S470A3K	18-36	12	470	287	22	82	3000
EP18-36-15S400A3K	18-36	15	400	301	21	83	3000
EP18-36-05D500A3K	18-36	+/-5	+/-500	270	20	77	3000
EP18-36-12D230A3K	18-36	+/-12	+/-230	279	20	82	3000
EP18-36-15D190A3K	18-36	+/-15	+/-190	286	21	83	3000
EP36-72-3,3S1200A3K	36-72	3.3	1200	112	10	74	3000
EP36-72-05S1000A3K	36-72	5	1000	135	10	77	3000
EP36-72-09S556A3K	36-72	9	556	126	9	83	3000
EP36-72-12S470A3K	36-72	12	470	146	9	80	3000
EP36-72-15S400A3K	36-72	15	400	147	10	85	3000
EP36-72-05D500A3K	36-72	+/-5	+/-500	135	10	77	3000
EP36-72-12D230A3K	36-72	+/-12	+/-230	138	12	83	3000
EP36-72-15D190A3K	36-72	+/-15	+/-190	146	10	81	3000

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-18-05S1000A3K (A PACKAGE 5W SINGLE OUTPUT 3000VDC)

EP18-36-05D500A3K (A PACKAGE 5W DUAL OUTPUT)

²⁹ NOMINAL INPUT VOLTAGE.

³⁰ NOMINAL INPUT VOLTAGE, FULL LOAD.

³¹ FOR 3 SECONDS.

Selection Guide (12) 4:1 5W Output 3000VDC Isolation

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ³² CURRENT(mA)		EFF (%) ³³	ISOLATION (VDC) ³⁴
				FULL LOAD	NO LOAD		
				EP9-36-3.3S1200A3K	9-36		
EP9-36-05S1000A3K	9-36	5	1000	550	40	76	3000
EP9-36-09S556A3K	9-36	9	556	540	40	77	3000
EP9-36-12D417A3K	9-36	12	417	540	20	77	3000
EP9-36-15D333A3K	9-36	15	333	535	20	78	3000
EP9-36-05D500A3K	9-36	+/-5	+/-500	560	40	74	3000
EP9-36-12D208A3K	9-36	+/-12	+/-208	535	40	78	3000
EP9-36-15D167A3K	9-36	+/-15	+/-167	536	40	78	3000
EP18-72-3.3S1200A3K	18-72	3.3	1200	230	20	72	3000
EP18-72-05S1000A3K	18-72	5	1000	270	20	77	3000
EP18-72-09S556A3K	18-72	9	556	260	20	80	3000
EP18-72-12S417A3K	18-72	12	417	265	20	79	3000
EP18-72-15S333A3K	18-72	15	333	260	20	80	3000
EP18-72-05D500A3K	18-72	+/-5	+/-500	280	20	74	3000
EP18-72-12D208A3K	18-72	+/-12	+/-208	270	10	77	3000
EP18-72-15D167A3K	18-72	+/-15	+/-167	260	10	80	3000

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-36-05S1000A3K (A Package 5W SINGLE OUTPUT 3000VDC)
EP18-72-05D500A3K (A Package 5W DUAL OUTPUT 3000VDC)

³² NOMINAL INPUT VOLTAGE.

³³ NOMINAL INPUT VOLTAGE, FULL LOAD.

³⁴ FOR 3 SECONDS.

Selection Guide (13) 2:1 3W Output (SMD Package)

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ³⁵ CURRENT(mA)		EFF (%) ³⁶	ISOLATION (VDC)
				FULL LOAD	NO LOAD		
EP9-18-05S600(ABC)S	9-18	5	600	313	18	80	1500
EP9-18-12S250(ABC)S	9-18	12	250	301	35	83	1500
EP9-18-15S200(ABC)S	9-18	15	200	298	18	84	1500
EP9-18-05D300(ABC)S	9-18	+/-5	+/-300	313	18	80	1500
EP9-18-12D125(ABC)S	9-18	+/-12	+/-125	301	30	83	1500
EP9-18-15D100(ABC)S	9-18	+/-15	+/-100	298	32	84	1500
EP18-36-05S600(ABC)S	18-36	5	600	154	10	81	1500
EP18-36-12S250(ABC)S	18-36	12	250	149	10	84	1500
EP18-36-15S200(ABC)S	18-36	15	200	147	10	85	1500
EP18-36-05D300(ABC)S	18-36	+/-5	+/-300	154	10	81	1500
EP18-36-12D125(ABC)S	18-36	+/-12	+/-125	149	15	84	1500
EP18-36-15D100(ABC)S	18-36	+/-15	+/-100	149	15	84	1500
EP36-72-05S600(ABC)S	36-72	5	600	75	5	83	1500
EP36-72-12S250(ABC)S	36-72	12	250	74	5	85	1500
EP36-72-15S200(ABC)S	36-72	15	200	74	5	85	1500
EP36-72-05D300(ABC)S	36-72	+/-5	+/-300	75	5	83	1500
EP36-72-12D125(ABC)S	36-72	+/-12	+/-125	74	5	85	1500
EP36-72-15D100(ABC)S	36-72	+/-15	+/-100	74	5	85	1500

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-18-15S200AS (A PACKAGE SMD 3W SINGLE OUTPUT)

EP18-36-05D300BS (B PACKAGE SMD 3W DUAL OUTPUT)

³⁵ NOMINAL INPUT VOLTAGE.

³⁶ NOMINAL INPUT VOLTAGE, FULL LOAD.

Selection Guide(14) 2:1 4W-6W Output (SMD Package)

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ³⁷ CURRENT(mA)		EFF (%) ³⁸	ISOLATION (VDC)
				FULL LOAD	NO LOAD		
EP9-18-3.3S1200(ABC)S	9-18	3.3	1200	423	18	78	1500
EP9-18-05S1000(ABC)S	9-18	5	1000	521	18	80	1500
EP9-18-12S470(ABC)S	9-18	12	470	566	18	83	1500
EP9-18-15S400(ABC)S	9-18	15	400	595	18	84	1500
EP9-18-05D500(ABC)S	9-18	+/-5	+/-500	521	18	80	1500
EP9-18-12D230(ABC)S	9-18	+/-12	+/-230	554	30	83	1500
EP9-18-15D190(ABC)S	9-18	+/-15	+/-190	579	32	82	1500
EP18-36-05S1000(ABC)S	18-36	5	1000	257	10	81	1500
EP18-36-12S470(ABC)S	18-36	12	470	283	10	83	1500
EP18-36-15S400(ABC)S	18-36	15	400	294	10	85	1500
EP18-36-05D500(ABC)S	18-36	+/-5	+/-500	257	10	81	1500
EP18-36-12D230(ABC)S	18-36	+/-12	+/-230	274	15	84	1500
EP18-36-15D190(ABC)S	18-36	+/-15	+/-190	283	15	84	1500
EP36-72-05S1000(ABC)S	36-72	5	1000	127	5	82	1500
EP36-72-12S470(ABC)S	36-72	12	470	138	5	85	1500
EP36-72-15S400(ABC)S	36-72	15	400	147	5	85	1500
EP36-72-05D500(ABC)S	36-72	+/-5	+/-500	127	5	82	1500
EP36-72-12D230(ABC)S	36-72	+/-12	+/-230	135	5	85	1500
EP36-72-15D190(ABC)S	36-72	+/-15	+/-190	140	5	85	1500

Note: Other input to output voltages may be available. Please contact factory.

ORDERING INFORMATION:

FOR EXAMPLE: EP9-18-05S1000AS (A PACKAGE SMD 5W SINGLE OUTPUT)

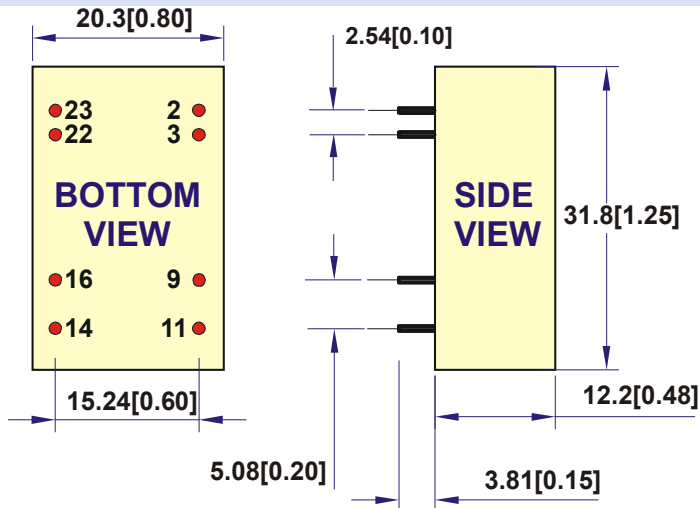
EP18-36-05D500BS (B PACKAGE SMD 5W DUAL OUTPUT)

³⁷ NOMINAL INPUT VOLTAGE.

³⁸ NOMINAL INPUT VOLTAGE, FULL LOAD.

Mechanical Dimensions

PACKAGE "A"

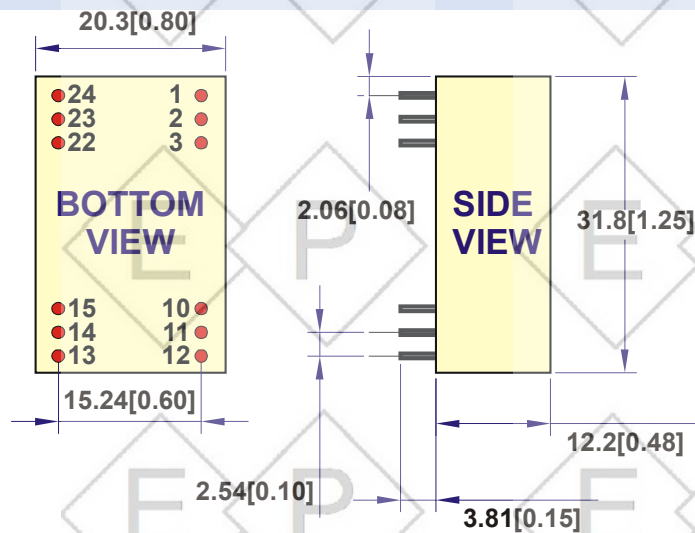


PIN	SINGLE	DUAL
2 & 3	-Vin	-Vin
9	NC	Common
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	Common
22 & 23	+Vin	+Vin

NOTE: Pin Size is Tolerance $0.6\Phi \pm 0.05\text{mm}$
 All dimensions are in mm(Inches)
 Tolerance .X or .XX= $\pm 0.5\text{mm}$

All dimensions are in mm[inches]

PACKAGE "B"

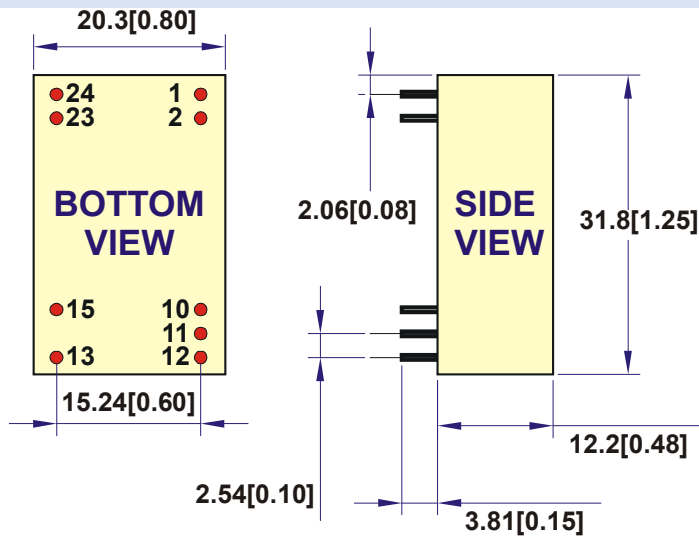


PIN	SINGLE	DUAL
1 & 24	+Vin	+Vin
2 & 23	NP	-Vout
3 & 22	NP	Common
10 & 15	-Vout	Common
11 & 14	+Vout	+Vout
12 & 13	-Vin	-Vin

NOTE: Pin Size is Tolerance $0.6\Phi \pm 0.05\text{mm}$
 All dimensions are in mm(Inches)
 Tolerance .X or .XX= $\pm 0.5\text{mm}$

All dimensions are in mm[inches]

PACKAGE "C"

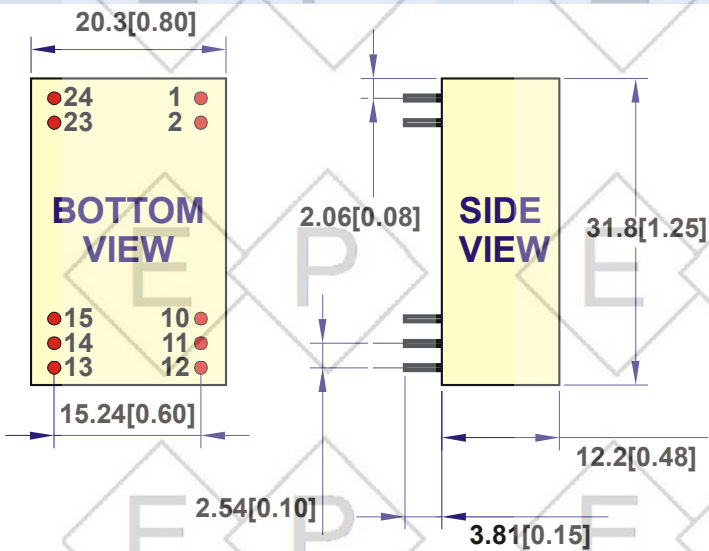


PIN	SINGLE	DUAL
1 & 2	+Vin	+Vin
10 & 11	NC	Common
12	-Vout	NC
13	+Vout	-Vout
15	NC	+Vout
23 & 24	-Vin	-Vin

NOTE: Pin Size is Tolerance 0.6Φ ±0.05mm
 All dimensions are in mm(inches)
 Tolerance .X or .XX= ±0.5mm

All dimensions are in mm[inches]

PACKAGE "D"

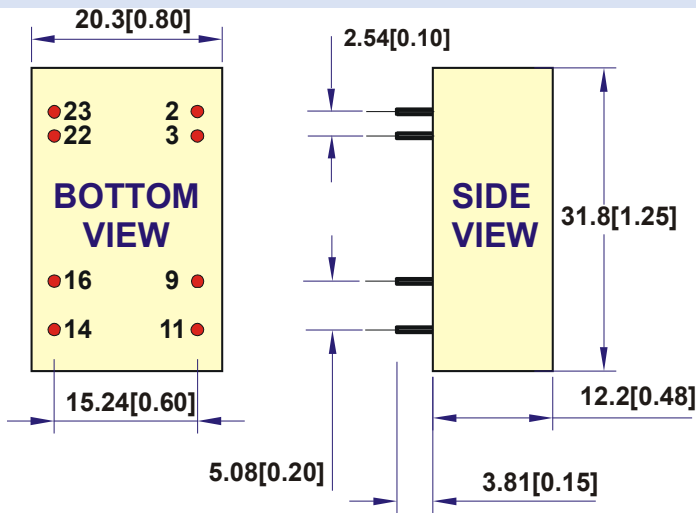


PIN	SINGLE
1 & 24	+ Vin
2 & 23	-Vin
10 & 15	-Vout
11 & 14	NC
12 & 13	+Vout

NOTE: Pin Size is Tolerance 0.6Φ ±0.05mm
 All dimensions are in mm(inches)
 Tolerance .X or .XX= ±0.5mm

All dimensions are in mm[inches]

PACKAGE "E"

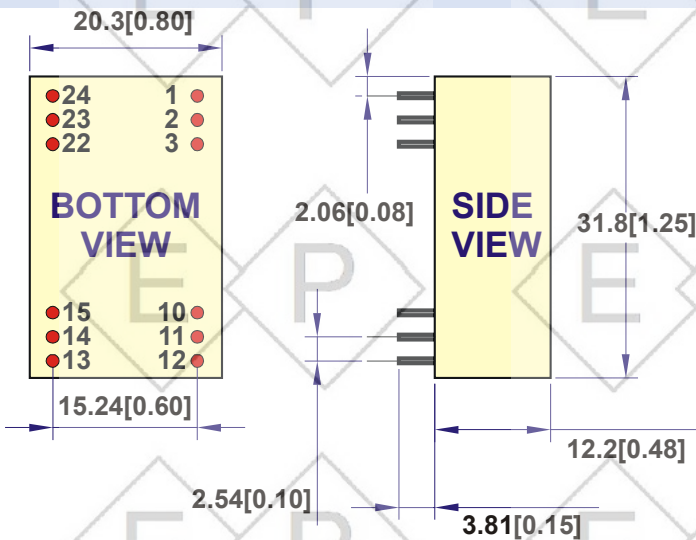


PIN	SEPARATE
2 & 3	- Vin
9	-Vout2
11	+Vout2
14	+Vout1
16	-Vout1
22 & 23	+Vin

NOTE: Pin Size is Tolerance 0.6Φ ±0.05mm
 All dimensions are in mm(inches)
 Tolerance .X or .XX= ±0.5mm

All dimensions are in mm[inches]

PACKAGE "F"

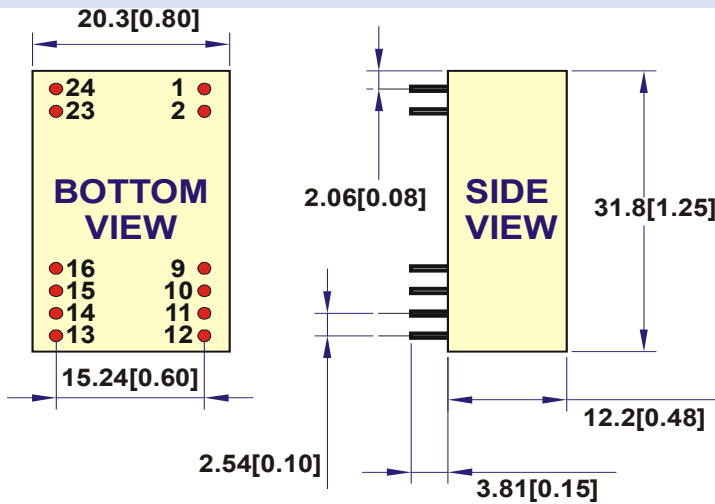


PIN	SEPARATE
1 & 24	+ Vin
2 & 23	-Vout2
3 & 22	+Vout2
10 & 15	-Vout1
11 & 14	+Vout1
12 & 13	-Vin

NOTE: Pin Size is Tolerance 0.6Φ ±0.05mm
 All dimensions are in mm(inches)
 Tolerance .X or .XX= ±0.5mm

All dimensions are in mm[inches]

PACKAGE "P"

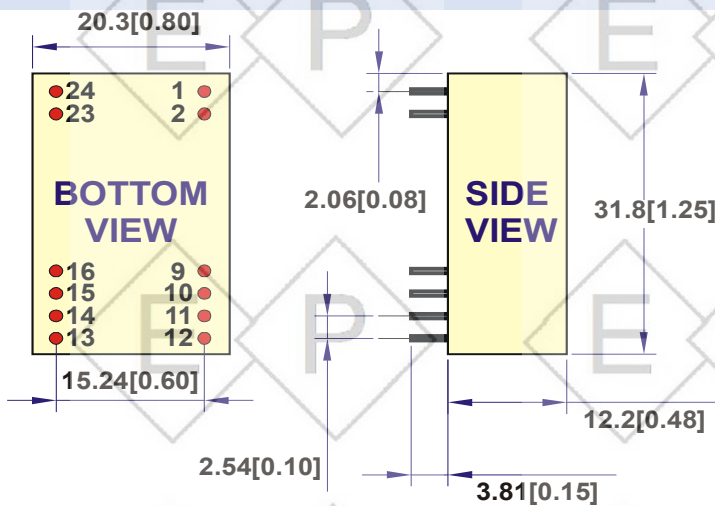


PIN	SINGLE
1 & 2	+Vin
23 & 24	-Vin
9 & 10	-Vout
11 & 12	+Vout
13 & 14	NC
15 & 16	NC

NOTE: Pin Size is Tolerance 0.6Φ ±0.05mm
 All dimensions are in mm(inches)
 Tolerance .X or .XX= ±0.5mm

All dimensions are in mm[inches]

PACKAGE "T"



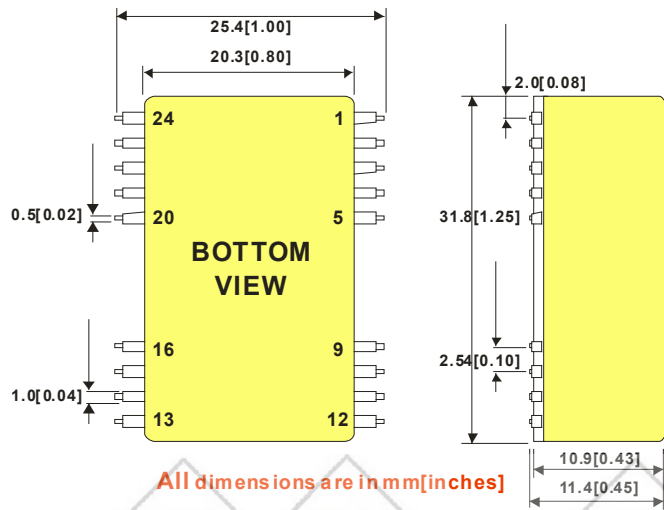
PIN	TRIPLE
1 & 2	-Vin
23 & 24	+Vin
9 & 16	-Vout(Out3)
10 & 15	Common
11 & 14	+5V/300mA(Out1)
12 & 13	+Vout(Out2)

NOTE: Pin Size is Tolerance 0.6Φ ±0.05mm
 All dimensions are in mm(inches)
 Tolerance .X or .XX= ±0.5mm

All dimensions are in mm[inches]

SMD PACKAGE

SMD PACKAGE "A"



PIN	SINGLE	DUAL
1	ON/OFF	ON/OFF
2 & 3	-Vin	-Vin
4 & 5	NC	NC
9	NC	COM
10 & 12	NC	NC
11	NC	-VOUT
13 & 15	NC	NC
14	+VOUT	+VOUT
16	-VOUT	COM
20 & 21	NC	NC
22 & 23	+VIN	+VIN
24	NC	NC

SMD PACKAGE "B"

SMD PACKAGE "C"

PIN	SINGLE	DUAL
1 & 24	+Vin	+Vin
2 & 23	NC	-Vout
3 & 22	NC	Common
4 & 21	NC	NC
5 & 20	NC	NC
9 & 16	NC	NC
10 & 15	-Vout	Common
11 & 14	+Vout	+Vout
12 & 13	-Vin	-Vin

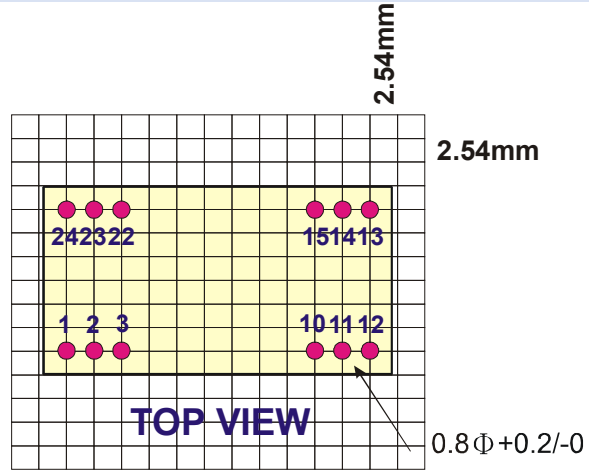
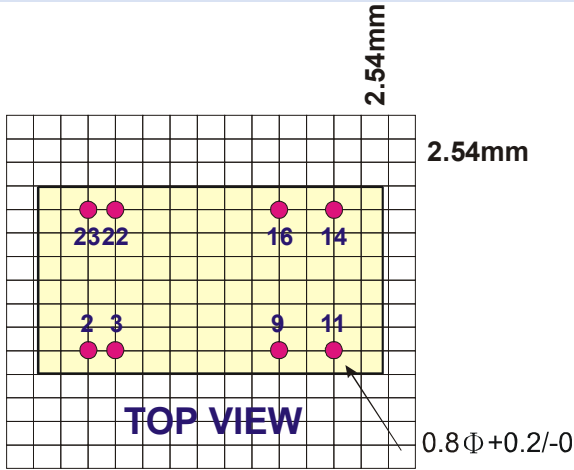
PIN	SINGLE	DUAL
1 & 2	+Vin	+Vin
3 & 4	NC	NC
5 & 9	NC	NC
10 & 11	NC	Common
12	-Vout	NC
13	+Vout	-Vout
14 & 16	NC	NC
15	NC	+Vout
20 & 21	NC	NC
22	NC	NC
23 & 24	-Vin	-Vin

NOTE: All Dimensions Are In mm(Inches)
Pin Size is Tolerance 0.5 ±0.05mm
Tolerance .X or .XX= ±0.5mm

Recommended Footprint Details

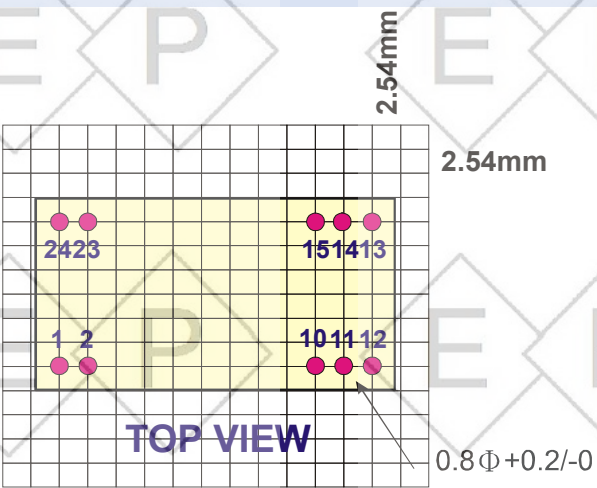
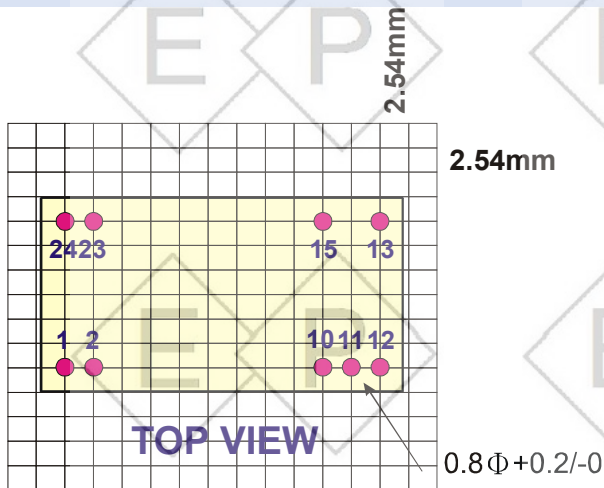
PACKAGE "A"

PACKAGE "B"



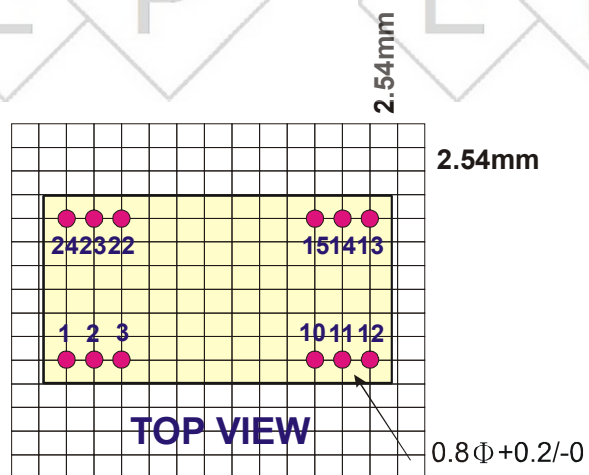
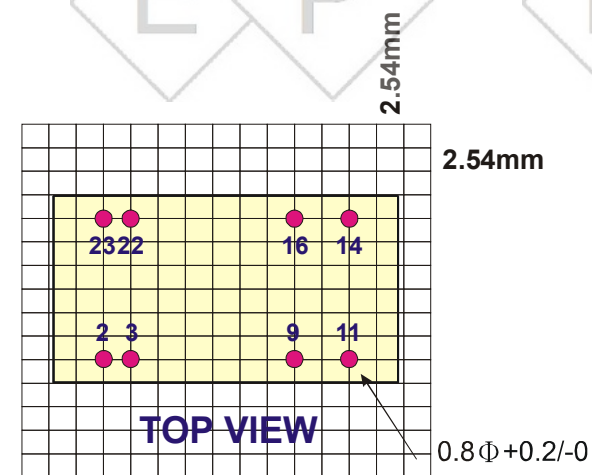
PACKAGE "C"

PACKAGE "D"



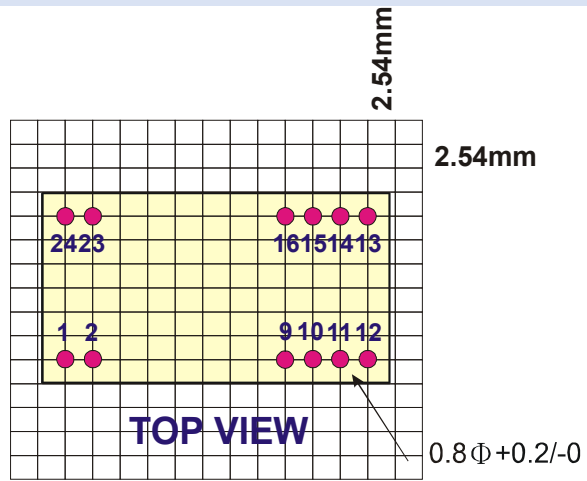
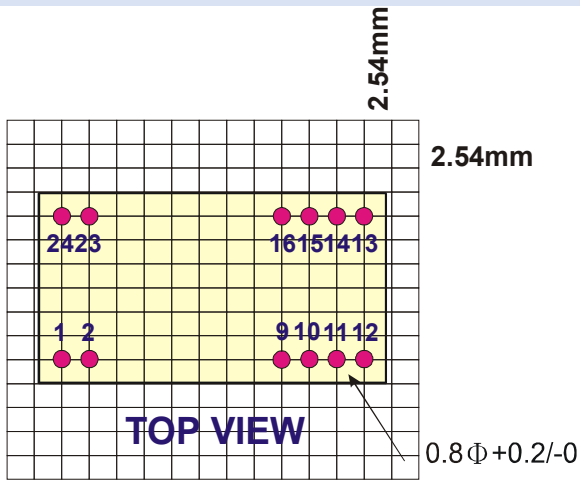
PACKAGE "E"

PACKAGE "F"

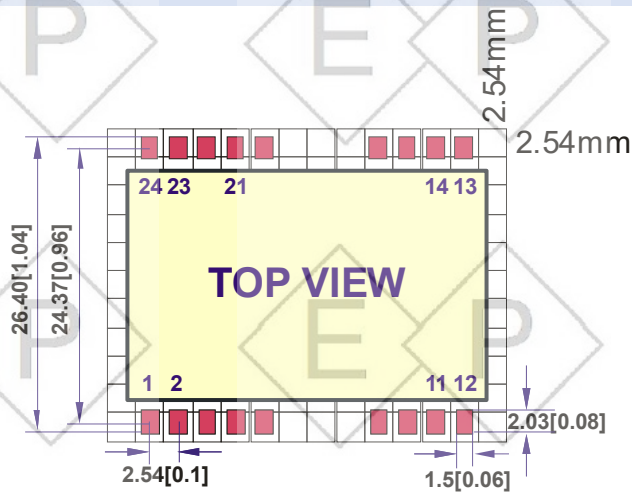


PACKAGE "P"

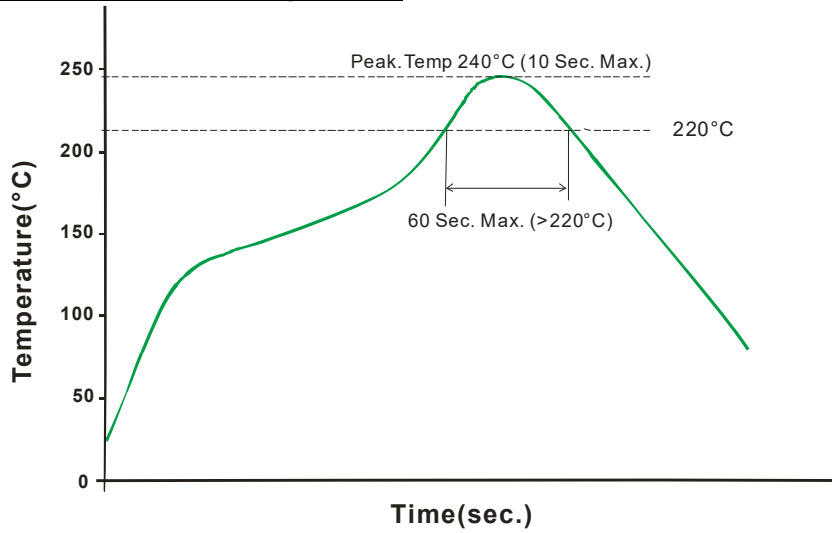
PACKAGE "T"



PACKAGE "S" [SMD]

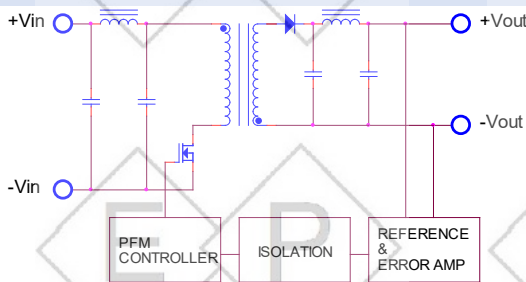


Recommended Reflow Soldering Profile

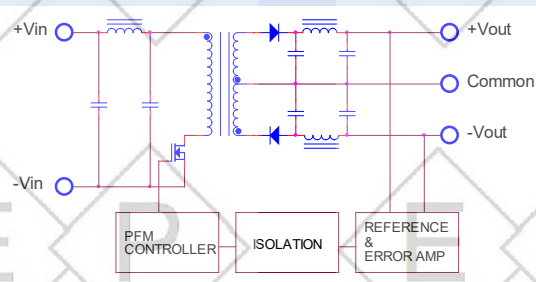


Simplified Schematic

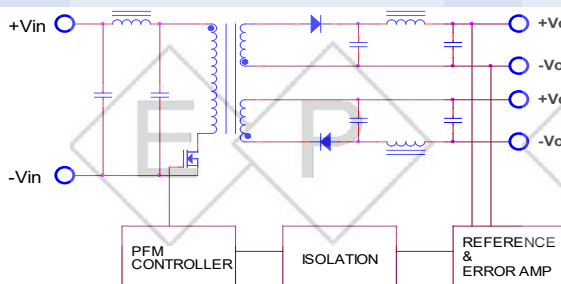
SINGLE OUTPUT



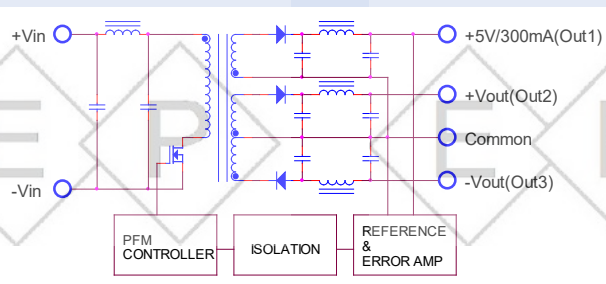
DUAL OUTPUT



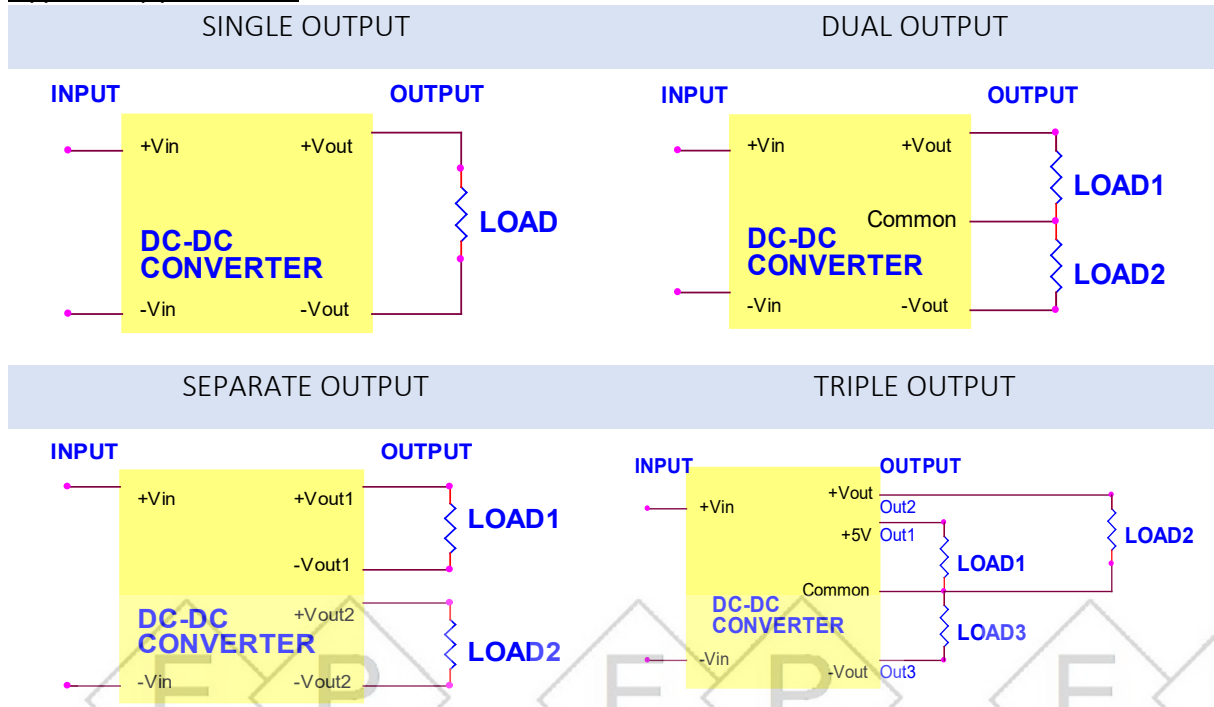
SEPARATE OUTPUT



TRIPLE OUTPUT



Typical Applications



Typical Performance Curves

Specifications typical at $T_a=25^\circ\text{C}$, nominal input voltage, rated output current unless otherwise specified.

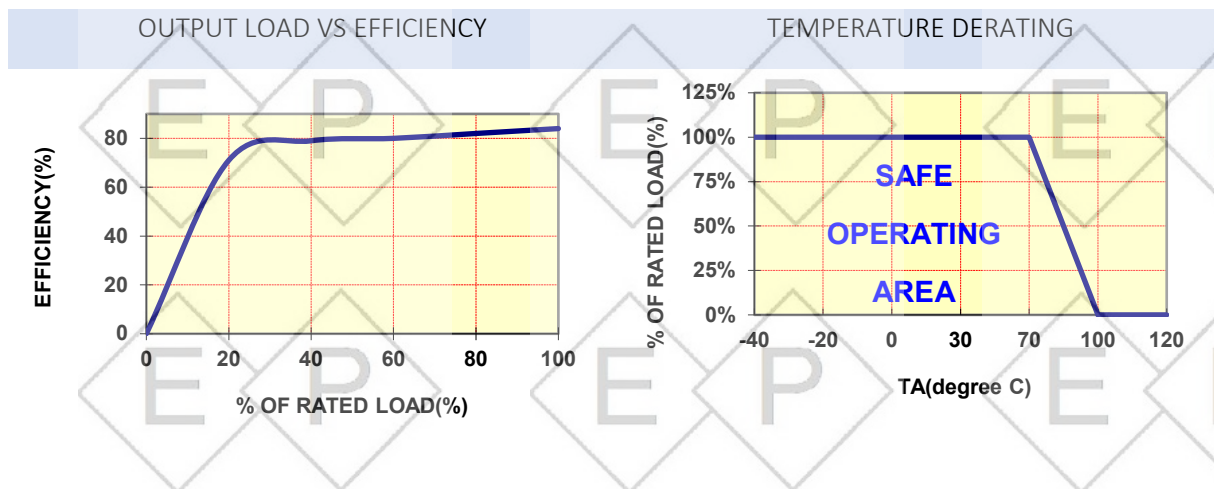


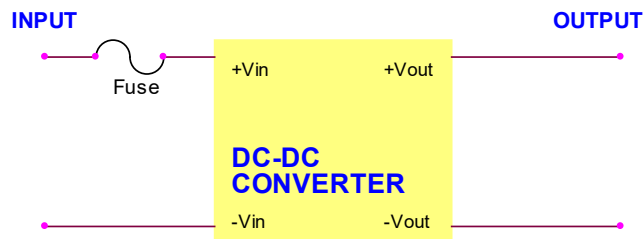
Table1 (Remote On/Off Control)

Remote On/Off Control

Parameter	Min	Max
Supply On	Under 1 VDC or Open Circuit	
Supply Off	4VDC	
Standby Input Current	0.2mA	
Control Input Current(On)	-0.5mA	
Control Input Current(Off)	5mA	
Control Common	Referenced to -Vin	

Input Fuse Selection Guide

4.5-6.0V or 4.5-9V	9-18V or 9-36V	18-36V or 18-72V	36-72V
INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)
3000mA Slow-Blow Type	1500mA Slow-Blow Type	800mA Slow-Blow Type	400mA Slow-Blow Type



Note: Certain applications may require the installation of external fuse in front of the input.

EP3-6W Series Application Notes:

EXTERNAL CAPACITANCE REQUIREMENTS:

No external capacitance is required for operation of the EP3-6W series.

To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5 ohm from DC to 100KHz is required.

External output capacitance is not required for operation, however it is recommended that 10uF tantalum and 0.1uF ceramic capacitance be selected for reduced system noise.

Additional output capacitance may be added for increased filtering, but should not exceed 1000uF.

We Can Offer EMC-Filter According To EN55011/22 Class B.

Negative Outputs:

A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting -OUT as the negative output.

Spezifikationen können sich ohne Vorankündigung ändern.

Für etwaige fehlerhafte Angaben oder unvollständige Bezeichnungen kann keine Haftung übernommen werden.