MIL-STD 1553 Interface Transformers - DBIT x 3 S

- As per MIL-STD 1553 A & B
- Meet all the electrical requirements of Manchester II serial bi-phase data transmission, 1 MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-70-02
- Open-circuit impedance greater than 3 kΩ (4 kΩ typical value) from 75 KHz to 1 MHz
- Frequency range 75 KHz to 1 MHz
- Operating temperature range : -55 °C to +125 °C
- Weight : 3 to 3.5 grams

Electrical Data (25°C)

ID Code	Turn ratio 1-3 : 4-8	Turn ratio 1-3 : 5-7	DCR MAX (Ω) (1-3)	DCR MAX (Ω) (4-8)	Primary Inductance (mH) min at 75 kHz-1V
DBIT 2 3S	1 : 1	1 : 0.707	3	3.3	$Lp_{(1-3)}$ 7
DBIT 3 3S	1.2 : 1	1.67 : 1	3	2.7	$Lp_{(1-3)}$ 7
DBIT 6 3S	2.3 : 1	3.2 : 1	3	1.5	$Lp_{(1-3)}$ 7
DBIT 7 3S	1.25 : 1	1.66 : 1	3	3.3	$Lp_{(1-3)}$ 7
DBIT 8 3S	1 : 2.12	1 : 1.5	1.8	3.5	$Lp_{(4-8)}$ 7

Notes

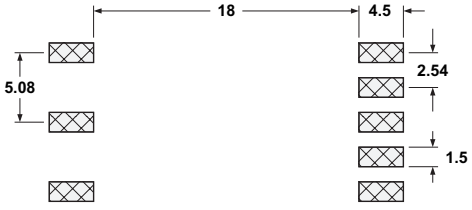
Common mode rejection : 45 dB min.
Dielectric withstanding voltage : 100 Vrms.
Insulation resistance : 1000 MΩ min.
tolerance ratio ±3 %.

To Order

DBIT # 3S

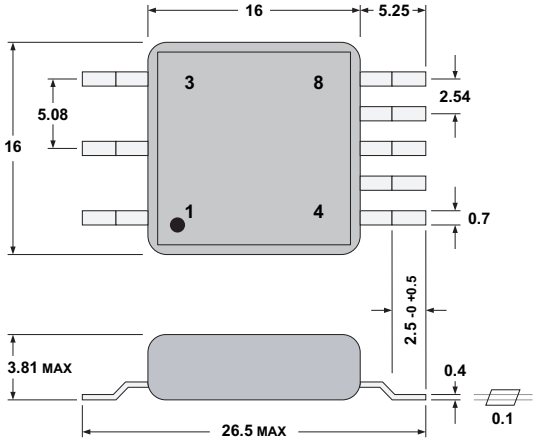
DBIT	#	3	S
Range	Transceiver type	Case height 3	**S** SMD

PCB Layout (suggested)

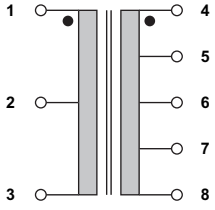


Typical Dimensions

(mm, top view)

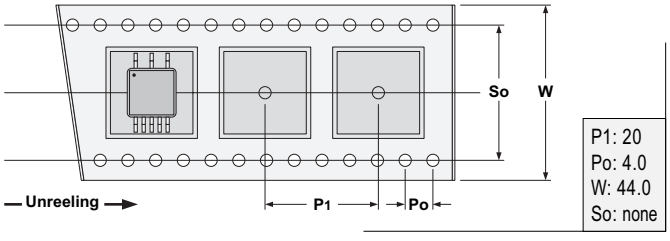


Connections

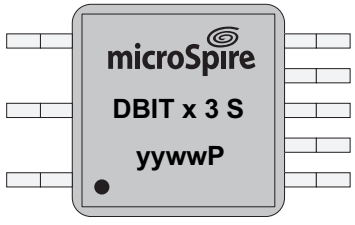


Packaging

Individually packed : 32 parts on 2 layers.
Tape and Reel:
700 units per reel of diameter 330 mm



Marking



yyww :
Date code

MIL-STD 1553 Interface Transformers - DBIT xx 4 S

- Miniature package, less board space
- As per MIL-STD 1553 A & B
- Meet all the electrical requirements of Manchester II serial bi-phase data transmission, 1 MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-70-02
- Frequency range 75 KHz to 1 MHz
- Operating temperature range: -55 °C to +125 °C
- Weight: 1.5 grams

Electrical Data (25°C)

ID Code	Turns ratio (±3%) P : S	Connections	DCR MAX (1-3)(Ω)	DCR MAX (4-8)(Ω)	DCR MAX (5-7)(Ω)	OUTPUT RISE TIME ns (MAX)	Impedance Ω (MIN) 75 kHz to 249 kHz	Impedance Ω (MIN) 250 kHz to 1 MHz
DBIT 91 4S	1 : 3.75	A	0.25	3.00	-	250 ns	(4-8) 4000	(4-8) 4000
DBIT 50 4S	1 : 2.50	A	1.5	3.5	-	250 ns	(4-8) 3000	(4-8) 4000
DBIT 70 4S	1.25 : 1	A	2.4	1.5	-	150 ns	(1-3) 3000	(1-3) 4000
DBIT 12 4S	1.41 : 1	A	2.7	2.2	-	150 ns	(1-3) 5000	(1-3) 7200
DBIT 90 4S	1 : 2.70	B	0.25	-	2.00	250 ns	(5-7) 2000	(5-7) 3000
DBIT 51 4S	1 : 1.79	B	1.5	-	2.5	150 ns	(5-7) 2000	(5-7) 4000
DBIT 71 4S	1.66 : 1	B	2.4	-	1.5	150 ns	(1-3) 3000	(1-3) 4000
DBIT 11 4S	2.00 : 1	B	2.6	-	1.3	150 ns	(1-3) 5000	(1-3) 7200

To Order

DBIT ## 4S

DBIT	##	4	S
Range	Code Turn Ratio	Case height 4.7	**S** SMD

Notes

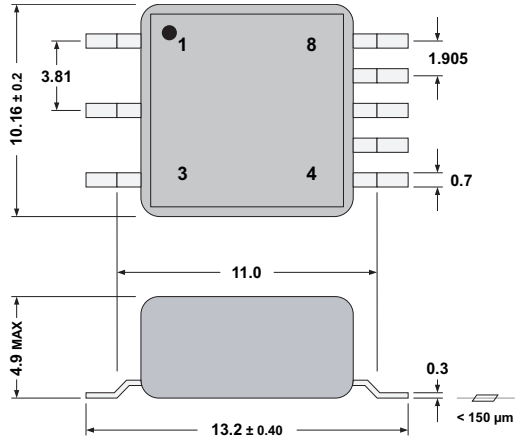
Common mode rejection: 45 dB min.

Dielectric withstanding voltage: 100 Vrms.

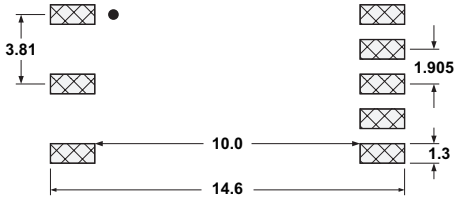
Insulation resistance: 1000 MΩ min.

Typical Dimensions

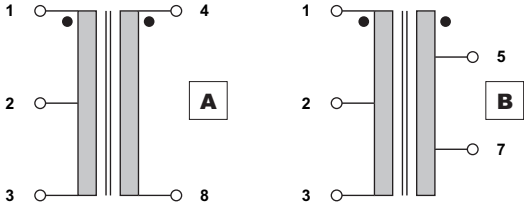
(mm, top view)



PCB Layout (suggested)

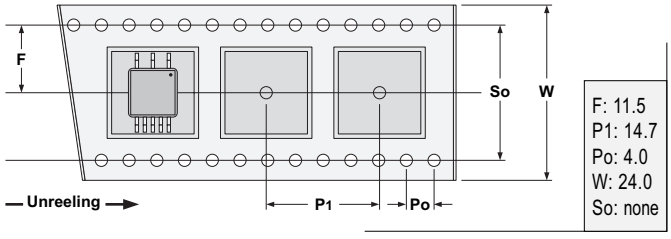


Connections

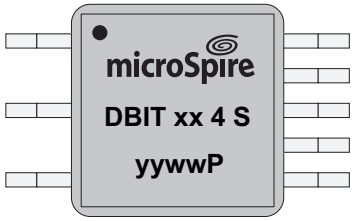


Packaging

Individually packed: 32 parts on 2 layers.
Tape and Reel:
700 units per reel of diameter 330 mm



Marking



yyww :
Date code

MIL-STD 1553 Interface Transformers - DBIT x 5 S

- As per MIL-STD 1553 A & B
- Meet all the electrical requirements of Manchester II serial bi-phase data transmission, 1 MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-70-02
- Open-circuit impedance greater than 3 kΩ (4 kΩ typical value) from 75 KHz to 1 MHz
- Frequency range 75 KHz to 1 MHz
- Operating temperature range : -55 °C to +125 °C
- Weight : 3 to 3.5 grams

Electrical Data (25°C)

ID Code	Turn ratio 1-3 : 4-8	Turn ratio 1-3 : 5-7	DCR MAX (Ω) (1-3)	DCR MAX (Ω) (4-8)	Primary Inductance (mH) min at 75 kHz-1V
DBIT 1 5S	1.4 : 1	2 : 1	2.2	1.2	$Lp_{(1-3)}$ 7
DBIT 2 5S	1 : 1	1 : 0.707	2.2	2.4	$Lp_{(1-3)}$ 7
DBIT 3 5S	1.2 : 1	1.67 : 1	2.2	2	$Lp_{(1-3)}$ 7
DBIT 5 5S	1 : 2.5	1 : 1.79	1.2	2.7	$Lp_{(4-8)}$ 7
DBIT 7 5S	1.25 : 1	1.66 : 1	2.2	2	$Lp_{(1-3)}$ 7
DBIT 8 5S	1 : 2.12	1 : 1.5	1.2	2.7	$Lp_{(4-8)}$ 7

Notes

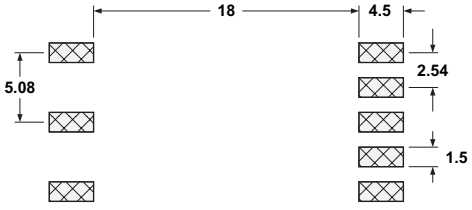
Common mode rejection : 45 dB min.
Dielectric withstanding voltage : 100 Vrms.
Insulation resistance : 1000 MΩ min.
tolerance ratio ±3 %.

To Order

DBIT # 5S

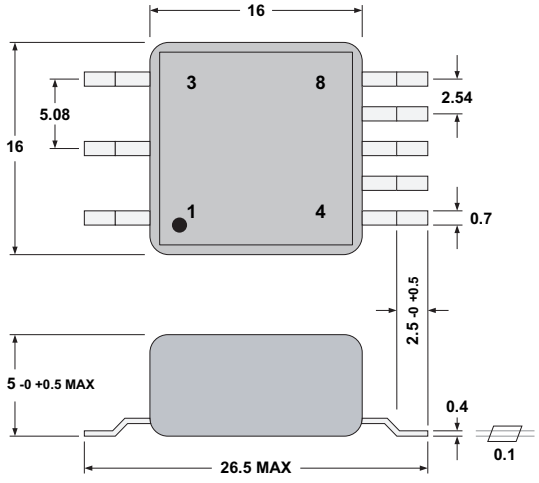
DBIT	#	5	S
Range	Part 1 to 8	Case height 5	**S** SMD

PCB Layout (suggested)

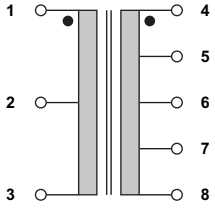


Typical Dimensions

(mm, top view)

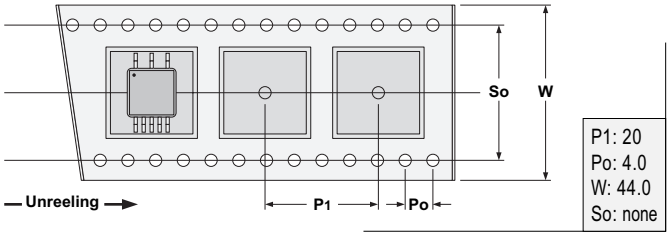


Connections

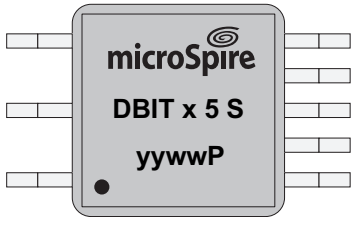


Packaging

Individually packed : 32 parts on 2 layers.
Tape and Reel:
200 units per reel of diameter 330 mm



Marking



yyww :
Date code

MIL-STD 1553 Interface Transformers - DBIT x 7 x

- As per MIL-STD 1553 A & B
- Meet all the electrical requirements of Manchester II serial bi-phase data transmission, 1 MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-70-02
- Open-circuit impedance greater than 3 kΩ (4 kΩ typical value) from 75 KHz to 1 MHz
- Frequency range 75 KHz to 1 MHz
- Operating temperature range : -55 °C to +125 °C
- Weight : <5 grams

Electrical Data (25°C)

ID Code	Turn ratio 1-3 : 4-8	Turn ratio 1-3 : 5-7	DCR MAX (Ω) (1-3)	DCR MAX (Ω) (4-8)	Primary Inductance (mH) min at 75 kHz-1V
DBIT 1 7x	1.4 : 1	2 : 1	2	1.6	$Lp_{(1-3)}$ 7
DBIT 2 7x	1 : 1	1 : 0707	2	2.2	$Lp_{(1-3)}$ 7
DBIT 3 7x	1.2 : 1	1.67 : 1	2	2	$Lp_{(1-3)}$ 7
DBIT 5 7x	1 : 2.5	1 : 1.79	1	2.2	$Lp_{(4-8)}$ 7
DBIT 6 7x	2.3 : 1	3.2 : 1	2	1	$Lp_{(1-3)}$ 7
DBIT 7 7x	1.25 : 1	1.66 : 1	2	2	$Lp_{(1-3)}$ 7
DBIT 8 7x	1 : 2.12	1 : 1.5	1	2.2	$Lp_{(4-8)}$ 7

Notes

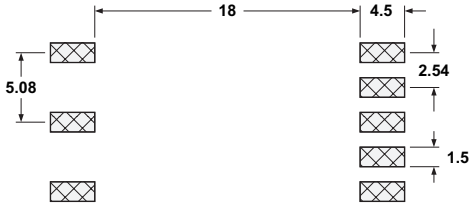
Common mode rejection : 45 dB min.
Dielectric withstanding voltage : 100 Vrms.
Insulation resistance : 1000 MΩ min.
tolerance ratio ±3 %.

To Order

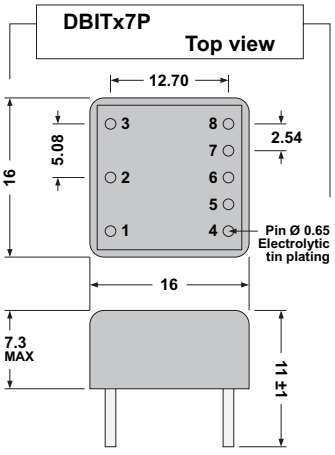
DBIT # 7x

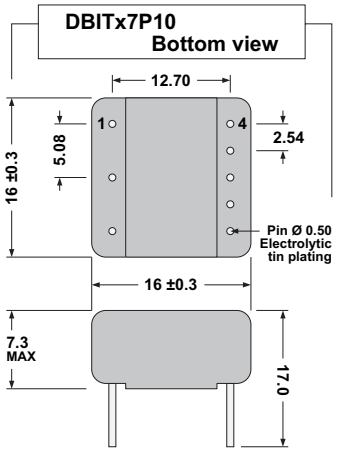
DBIT	#	7	x
Range	Part 1 to 8	Case height 7	x = **P** Pins x = **P10** Pins (10 mm) x = **S** SMD

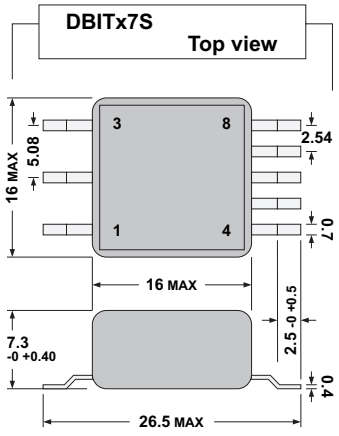
PCB Layout (suggested, DBIT x7S)



Typical Dimensions (mm)

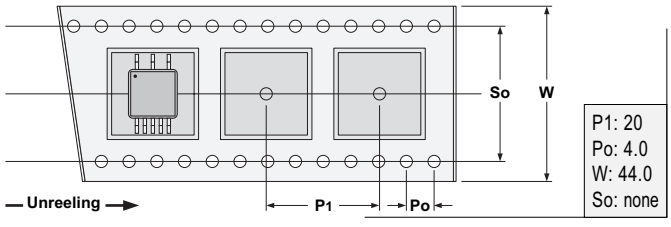




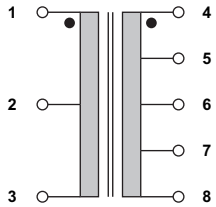


Packaging

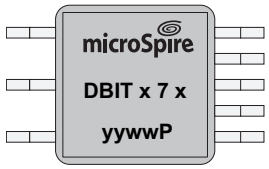
Individually packed : 32 parts on 2 layers.
Tape and Reel (DBIT x7S):
300 units per reel of diameter 330 mm



Connections



Marking



yyww :
Date code

MIL-STD 1553 Interface Transformers - DBIT 5 7 x400

- As per MIL-STD 1553 A & B
- Meet all the electrical requirements of Manchester II serial bi-phase data transmission, 1 MHz operation
- Waveform integrity:
  27 Vptop level at 250 KHz - droop <20 % into the lowest turn's wdg
- Encapsulated in accordance with MIL-T-21038 (DAP box)
- Open-circuit impedance greater than 4 kΩ from 75 KHz to 1 MHz
- Operating temperature range: -40 °C to +125 °C
- Weight: 3 to 3.5 grams

Electrical Data (25°C)

ID Code	Turn ratio 1-3 : 4-8	Turn ratio 1-3 : 5-7	DCR MAX (Ω) (1-3)	DCR MAX (Ω) (4-8)	Primary Inductance (mH) min at 75 kHz-1V
DBIT 5 7P400	1 : 2.5	1 : 1.79	1	3.5	$Lp_{(4-8)}$ 8.5

Notes

Common mode rejection: 45 dB min.
Dielectric withstanding voltage: 100 Vrms.
Insulation resistance: 1000 MΩ min - 500 VDC
tolerance ratio ±2 %.

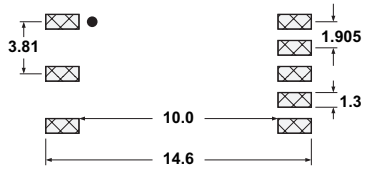
To Order

DBIT 5 7x400

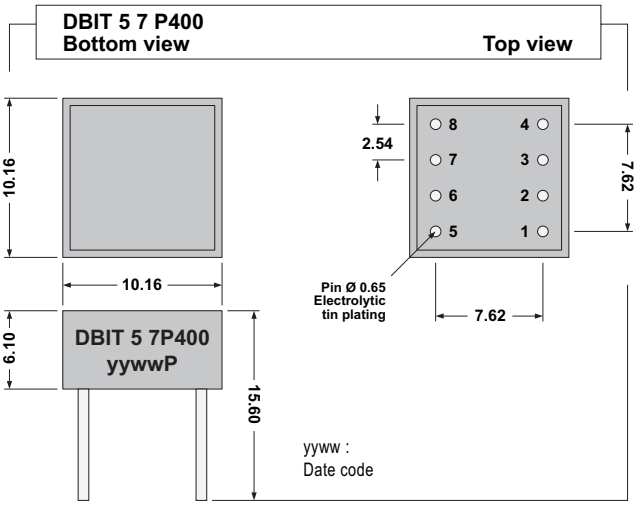
DBIT	5	7	P400
Range	Code turn ratio	Case height 7	x = **P** for Pin through hole x = **S** for SMD

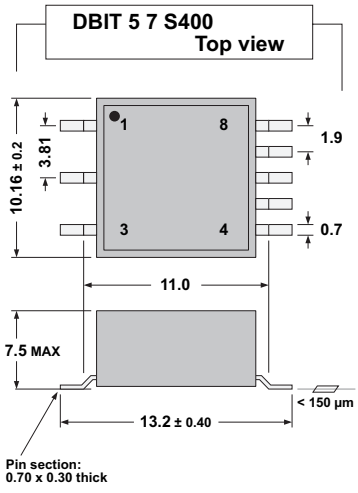
PCB Layout

(suggested, DBIT 5 7 S400)



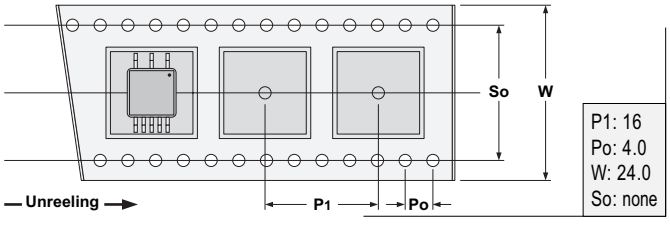
Typical Dimensions (mm)



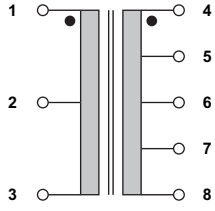


Packaging

Individually packed: 32 parts on 2 layers.
Tape and Reel (DBIT 5 7 S400):
400 units per reel of diameter 330 mm



Connections



Dual staked MIL-STD 1553 Interface Transformers - SBIT x 7.5S

- As per MIL-STD 1553 B
- Meet all the electrical requirements of Manchester II serial bi-phase data transmission, 1 MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-70-02
- Open-circuit impedance greater than 3 kΩ (4 kΩ typical value) from 75 KHz to 1 MHz
- Frequency range 75 KHz to 1 MHz
- Operating temperature range : -55 °C to +125 °C
- Weight : <5 grams

Electrical Data (25°C)

Parameter	Unit	SBIT 1 7.5S	SBIT 2 7.5S	SBIT 3 7.5S	SBIT 4 7.5S	SBIT 5 7.5S	SBIT 6 7.5S	SBIT 7 7.5S	SBIT 8 7.5S
Frequency Response									
Operating Range	kHz	75 to 1000	75 to 1000	75 to 1000	75 to 1000	75 to 1000	75 to 1000	75 to 1000	75 to 1000
Common-Mode Rejection (min)	dB	45	45	45	45	45	45	45	45
Electrical Requirements									
Terminal Winding Resistance Rdc									
• 1-3 (max)	Ω	3.5	3	1.9	1	1	1.2	3.2	1
• 4-8 (max)	Ω	3	3	1.9	3	3	3	3	3
Interwinding Capacitance (max)	pF	70	30	70	45	45	70	70	70
Winding Inductance									
• LM (min)	mH	7.5	7.5	7.5	6.0	6.0	8.0	8.0	6.0
• LL (max)	µH	6.0	6.0	6.0	8.0	6.0	8.0	6.0	7.0
Peak-to-Peak Voltage (max)									
Terminals 1-3 primary	Vpp	60	60	60	38	38	39	60	44
Droop (max)									
3 ms Pulse Duration									
140 Ω Load Across Terminals 4-8	%	10	10	10	10	10	10	10	10
Decay Time (max)									
140 Ω Load Across Terminals 4-8	ns	25	25	25	25	25	25	25	25
Backswing									
140 Ω Load Across Terminals 4-8	%	none	none	none	none	none	none	none	none
Turns Ratios									
Terminals									
• 1-3 : 4-8		1.4 : 1	1 : 1	1.20 : 1	1 : 2.5	1 : 2.5	1 : 3.2	1.25 : 1	1 : 2.12
• 1-3 : 5-7		2 : 1	1 : 0.707	1.67 : 1	1 : 1.75	1 : 1.79	1 : 2.3	1.66 : 1	1 : 1.5

To Order

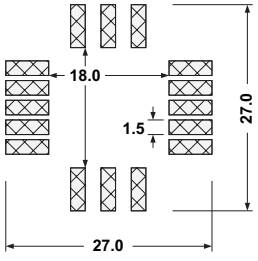
SBIT # 7.5S

SBIT	#	7.5	S
Range	Part 1 to 8	Case height 7.5	**S** SMD

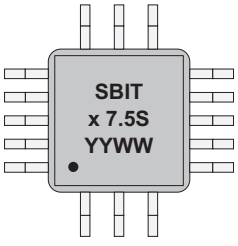
Notes

Interwinding insulation : 500 Vrms - 500 Hz.
Flammability compliance : UL94V0.

PCB Layout (suggested)

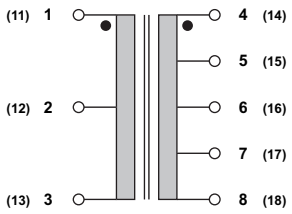


Marking

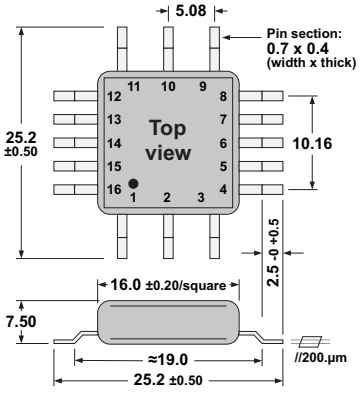


yyww :
Date code

Connections



Typical Dimensions (mm)



Dual staked MIL-STD 1553 Interface Transformers - SBIT x 7.8P

- As per MIL-STD 1553 B
- Meet all the electrical requirements of Manchester II serial bi-phase data transmission, 1 MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-70-02, MILT 21038
- Open-circuit impedance greater than 3 kΩ (4 kΩ typical value) from 75 KHz to 1 MHz
- Frequency range 75 KHz to 1 MHz
- Operating temperature range : -55 °C to +125 °C
- Weight : <5 grams

Electrical Data (25°C)

Parameter	Unit	SBIT 1 7.8P	SBIT 2 7.8P	SBIT 3 7.8P	SBIT 5 7.8P	SBIT 7 7.8P	SBIT 8 7.8P
Frequency Response							
Operating Range	kHz	75 to 1000	75 to 1000	75 to 1000	75 to 1000	75 to 1000	75 to 1000
Common-Mode Rejection (min)	dB	45	45	45	45	45	45
Electrical Requirements							
Terminal Winding Resistance Rdc							
• 1-3 (max)	Ω	2.8	2.8	2.8	2	2.8	2.2
• 4-8 (max)	Ω	3	3.5	3	3.5	3	3.5
Interwinding Capacitance (max)	pF	50	50	50	50	50	50
Winding Inductance							
• LM (min) (1-3)	mH	7.0	7.0	7.0	7.0 (4-8)	8.0	7.0 (4-8)
• LL (max)	µH	6.0	6.0	6.0	6.0	6.0	6.0
Turns Ratios							
Terminals							
• 1-3 : 4-8		1.4 : 1	1 : 1	1.20 : 1	1 : 2.5	1.25 : 1	1 : 2.12
• 1-3 : 5-7		2 : 1	1 : 0.707	1.67 : 1	1 : 1.79	1.66 : 1	1 : 1.5

To Order

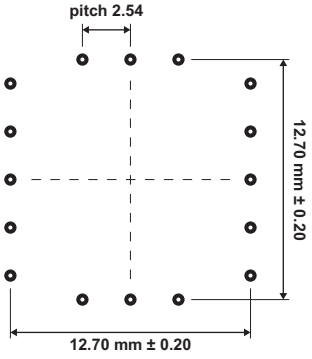
SBIT # 7.8P

SBIT	#	7.8	P
Range	Part 1 to 8 except 4 and 6	Case height 7.8	**P** pins through hole

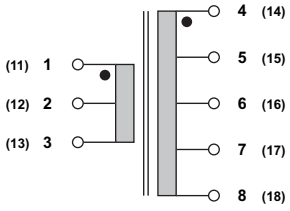
Notes

Interwinding insulation : 500 Vrms - 500 Hz.
Flammability compliance : UL94V0

PCB Layout (suggested)



Connections



Marking

yyww :
Date code

Typical Dimensions (mm)