

## 33~75 WATTS ISOLATED DC/DC CONVERTERS

## TOM SERIES

- ◆ 9V ~ 75V , 2:1 & 4:1 INPUT RANGE
- ◆ REGULATED OUTPUT
- ◆ 1500Vdc INPUT / OUTPUT ISOLATION
- ◆ HIGH EFFICIENCY
- ◆ REMOTE ON /OFF CONTROL
- ◆ THERMAL SHUTDOWN
- ◆ SOFT START
- ◆ UVLO/OVLO SHUTDOWN
- ◆ SHORT CIRCUIT PROTECTION (continuous)
- ◆ OVER VOLTAGE PROTECTION (clamp)
- ◆ INDUSTRY STANDARD
- ◆ MTBF> 301,000 hrs



ELECTRICAL SPECIFICATIONS :  
At Nominal Input , Full Load and 25°C

### Model Selection Chart :

Model Number	Input Voltage Vdc	Output Voltage Vdc	Output Current mA	Efficiency	
				@Max.Load %(Typ.)	
TOM33-1203-AX	12 (9~18)	3.3	10000	78	
TOM40-1205-AX		5	8000	80	
TOM60-1212-AX		12	5000	83	
TOM60-1215-AX		15	4000	84	
TOM60-1224-AX		24	2500	86	
TOM40-1205-BX		±5	±4000	79	
TOM60-1212-BX		±12	±2500	83	
TOM60-1215-BX		±15	±2000	84	
TOM32-1212-CX		3.3V±12V	6000±500	72	
TOM35-1215-CX		3.3V±15V	6000±500	72	
TOM42-1212-CX		5V±12V	6000±500	75	
TOM45-1215-CX		5V±15V	6000±500	75	
TOM33-2403-AX		24 (18~36)	3.3	10000	79
TOM40-2405-AX			5	8000	81
TOM60-2412-AX	12		5000	85	
TOM60-2415-AX	15		4000	85	
TOM60-2424-AX	24		2500	88	
TOM40-2405-BX	±5		±4000	79	
TOM60-2412-BX	±12		±2500	84	
TOM60-2415-BX	±15		±2000	84	
TOM32-2412-CX	3.3V±12V		6000±500	74	
TOM35-2415-CX	3.3V±15V		6000±500	74	
TOM42-2412-CX	5V±12V		6000±500	76	
TOM45-2415-CX	5V±15V		6000±500	76	
TOM33-4803-AX	48 (36~75)		3.3	10000	79
TOM40-4805-AX			5	8000	80
TOM60-4812-AX		12	5000	83	
TOM60-4815-AX		15	4000	84	
TOM60-4824-AX		24	2500	84	
TOM40-4805-BX		±5	±4000	79	
TOM60-4812-BX		±12	±2500	83	
TOM60-4815-BX		±15	±2000	86	
TOM32-4812-CX		3.3V±12V	6000±500	75	
TOM35-4815-CX		3.3V±15V	6000±500	75	
TOM42-4812-CX		5V±12V	6000±500	77	
TOM45-4815-CX		5V±15V	6000±500	77	
TOM40-2405-AXW		24 (9~36)	5	8000	79
TOM40-2412-AXW			12	3300	84
TOM40-4805-AXW	48 (18~75)	5	8000	78	
TOM40-4812-AXW		12	3300	85	

### Absolute Maximum Input Voltage :

- 12Vdc Input Models : 25V
- 24Vdc Input Models : 50V
- 48Vdc Input Models : 100V
- Remote On/Off Control :  
On : TTL High or Open  
Off : TTL Low or Short

### GENERAL SPECIFICATIONS :

- Switching Frequency : 60KHz Typical
- Efficiency : See Table
- Isolation Voltage :  
Input-to-Output : 1500Vdc  
Input/Output to Case : 1500Vdc
- Isolation Resistance : ≥  
1000Mohm(500VDC)

### ENVIRONMENTAL SPECIFICATIONS :

- Operating Temperature Range(Ambient):  
-40°C to +71°C (with derating )
- Maximum Case Temperature : +100°C
- Thermal Shutdown : +105°C ~ +115°C Case
- Storage Temperature Range : -55°C to +115°C
- Cooling : Free-air Convection
- Temperature Coefficient : ±0.05% /°C max
- Humidity : 95%

### PHYSICAL SPECIFICATIONS :

- Case Material : Nickel-Coated Copper with  
Non-Conductive Base
- Pin Material : Brass, Solder Coated
- Potting Material: Epoxy  
(Flammability to UL94V-0)
- Dimension : 3.0\*2.6\*0.83 inches  
(76.2\*66.0\*21.1mm)
- Weight : 212g

### INPUT SPECIFICATIONS :

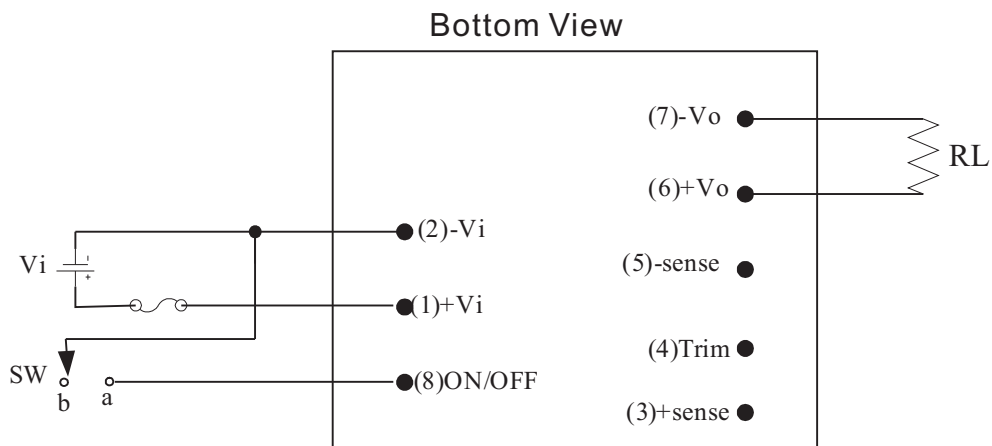
- Input Voltage Range : See Table
- Input Filter : Pi Type

OUTPUT SPECIFICATIONS :
· Output Voltage & Current : See Table
· Output Voltage Accuracy :
Single/Dual= $\pm 2\%$
Triple = Main , $\pm 2\%$
Auxiliary , $\pm 5\%$
· Ripple & Noise( 20MHz BW) :
5V,3.3V: $\leq 80\text{mVp-pmax.}$
Others: 1% P-P max.
· Line Regulation : $\pm 1\%$ max.
· Load Regulation F.L $\rightarrow$ 1/4F.L :
Single Output : $\pm 1.0\%$ max.
Other Outputs : $\pm 2.5\%$ max.
· Short Circuit Protection :
Continuous(auto-recovery)
· Over Load Protection : $\geq 110\%$ of full Load
· Transient Response Recovery Time
(50% Load Step Change) : $280\mu\text{s max.}$

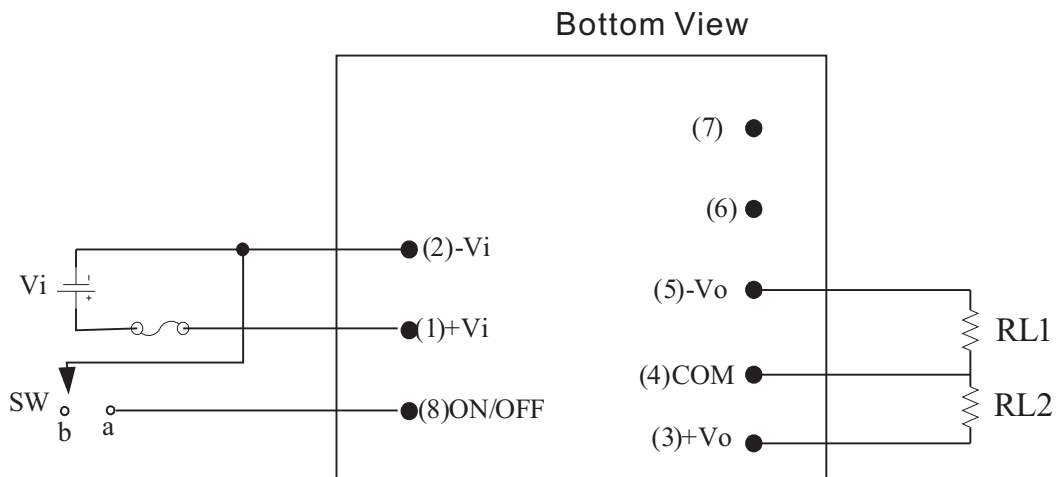
RECOMMENDED INPUT FUSE (Slow Blow) :
· 12Vdc Input Models : 15A/250V
· 24Vdc Input Models : 8A/250V
· 48Vdc Input Models : 4A/250V

Remote Control

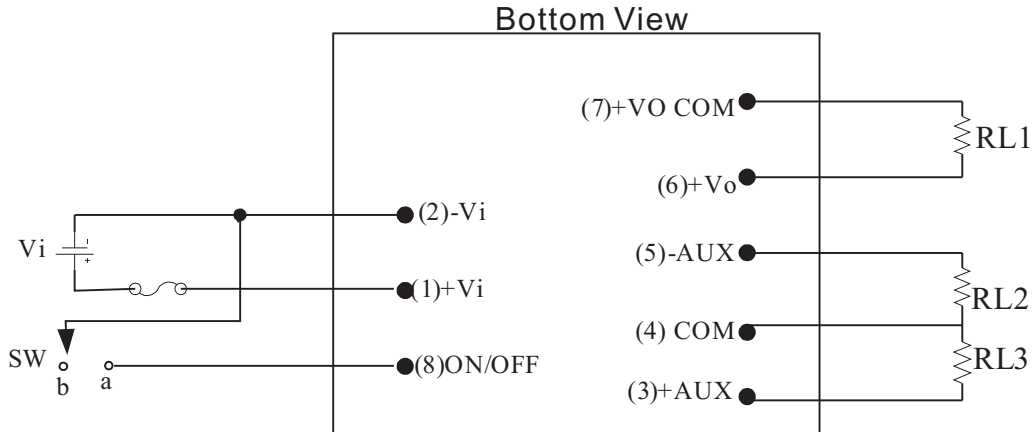
Single :



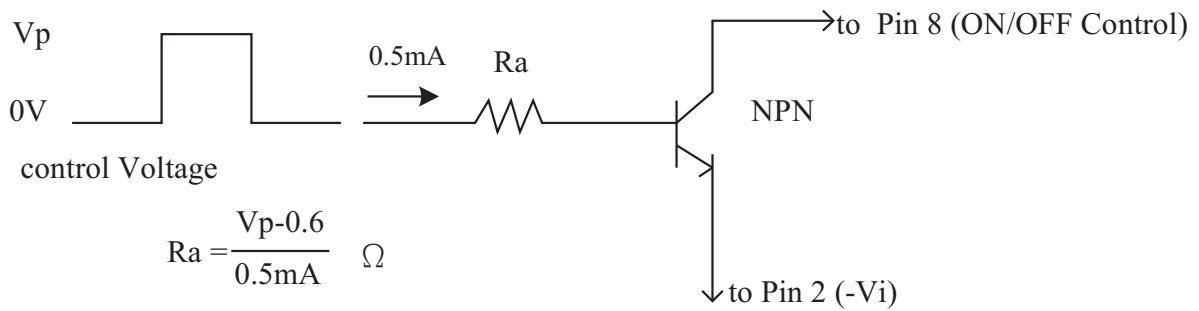
Dual :



Triple :



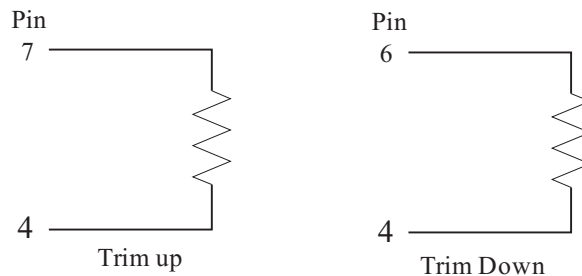
The converter can be disabled by connecting SW to position “a” . Connecting SW to position “b” , the converter can normally operate. The SW can be replaced by a NPN transistor with connecting as follows:



Note : The control voltage is referenced to negative input ( $-V_i$ )

### Trim Function

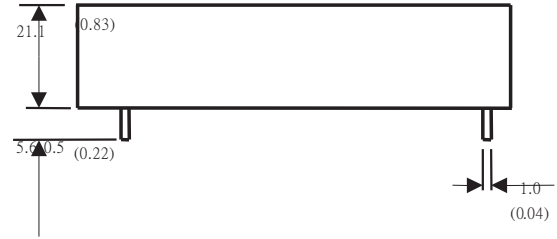
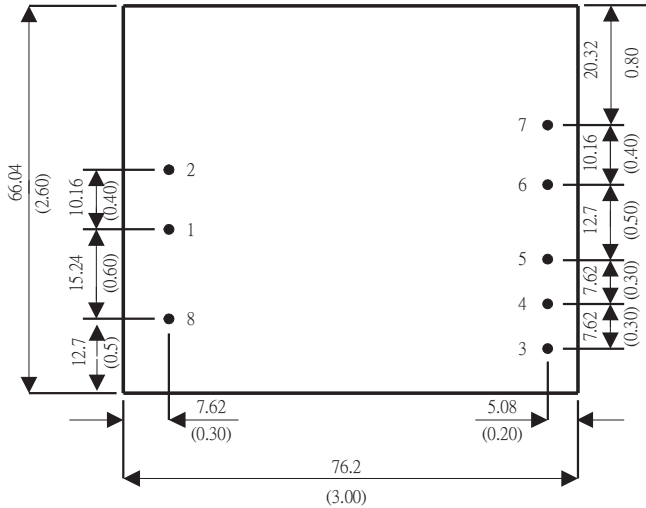
The converter's output voltage can be trimmed up (+10% max) by connecting a resistor between Pin4 and pin7, and be trimmed down<sup>(1)</sup> between pin 4 and pin 6, as shown below:



Note: Trim down range may depend on different output voltages.

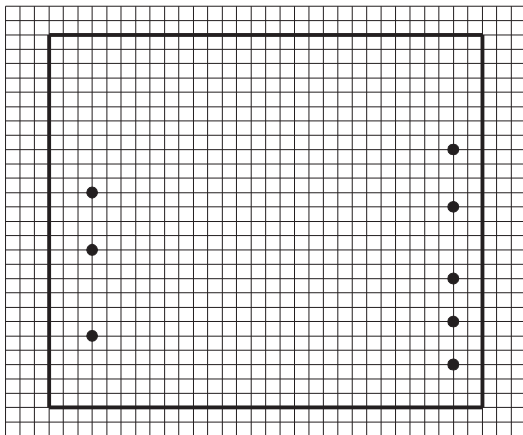
Mechanical Specifications

Bottom View



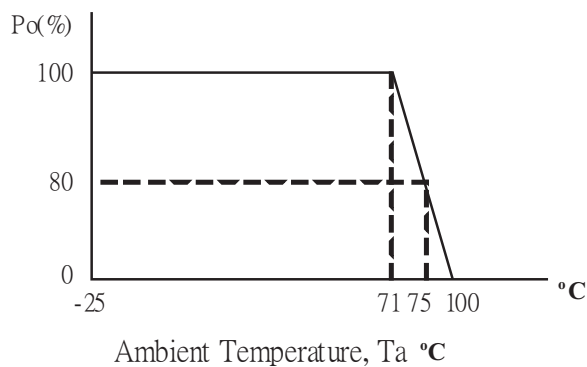
Tolerance	Millimeters	Inches
	X ±0.5	.XX ±0.02
	XX ±0.5	.XXX ±0.02
Pin	±0.05	±0.002

Recommended Pin Patterns  
Bottom View (2.54mm / 0.1inch grids)



Pin	Single	Dual	Triple
1	+Vin	+Vin	+Vin
2	-Vin	-Vin	-Vin
3	+Sense	+Vout	+Aux
4	Output Trim	Com	Com
5	-Sense	-Vout	-Aux
6	+Vout	No Pin	+Vo
7	-Vout	No Pin	+Vo Com
8	Remote ON/OFF Control		

Power Derating Curve



Note

- (1) All specifications are typical at Ta=25°C, nominal input voltage, resistive load and rated output current unless otherwise noted.
- (2) The unit will shut down when the case temperature reaches between 105°C~115°C. The unit will automatically restart as long as the case temperature reduced to the normal operating range.
- (3) Specifications subject to change without notice.