

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, 1MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-ST-70-02C
- Applied standards: ESCC 3201 generic specification for space products
- Open-circuit impedance greater than 3kΩ (4kΩ typical value) from 75kHz to 1MHz
- Frequency range 75kHz to 1MHz
- Operating temperature range: -55°C to +125°C
- Weight: 3 to 3.5grams

Electrical Data (25°C)

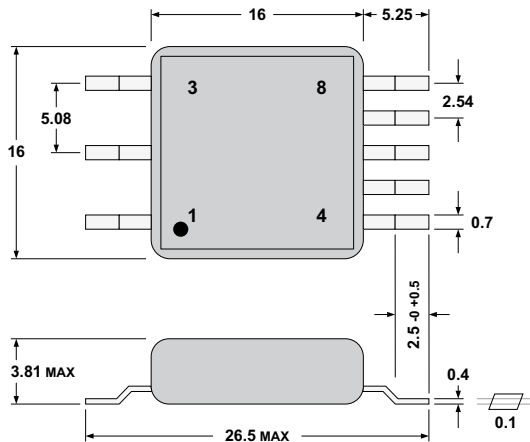
ID Code	Turn ratio 1-3 : 4-8	Turn ratio 1-3 : 5-7	DCR MAX (Ω) (1-3)	DCR MAX (Ω) (4-8)	Primary Inductance (mH) min at 75 kHz-1V
DBIT 1 3S	1.4 : 1	2 : 1	3	2.3	Lp (1-3) 7
DBIT 2 3S	1 : 1	1 : 0.707	3	3.3	Lp (1-3) 7
DBIT 3 3S	1.2 : 1	1.67 : 1	3	2.7	Lp (1-3) 7
DBIT 4 3S	1 : 2.5	1 : 1.74	1.5	3.5	Lp (4-8) 7
DBIT 5 3S	1 : 2.5	1 : 1.79	1.5	3.5	Lp (4-8) 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

To Order

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

DBIT # 3S

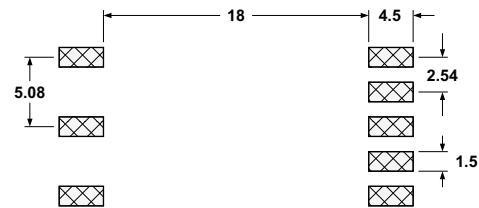
Typical Dimensions (mm, top view)



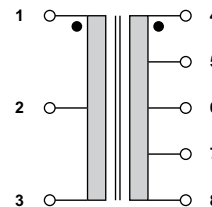
Notes

Common mode rejection: 45dBmin.
 Dielectric withstanding voltage: 100Vrms.
 Insulation resistance: 1000MΩmin.
 tolerance ratio ±3%.

PCB Layout (suggested)

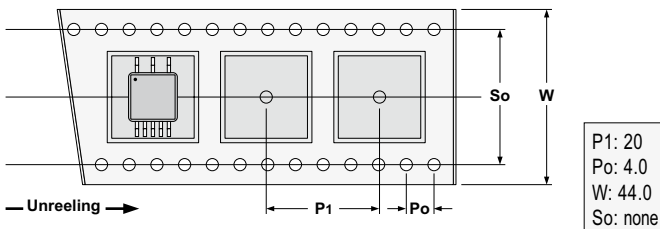


Connections



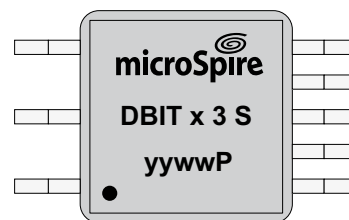
Packaging

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



P1: 20
 Po: 4.0
 W: 44.0
 So: none

Marking



yyww :
 Date code

High Grade Technologies...
 RF and Data Magnetics...
 Bus Transformers...



MIL-STD 1553 Interface Transformers - DBIT xx 4S



- 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, 1MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-ST-70-02C
- Applied standards: ESCC 3201 generic specification for space products
- Frequency range 75kHz to 1MHz
- Operating temperature range: -55°C to +125°C
- Weight: 1.5grams

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

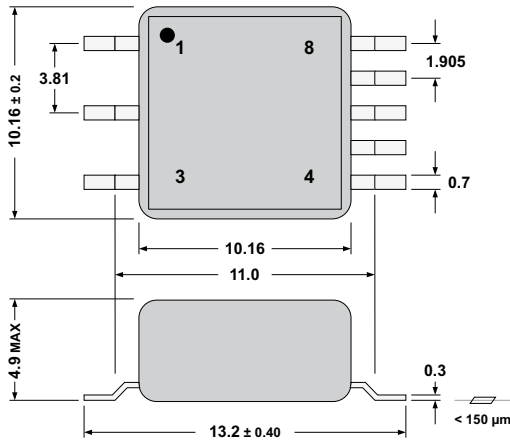
DBIT ## 4S

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

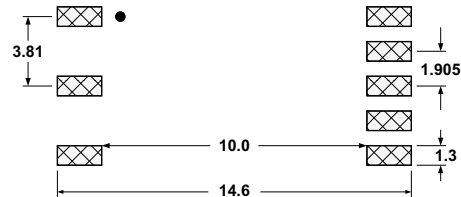
Notes

- Common mode rejection: 45dBmin.
- Dielectric withstanding voltage: 100 Vrms.
- Insulation resistance: 1000 MΩmin.

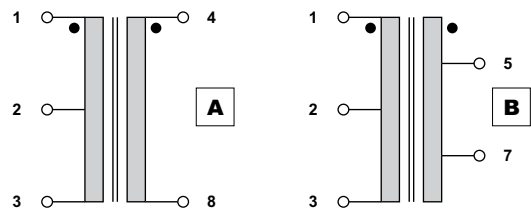
Typical Dimensions (mm, top view)



PCB Layout (suggested)

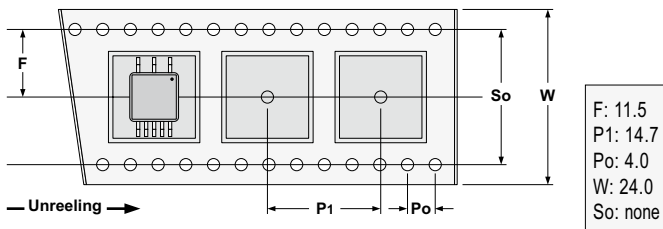


Connections

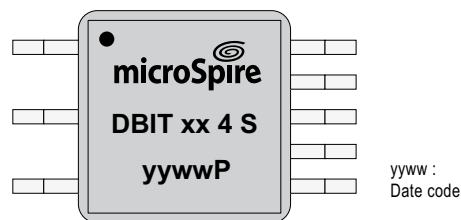


Packaging

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



Marking



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, 1MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-ST-70-02C
- Applied standards: ESCC 3201 generic specification for space products
- Open-circuit impedance greater than 3kΩ (4kΩ typical value) from 75KHz to 1MHz
- Frequency range 75KHz to 1MHz
- Operating temperature range: -55°C to +125°C
- Weight: 3 to 3.5grams

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	L _p (1-3) 7
DBIT 2 5S	1 : 1	1 : 0.707	2.2	2.4	L _p (1-3) 7
DBIT 3 5S	1.2 : 1	1.67 : 1	2.2	2	L _p (1-3) 7
DBIT 4 5S	1 : 2.5	1 : 1.74	1.2	2.7	L _p (4-8) 7
DBIT 5 5S	1 : 2.5	1 : 1.79	1.2	2.7	L _p (4-8) 7
DBIT 6 5S	2.3 : 1	3.2 : 1	2.2	1.2	L _p (1-3) 7
DBIT 7 5S	1.25 : 1	1.66 : 1	2.2	2	L _p (1-3) 7
DBIT 8 5S	1 : 2.12	1 : 1.5	1.2	2.7	L _p (4-8) 7

Notes

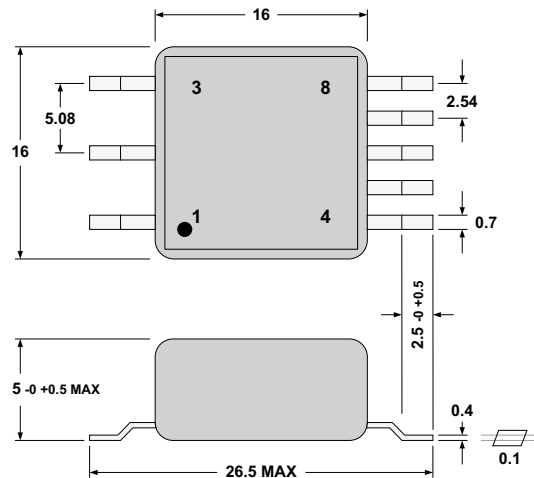
Common mode rejection: 45dBmin.
 Dielectric withstanding voltage: 100 Vrms.
 Insulation resistance: 1000 MΩmin.
 tolerance ratio ±3%.

To Order

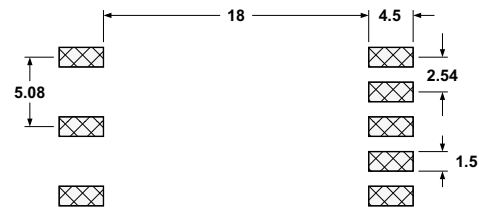
DBIT	#	5	S
Range	Part 1 to 8	Case height 5	S SMD

DBIT # 5S

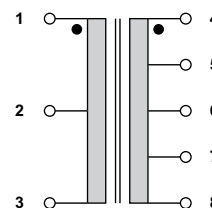
Typical Dimensions (mm, top view)



PCB Layout (suggested)

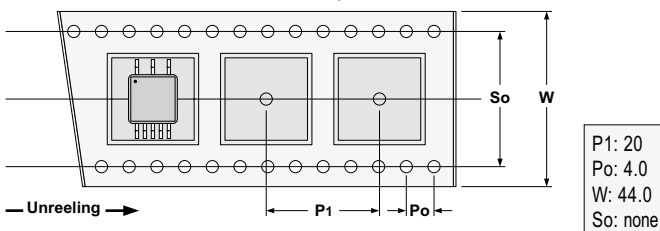


Connections



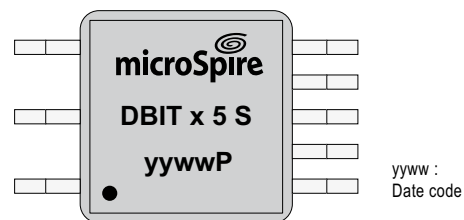
Packaging

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

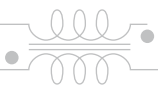


P1: 20
 P0: 4.0
 W: 44.0
 So: none

Marking



High Grade Technologies...
 RF and Data Magnetics...
 Bus Transformers...



MIL-STD 1553 Interface Transformers - DBIT x 7 P



- 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-ST-70-02C
- Applied standards: ESCC 3201 generic specification for space products
- Open-circuit impedance greater than 3k Ω (4k Ω typical value) from 75KHz to 1 MHz
- Frequency range 75KHz to 1 MHz
- Operating temperature range: -55 °C to +125 °C
- Weight: <5grams

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 17 P	1.4 : 1	2 : 1	2	1.6	L _p (1-3) 7
DBIT 27 P	1 : 1	1 : 0707	2	2.2	L _p (1-3) 7
DBIT 37 P	1.2 : 1	1.67 : 1	2	2	L _p (1-3) 7
DBIT 47 P	1 : 2.5	1 : 1.74	1	2.2	L _p (4-8) 7
DBIT 57 P	1 : 2.5	1 : 1.79	1	2.2	L _p (4-8) 7
DBIT 67 P	2.3 : 1	3.2 : 1	2	1	L _p (1-3) 7
DBIT 77 P	1.25 : 1	1.66 : 1	2	2	L _p (1-3) 7
DBIT 87 P	1 : 2.12	1 : 1.5	1	2.2	L _p (4-8) 7

Notes

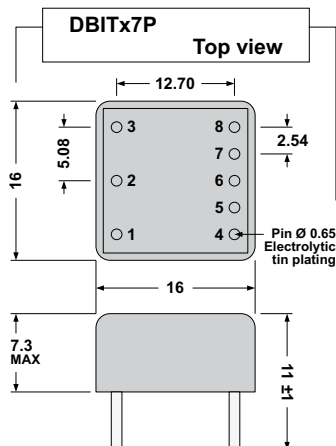
- Common mode rejection: 45 dBmin.
- Dielectric withstanding voltage: 100 Vrms.
- Insulation resistance: 1000 M Ω min.
- tolerance ratio \pm 3%.

To Order

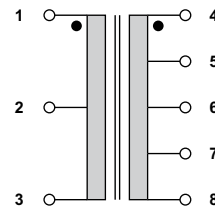
DBIT # 7P

DBIT	#	7	P
Range	Part 1 to 8	Case height 7	x = P Pins

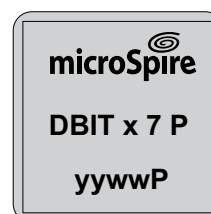
Typical Dimensions (mm)



Connections



Marking



yyww :
Date code

MIL-STD 1553 Interface Transformers - DBIT x 7 P10



- As per MIL-STD 1553 A & B
- Meet all the electrical requirements of Manchester II serial bi-phase data transmission, 1MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-ST-70-02C
- Applied standards: ESCC 3201 generic specification for space products
- Open-circuit impedance greater than 3k Ω (4k Ω typical value) from 75kHz to 1MHz
- Frequency range 75kHz to 1MHz
- Operating temperature range: -55 $^{\circ}$ C to +125 $^{\circ}$ C
- Weight: <5grams

Electrical Data (25 $^{\circ}$ C)

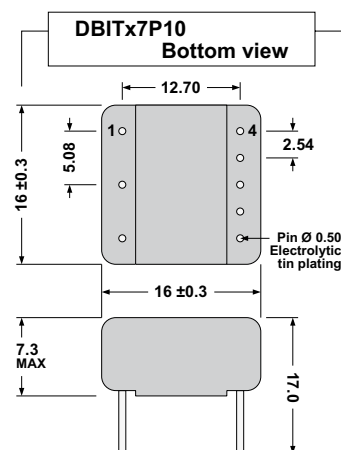
ID Code	Turn ratio 1-3: 4-8	Turn ratio 1-3: 5-7	DCR MAX (Ω) (1-3)	DCR MAX (Ω) (4-8)	Primary Inductance (mH) min at 75 kHz-1V
DBIT 1 7 P10	1.4 : 1	2 : 1	2	1.6	L _p (1-3) 7
DBIT 2 7 P10	1 : 1	1 : 0.707	2	2.2	L _p (1-3) 7
DBIT 3 7 P10	1.2 : 1	1.67 : 1	2	2	L _p (1-3) 7
DBIT 4 7 P10	1 : 2.5	1 : 1.74	1	2	L _p (4-8) 7
DBIT 5 7 P10	1 : 2.5	1 : 1.79	1	2.2	L _p (4-8) 7
DBIT 6 7 P10	2.3 : 1	3.2 : 1	2	1	L _p (1-3) 7
DBIT 7 7 P10	1.25 : 1	1.66 : 1	2	2	L _p (1-3) 7
DBIT 8 7 P10	1 : 2.12	1 : 1.5	1	2.2	L _p (4-8) 7
DBIT 9 7 P10	1 : 2.38	1 : 1.666	1	2.2	L _p (1-3) 7
DBIT 10 7P10	1 : 3.0	1 : 2.14	1	2.5	L _p (4-8) 7

To Order

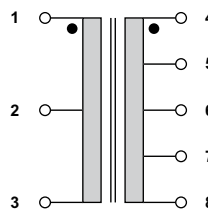
DBIT # 7 P10

DBIT	#	7	P10
Range	Part 1 to 10	Case height 7	x = P10 Pins (10 mm)

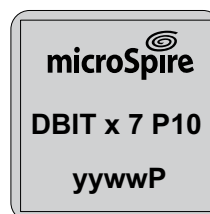
Typical Dimensions (mm)



Connections



Marking



yyww :
Date code

MIL-STD 1553 Interface Transformers - DBIT x 7 S



- As per MIL-STD 1553 A & B
- Meet all the electrical requirements of Manchester II serial bi-phase data transmission, 1MHz operation
- Epoxy molding in accordance with outgassing requirements of ECSS-Q-ST-70-02C
- Applied standards: ESCC 3201 generic specification for space products
- Open-circuit impedance greater than 3kΩ (4kΩ typical value) from 75KHz to 1MHz
- Frequency range 75KHz to 1MHz
- Operating temperature range: -55°C to +125°C
- Weight: <5grams

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 17 S	1.4 : 1	2 : 1	2	1.6	Lp (1-3) 7
DBIT 27 S	1 : 1	1 : 0707	2	2.2	Lp (1-3) 7
DBIT 37 S	1.2 : 1	1.67 : 1	2	2	Lp (1-3) 7
DBIT 47 S	1 : 2.5	1.67 : 1	2	2	Lp (1-3) 7
DBIT 57 S	1 : 2.5	1 : 1.74	1	2	Lp (4-8) 7
DBIT 67 S	2.3 : 1	3.2 : 1	2	1	Lp (1-3) 7
DBIT 77 S	1.25 : 1	1.66 : 1	2	2	Lp (1-3) 7
DBIT 87 S	1 : 2.12	1 : 1.5	1	2.2	Lp (4-8) 7

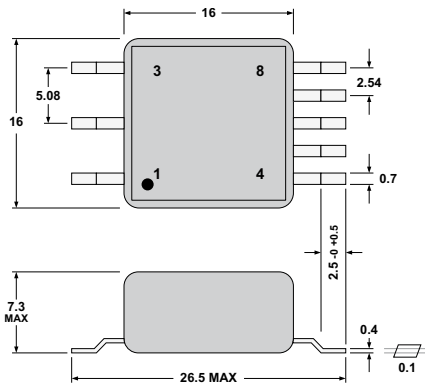
Notes

Common mode rejection: 45dBmin.
 Dielectric withstanding voltage: 100Vrms.
 Insulation resistance: 1000MΩmin.
 tolerance ratio ±3%.

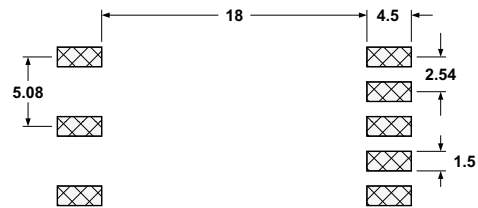
To Order

DBIT	#	7	DBIT # 7 S
Range	Part 1 to 8	Case height 7	x = S SMD

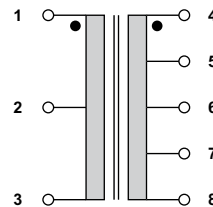
Typical Dimensions (mm)



PCB Layout (suggested, DBIT x 7 S)

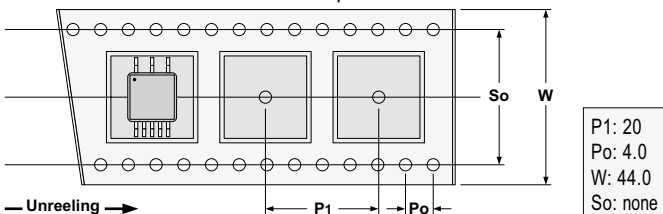


Connections

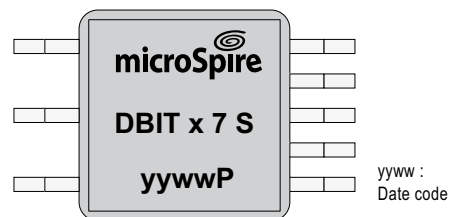


Packaging

Individually packed: 32 parts on 2 layers.
 Tape and Reel (DBIT x 7S):
 300 units per reel of diameter 330mm



Marking



MIL-STD 1553 Interface Transformers - DBIT 57x400



- 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 V_{top} level at 250 KHz - droop <20% into the lowest turn's wd
- Encapsulated in accordance with MIL-T-21038 (DAP box)
- Applied standards: ESCC 3201 generic specification for space products
- Open-circuit impedance greater than 4k Ω 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 57x400	1 : 2.5	1 : 1.79	1	3.5	L _{p(4-8)} 8.5

Notes

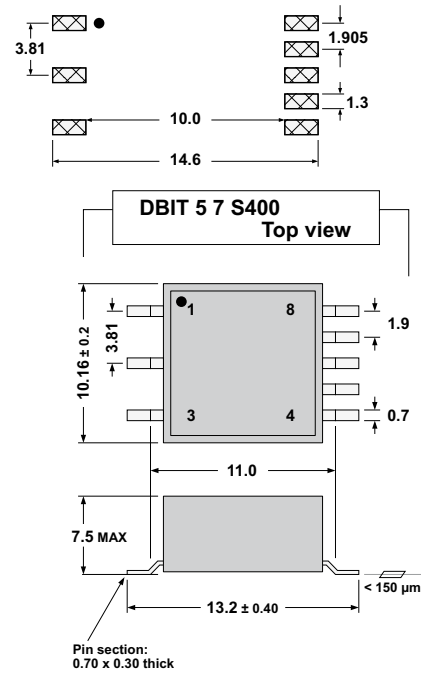
Common mode rejection: 45 dBmin.
 Dielectric withstanding voltage: 100 Vrms.
 Insulation resistance: 1000 M Ω min - 500 VDC
 tolerance ratio \pm 2%.

To Order

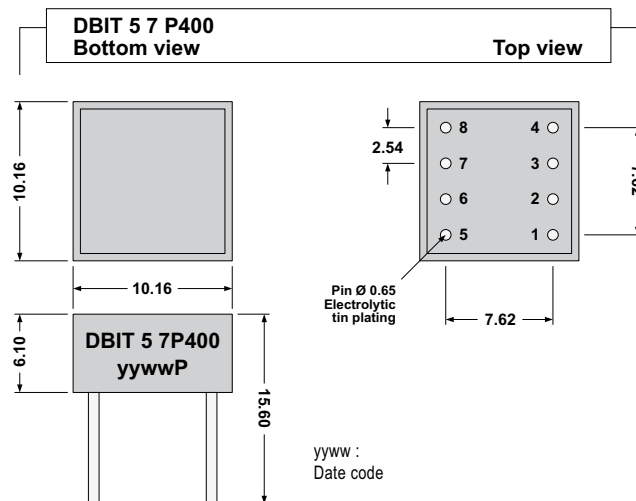
			DBIT 57x400
DBIT	5	7	P400
Range	Code turn ratio	Case height 7	x = P for Pin through hole x = S for SMD

PCB Layout

(suggested, DBIT 57 S400)

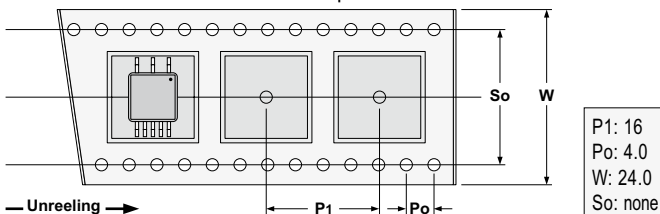


Typical Dimensions (mm)

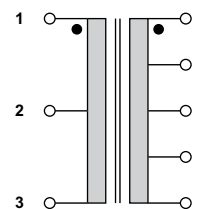


Packaging

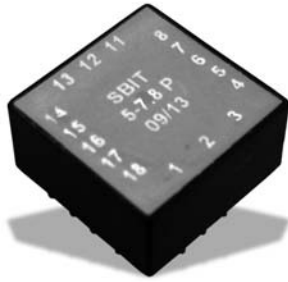
Individually packed: 32 parts on 2 layers.
 Tape and Reel (DBIT 57 S400):
 400 units per reel of diameter 330 mm



Connections



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 3kΩ (4kΩ typical value) from 75KHz to 1 MHz
- Frequency range 75KHz to 1 MHz
- Operating temperature range : -55°C to +125°C
- Weight : <5grams

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

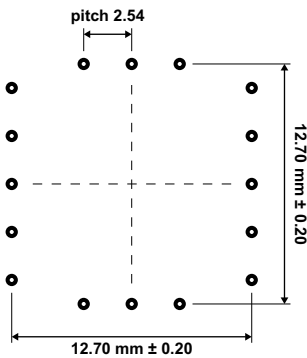
To Order

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

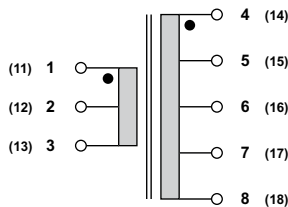
Notes

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

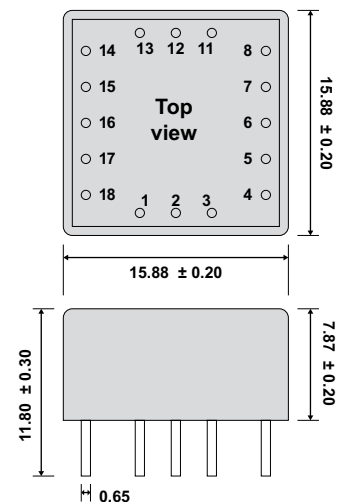
PCB Layout (suggested)



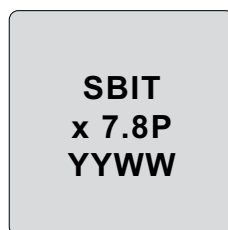
Connections



Typical Dimensions (mm)



Marking



yyww :
Date code

High Grade Technologies...
RF and Data Magnetics...
Bus Transformers...

