

MEDICAL & HEALTHCARE DC/DC PRODUCT APPLICATION GUIDE



General & input				Output single	Dual	Standards																												
Series	Footprint	Fully encapsulated	Connection	Nominal Power* (W)	Narrow range (10%)	Standard range (2:1)	Wide range (4:1)	4-5-9 VDC	9-18 VDC	18-36 VDC	36-75 VDC	9-36 VDC	18-75 VDC	36-160 VDC	3:3 Vout	5 Vout	5:1 Vout	9 Vout	12 Vout	15 Vout	24 Vout	±5 Vout	±12 Vout	±15 Vout	EN/IEC 60601-1 medical safety	EN 60601-1-2 EMI filter	ISO 14971 risk management for medical	ISO 13485 quality management for medical	EN 62368-1 Industrial & IT certified					
DC/DC converters, PCB surface mounted devices (SMD)																																		
TIM 2SM		●	SMD	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
TIM 3.5SM		●	SMD	3.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
DC/DC converters, PCB mounted with through-hole technology (THT), narrow input voltage range																																		
TRV 1M	SIP-9	●	THT	1	non-standard 1:1.5 input voltage range, see datasheet for available options				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
TRV 2M	SIP-9	●	THT	2	non-standard 1:1.5 input voltage range, see datasheet for available options				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DC/DC converters, PCB mounted with through-hole technology (THT), 2:1 standard input voltage range																																		
TIM 2	DIP-16	●	THT	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 3	DIP-24	●	THT	3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
TIM 3.5	DIP-16	●	THT	3.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 6	DIP-24	●	THT	6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 10	DIP-24	●	THT	10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 15	1.6" x 1"	●	THT	15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 20	1.6" x 1"	●	THT	20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 30	2" x 1"	●	THT	30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
DC/DC converters, PCB mounted with through-hole technology (THT), 4:1 wide input voltage range																																		
THM 3WI	DIP-24	●	THT	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 6WI	DIP-24	●	THT	6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 10WI	DIP-24	●	THT	10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 15WI	1.6" x 1"	●	THT	15	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 20WI	1.6" x 1"	●	THT	20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 30WI	2" x 1"	●	THT	30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
THM 60WI	Quarter-Brick	●	THT	60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

Features	Thermal performance	Isolation	Measurements (mm)	Measurements (in)
SCP (Short-Circuit Protection)	Natural convection cooling	Minimum clearance distance (mm)	Length (mm)	Length (in)
OCL (Output Current Limitation)	Lowest operating temperature (°C)	Minimum creepage distance (mm)	Width (mm)	Width (in)
OVP (Overvoltage Protection)	Highest operating temperature w/o derating* (°C)		Height (mm)	Height (in)
UVLO (Undervoltage lockout)	Highest operating temperature with derating (°C)			
Output Voltage Adjustable ("TRIM" pin)*	I/O Isolation test voltage* 60s (VAC)			
Sense input for accurate voltage at high power	I/O Isolation working voltage 60s (VAC)			
Remote control on/off ("REMOTEPIN")	Max. operating altitude (m)			
Heatsink	Max. leakage current (µA)			
	Means of protection			
C ● ● ● ● ●	● -25 91 105	8.0 8.0	24.3 x 14.4 x 10.5	0.96 x 0.57 x 0.41
C ● ● ● ● ●	● -40 83 105	8.0 8.0	24.3 x 14.4 x 10.5	0.96 x 0.57 x 0.41
C ● ● ● ● ●	● -40 98 105	8.0 8.0	19.6 x 9.9 x 12.5	0.77 x 0.49 x 0.39
C ● ● ● ● ●	● -0 90 105	8.0 8.0	19.6 x 9.9 x 12.5	0.77 x 0.49 x 0.39
C ● ● ● ● ●	● -25 91 105	8.0 8.0	24.3 x 14.4 x 10.5	0.96 x 0.57 x 0.41
C ● ● ● ● ●	● -40 97 105	8.0 8.0	31.8 x 20.3 x 10.2	1.25 x 0.80 x 0.40
C ● ● ● ● ●	● -40 83 105	8.0 8.0	24.3 x 14.4 x 10.5	0.96 x 0.57 x 0.41
C ● ● ● ● ●	● -40 92 105	8.0 8.0	31.8 x 20.3 x 10.2	1.25 x 0.80 x 0.40
C ● ● ● ● ●	● -40 84 105	8.0 8.0	31.8 x 20.3 x 10.2	1.25 x 0.80 x 0.40
C ● ● ● ● ●	● -40 80 105	8.0 8.0	35.6 x 25.4 x 10.2	1.60 x 1.00 x 0.40
C ● ● ● ● ●	● -40 76 105	8.0 8.0	35.6 x 25.4 x 10.2	1.60 x 1.00 x 0.40
C ● ● ● ● ●	● -40 65 105	8.0 8.0	50.8 x 25.4 x 10.2	2.00 x 1.00 x 0.40
C ● ● ● ● ●	● -40 97 105	8.0 8.0	31.8 x 20.3 x 10.2	1.25 x 0.80 x 0.40
C ● ● ● ● ●	● -40 92 105	8.0 8.0	31.8 x 20.3 x 10.2	1.25 x 0.80 x 0.40
C ● ● ● ● ●	● -40 82 105	8.0 8.0	31.8 x 20.3 x 10.2	1.25 x 0.80 x 0.40
C ● ● ● ● ●	● -40 76 105	8.0 8.0	35.6 x 25.4 x 10.2	1.60 x 1.00 x 0.40
C ● ● ● ● ●	● -40 68 105	8.0 8.0	35.6 x 25.4 x 10.2	1.60 x 1.00 x 0.40
C ● ● ● ● ●	● -40 63 105	8.0 8.0	50.8 x 25.4 x 10.2	2.00 x 1.00 x 0.40
C ● ● ● ● ●	● -40 105	8.0 8.0	57.9 x 36.8 x 12.7	2.28 x 1.45 x 0.50

● = Specification fully applies
 ○ = Specification does not fully apply and/or applies to optional / on-demand products

C = Continuous short circuit protection with automatic recovery
 T = When using output voltage adjustment ("trimming")