

Surface Mount

Through Hole



Size: 0.76 x 0.37 x 0.24in

Size: 0.80 x 0.40 x 0.27in

FEATURES

- Wide Input Voltage Ranges
- 7 Pin Surface Mount or 14 Pin Through Hole Packages Available
- Low Ripple & Noise
- 100% Burn In
- Input Filter with Internal Capacitor
- RoHS Converter Certified by SGS
- Custom Designs Available

DESCRIPTION

The DCB1 series of DC/DC converters offers up to 1 watt of output power in a compact 0.76" x 0.37" x 0.24" surface mount or 0.80" x 0.40" x 0.27" through hole package. This series consists of single and dual outputs with wide input voltage ranges and low ripple & noise. This series has an input filter with internal capacitor, is RoHS compliant, and has been 100% burned-in. Please call factory for order details.

MODEL SELECTION TABLE

Single Output Models

Model Number ⁽¹⁾	Input Voltage Range	Output Voltage	Max. Output Current	Input Current			Output Ripple	Efficiency	Load Regulation ⁽²⁾	Output Power
				No Load	Max. Load					
					Surface Mount	Through Hole				
DCB1-05S05X	5VDC (4.5~5.5VDC)	5VDC	200mA	30mA	253mA	253mA	60mV	79%	±8%	1 Watt
DCB1-05S12X		12VDC	84mA	28mA	255mA	254mA	100mV	79%		
DCB1-05S15X		15VDC	67mA	28mA	251mA	250mA	120mV	80%		
DCB1-12S05X	12VDC (10.8~13.2VDC)	5VDC	200mA	18mA	105mA	105mA	60mV	79%		
DCB1-12S12X		12VDC	84mA	18mA	104mA	104mA	100mV	80%		
DCB1-12S15X		15VDC	67mA	15mA	105mA	105mA	120mV	80%		
DCB1-24S33X	24VDC (21.6~26.4VDC)	3.3VDC	303mA	5mA	56mA	56mA	50mV	74%		
DCB1-24S05X		5VDC	200mA	4mA	54mA	54mA	60mV	77%		
DCB1-24S12X		12VDC	84mA	4mA	55mA	55mA	100mV	76%		
DCB1-24S15X		15VDC	67mA	4mA	55mA	55mA	120mV	76%		

MODEL SELECTION TABLE

Dual Output Models

Model Number ⁽¹⁾	Input Voltage Range	Output Voltage	Max. Output Current	Input Current			Output Ripple	Efficiency	Load Regulation ⁽²⁾	Output Power
				No Load	Max. Load					
					Surface Mount	Through Hole				
DCB1-05D33X	5VDC (4.5~5.5VDC)	±3.3VDC	±150mA	30mA	274mA	274mA	60mV	73%	±12%	1 Watt
DCB1-05D5X		±5VDC	±100mA	30mA	623mA	263mA	60mV	76%	±10%	
DCB1-05D12X		±12VDC	±42mA	28mA	255mA	253mA	100mV	79%	±10%	
DCB1-05D15X		±15VDC	±34mA	28mA	255mA	250mA	120mV	80%	±8%	
DCB1-05D55X		5/5VDC	100mA/100mA	30mA	263mA	263mA	60mV	76%	±8%	
DCB1-05D515X		5/15VDC	100mA/33mA	28mA	250mA	250mA	120mV	80%	±8%	
DCB1-12D5X	12VDC (10.8~13.2VDC)	±5VDC	±100mA	18mA	104mA	104mA	60mV	80%	±8%	
DCB1-12D12X		±12VDC	±42mA	18mA	104mA	104mA	100mV	80%	±8%	
DCB1-12D55X		5/5VDC	100mA/100mA	18mA	107mA	107mA	60mV	78%	±8%	
DCB1-12D512X		5/12VDC	100mA/42mA	18mA	104mA	104mA	100mV	80%	±8%	
DCB1-12D515X		5/15VDC	100mA/33mA	18mA	106mA	106mA	120mV	78%	±8%	
DCB1-24D33X		24VDC (21.6~26.4VDC)	±3.3VDC	±150mA	5mA	56mA	56mA	60mV	74%	
DCB1-24D5X	±5VDC		±100mA	4mA	55mA	55mA	60mV	76%	±8%	
DCB1-24D12X	±12VDC		±42mA	4mA	55mA	55mA	100mV	76%	±8%	
DCB1-24D55X	5/5VDC		100mA/100mA	5mA	54mA	54mA	60mV	76%	±8%	

SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Rated Output Current unless otherwise noted.
 We reserve the right to change specifications based on technological advances.

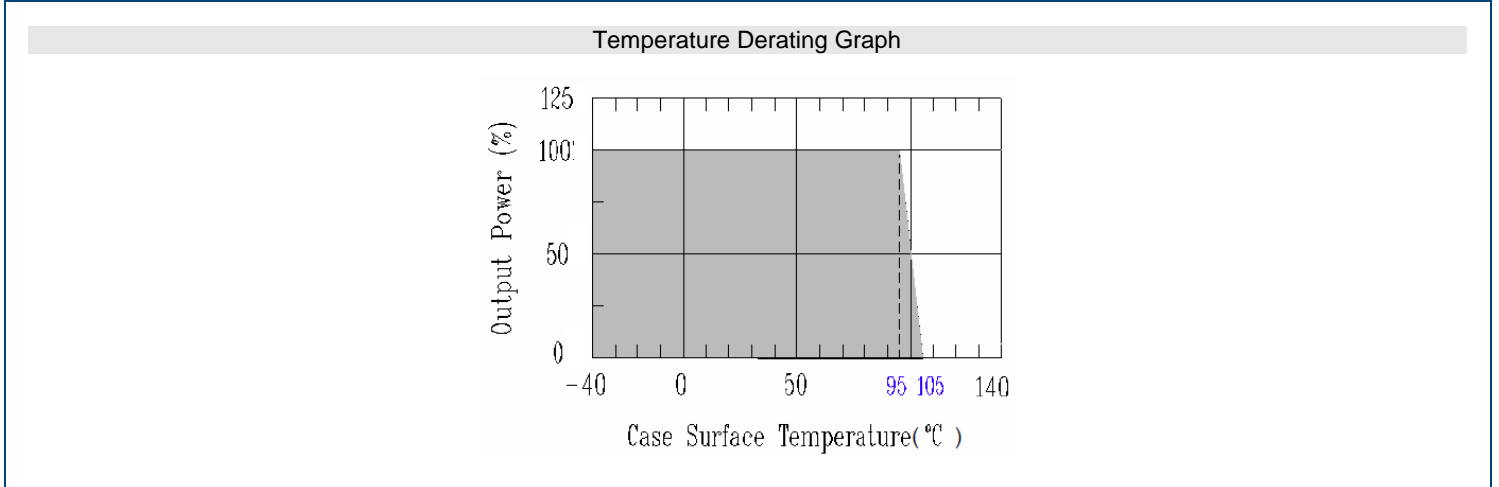
SPECIFICATION	TEST CONDITIONS	Min	Typ	Max	Unit
INPUT SPECIFICATIONS					
Input Voltage Range	5V Input Models	4.5	5	5.5	VDC
	12V Input Models	10.8	12	13.2	
	24V Input Models	21.6	24	26.4	
Input Absolute Voltage Range	5V Input Models	-0.7	5	7.5	VDC
	12V Input Models	-0.7	12	15	
	24V Input Models	-0.7	24	30	
Input Current		See Table			
Input Filter		Internal Capacitor			
OUTPUT SPECIFICATIONS					
Output Voltage		See Table			
Voltage Accuracy	Nominal Input			±5	%
Line Regulation	Per 1.0% Change in Input Change			1.3	%
Load Regulation		See Table			
Voltage Balance	Dual Outputs, Nominal Input			±1.0	%
Output Power		See Table			
Output Current		See Table			
Ripple & Noise (20MHz bandwidth)		See Table			
Temperature Coefficient			±0.01	±0.02	%/°C
Output Short Circuit Duration				1.0	Second
ENVIRONMENTAL SPECIFICATIONS					
Operating Ambient Temperature	Full Load & Natural Convection	-40		+85	°C
	@Case Surface Temperature	-40		+95	
Storage Temperature		-55		+105	°C
Humidity				90	%
Cooling		Free Air Convection			
GENERAL SPECIFICATIONS					
Typical Efficiency		See Table			
Switching Frequency	Nominal Input		110		KHz
Isolation Voltage	Test Duration 60 Seconds/0.5mA	1000/3000VDC			
Isolation Resistance	@500VDC	1000			MΩ
Isolation Capacitance	1KHz/250mVrms		30		pF
PHYSICAL SPECIFICATIONS					
Weight		0.078oz / 0.095oz (2.2g / 2.7g)			
Dimensions (L x W x H)	Surface Mount Models	0.76in x 0.37in x 0.24in (19.50mm x 9.50mm x 6mm)			
	Through Hole Models	0.80in x 0.40in x 0.27in (20.32mm x 10.16mm x 6.85mm)			
Case Material		Plastic			

NOTES

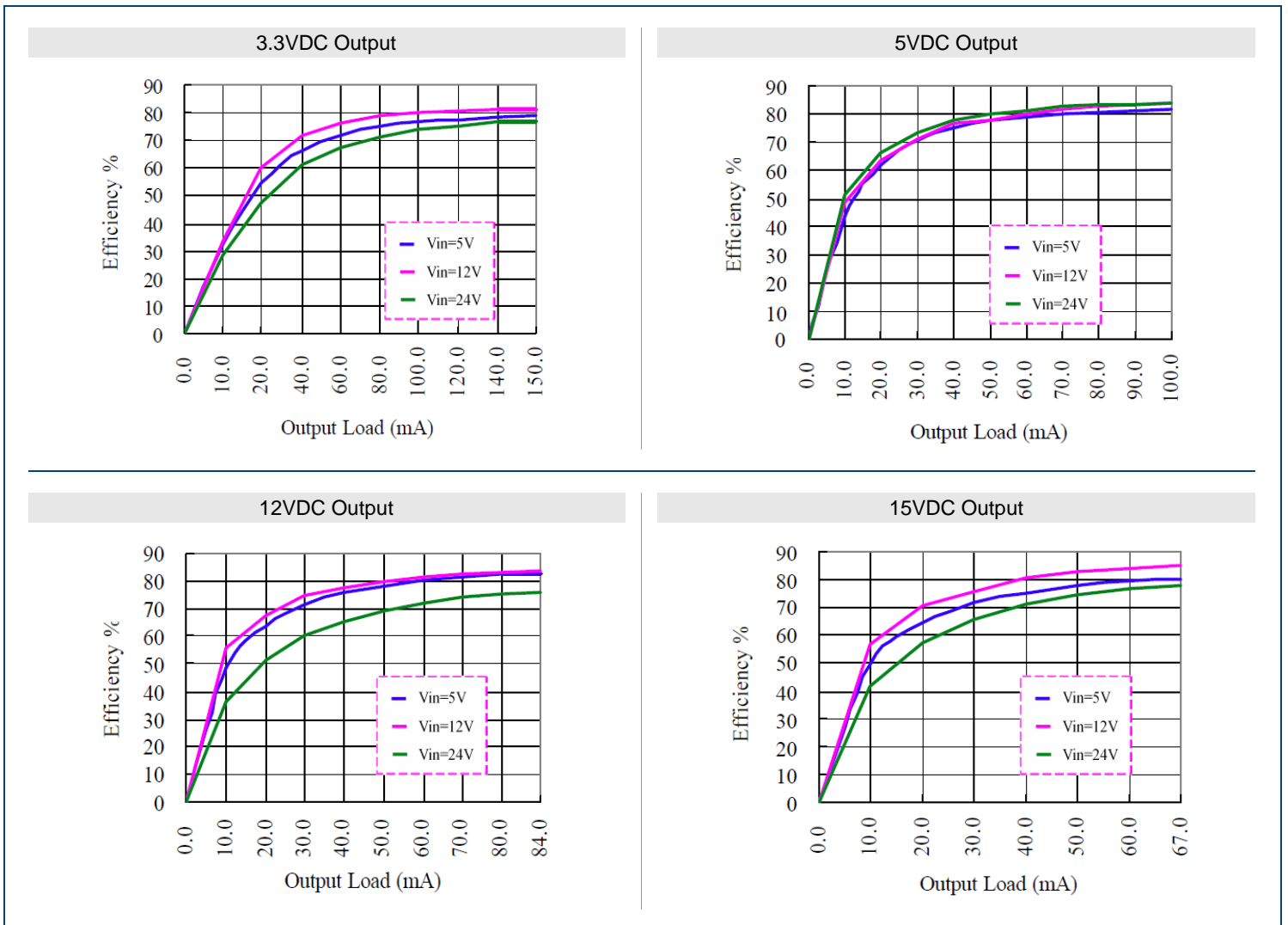
1. "X" in model number indicates case type. When "X" is "S", this indicates surface mount model. When "X" is "T", this indicates through hole model.
2. Load regulation is for output current change from 20% to 100% maximum load.
3. Exceeding maximum values may damage the module. Maximums are not continuous operating ratings.

**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES



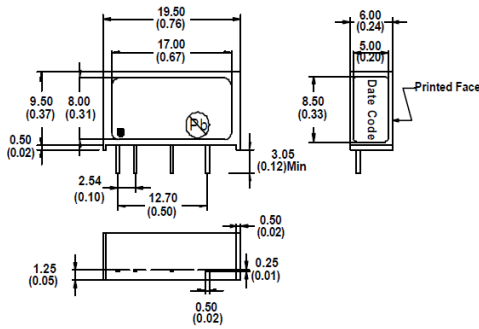
EFFICIENCY GRAPHS



MECHANICAL DRAWINGS

Surface Mount

Single & Dual Outputs

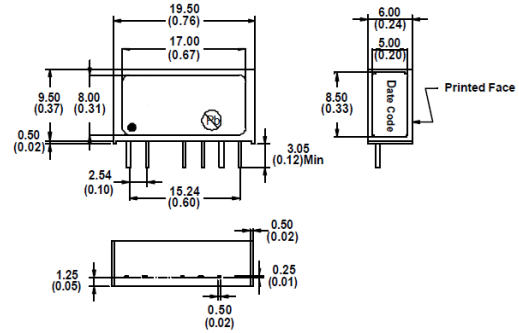


Units: mm (inch); Tolerance: 0.xx ± 0.25 (0.xx ± 0.01)

Pin	Single Output	
	1kVDC	3kVDC
1	+Vin	+Vin
2	-Vin	-Vin
3	No Pin	No Pin
4	-Vo	No Pin
5	No Pin	-Vo
6	+Vo	No Pin
7	No Pin	+Vo

Pin	Dual Output	
	1kVDC	3kVDC
1	+Vin	+Vin
2	-Vin	-Vin
3	No Pin	No Pin
4	-Vo	No Pin
5	Common	-Vo
6	+Vo	Common
7	No Pin	+Vo

Dual Separate Outputs

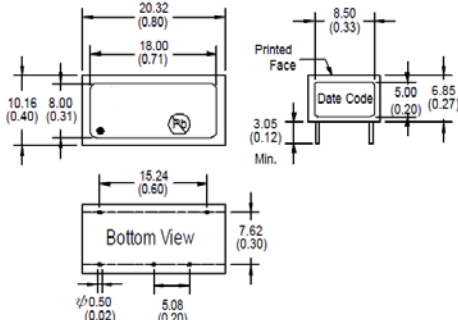


Units: mm (inch); Tolerance: 0.xx ± 0.25 (0.xx ± 0.01)

Pin	1kVDC-Dual Separate
1	+Vin
2	-Vin
3	No Pin
4	+Vo1
5	-Vo1
6	+Vo2
7	-Vo2

Through Hole Mount

Single & Dual Output



Units: mm (inch); Tolerance: 0.xx ± 0.25 (0.xx ± 0.01)

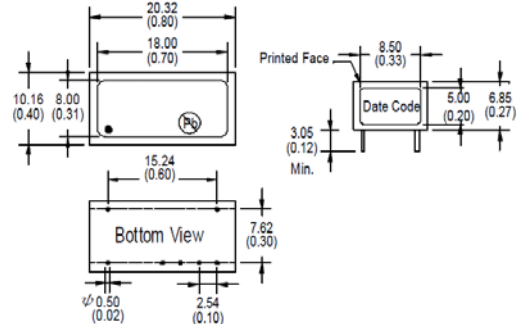
Pin	1kVDC Single		Pin
1	-Vin	+Vin	14
2	No Pin	No Pin	13
3		No Pin	12
4		-Vo	11
5	No Pin	No Pin	10
6	+Vo	No Pin	9
7	NC	No Pin	8

Pin	3kVDC Single		Pin
1	-Vin	+Vin	14
2	No Pin	No Pin	13
3		No Pin	12
4		-Vo	11
5	No Pin	No Pin	10
6	+Vo	No Pin	9
7	NC	+Vo	8

Pin	1kVDC Dual		Pin
1	-Vin	+Vin	14
2	No Pin	No Pin	13
3		No Pin	12
4		-Vo	11
5	No Pin	No Pin	10
6	+Vo	No Pin	9
7	NC	Common	8

Pin	3kVDC Dual		Pin
1	-Vin	+Vin	14
2	No Pin	No Pin	13
3		No Pin	12
4		-Vo	11
5	No Pin	No Pin	10
6	Common	-Vo	9
7	NC	+Vo	8

Dual Separate Outputs

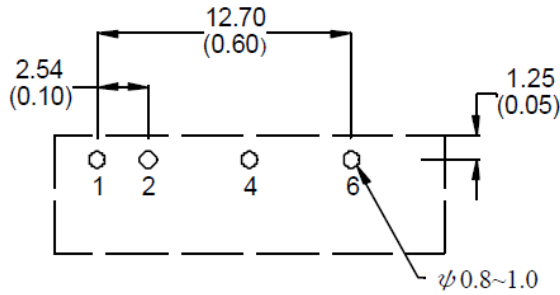


Units: mm (inch); Tolerance: 0.xx ± 0.25 (0.xx ± 0.01)

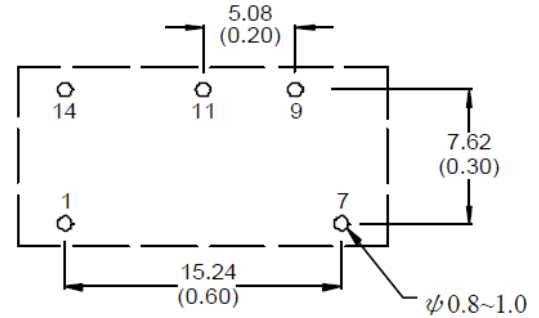
Pin	1kVDC-Dual Separate		Pin
1	-Vin	+Vin	14
2	No Pin	No Pin	13
3		No Pin	12
4		+Vo1	11
5	No Pin	-Vo1	10
6	No Pin	+Vo2	9
7	NC	-Vo2	8

RECOMMENDED FOOTPRINT DETAILS

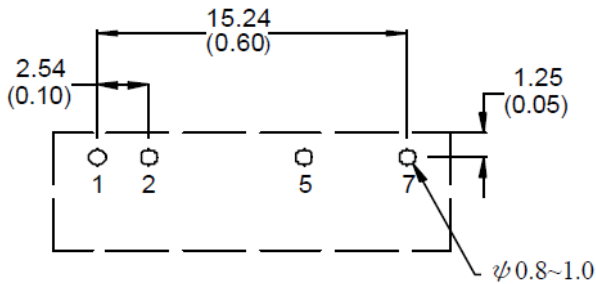
Surface Mount Single Output Model, 1kVDC



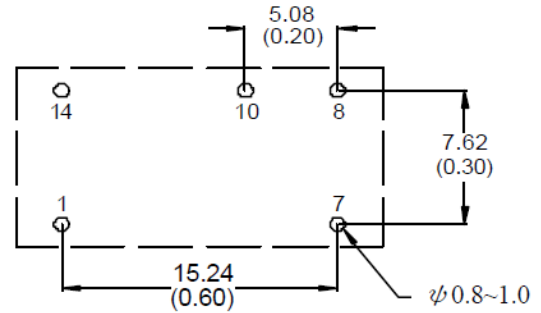
Through Hole Single Output Model, 1kVDC



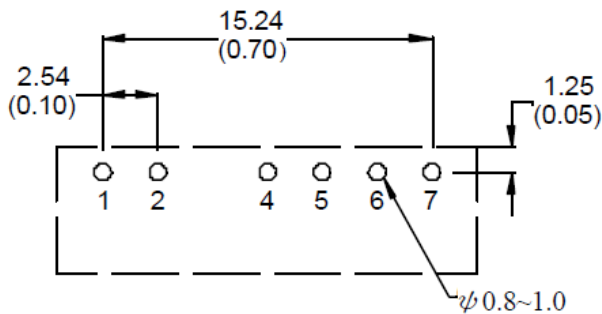
Surface Mount Single Output Model, 3kVDC



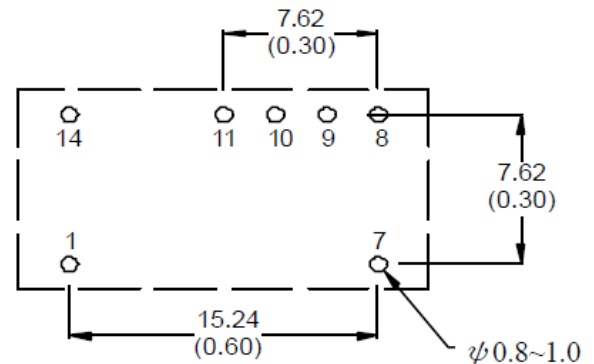
Through Hole Dual Output Model, 3kVDC



Surface Mount Dual Separate Output Models, 1kVDC



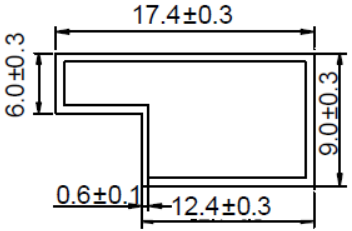
Through Hole Dual Separate Output Models, 1kVDC



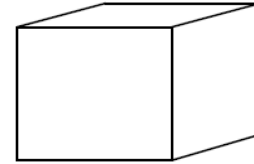
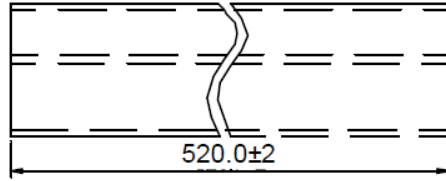
Units: mm (inch); Tolerance: 0.xx ±0.25 (0.xx ± 0.01)

PACKING INFORMATION

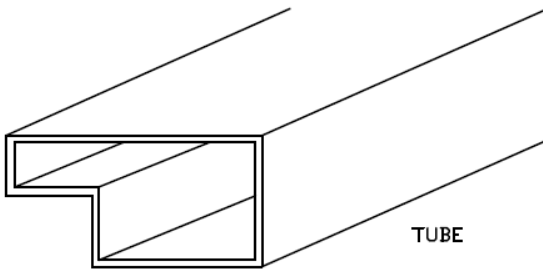
Surface Mount Style



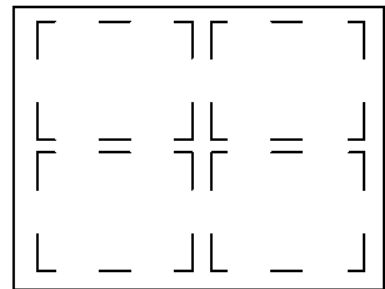
TUBE MECHANICAL DIMENSION



INNER CARTON: 565*115*117



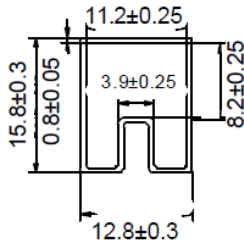
TUBE



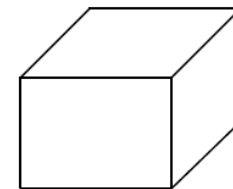
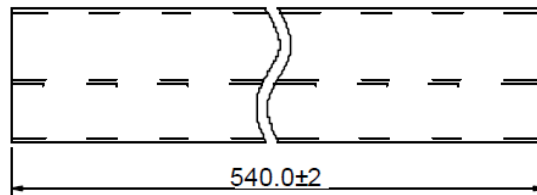
EXPORT CARTON: 580*255*265

1. Tube: 25pcs
2. Inner Carton= 50 Tubes=50*25=1250pcs
3. Export Carton= 4 Inner Cartons= 4*1250=5000pcs

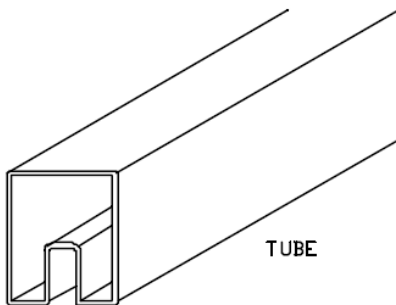
Through Hole Style



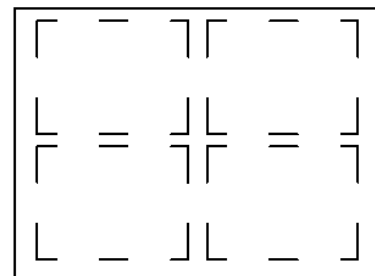
TUBE MECHANICAL DIMENSION



INNER CARTON: 575*170*87



TUBE



EXPORT CARTON: 583*380*210

1. Tube: 25pcs
2. Inner Carton=50 Tubes= 50*25=1250pcs
3. Export Carton=4 Inner Cartons= 4*1250=5000pcs

MODEL NUMBER SETUP

DCB	1	-	12	S	05	X
Series Name	Output Power		Input Voltage	Output Quantity	Ouptut Voltage	Case Type
			05: 5VDC 12: 12VDC 24: 24VDC	S: Single D: Dual	33: 3.3VDC 5: 5VDC 12: 12VDC 15: 15VDC 33: ±3.3VDC 5: ±5VDC 12: ±12VDC 15: ±15VDC 55: 5/5VDC 512: 5/12VDC 515: 5/15VDC	S: Surface Mount T: Through Hole

COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

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