MIL-STD 1553 Interface Transformers
DBIT x 3 S

- In accordance to 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
- Qualified EPPL issue 22 2012-12-17
- 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)

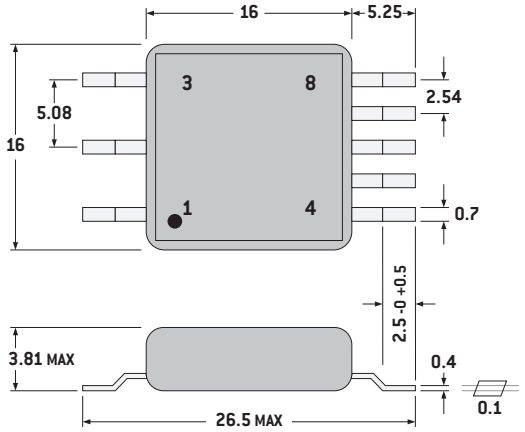
ID Code	Turn ratio 1-3: 4-8	Turn ratio 1-3: 5-7	R_{DC} max. (Ω) (1-3)	R_{DC} max. (Ω) (4-8)	Primary Inductance (mH) min at 75 kHz-1V
DBIT 1 3S	1.4: 1	2: 1	3	2.3	Lp (1-3) 7
DBIT 2 3S	1: 1	1: 0.707	3	3.3	Lp (1-3) 7
DBIT 3 3S	1.2: 1	1.67: 1	3	2.7	Lp (1-3) 7
DBIT 4 3S	1: 2.5	1: 1.74	1.5	3.5	Lp (4-8) 7
DBIT 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 # 3S

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

Typical Dimensions
(mm, top view)



Notes

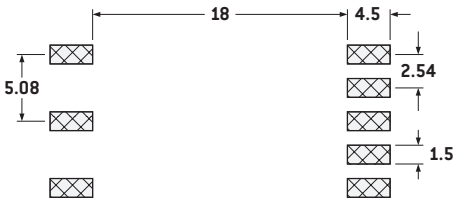
Common mode rejection: 45 dB min.

Dielectric withstanding voltage: 100 V_{RMS}.

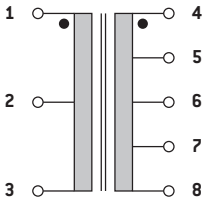
Insulation resistance: 1000 MΩ min.

Tolerance ratio ± 3 %.

PCB Layout (suggested)

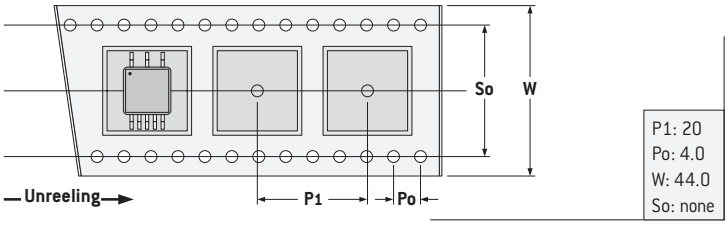


Connections

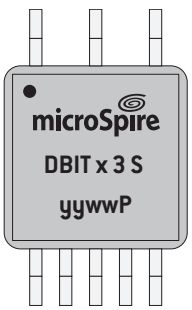


Packaging

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



Marking



yyww:
Date code

MIL-STD 1553 Interface Transformers
DBIT xx 4 S

- Miniature package, less board space
- In accordance to 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
- 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	R_{DC} max. (1-3)(Ω)	R_{DC} max. (4-8)(Ω)	R_{DC} 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	2.1	-	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

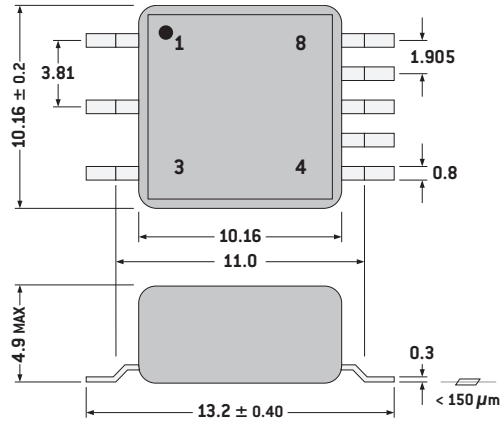
Notes

Common mode rejection: 45 dB min.

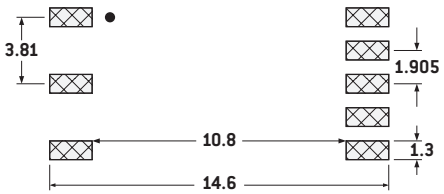
Dielectric withstanding voltage: 100 V_{RMS}.

Insulation resistance: 1000 MΩ min.

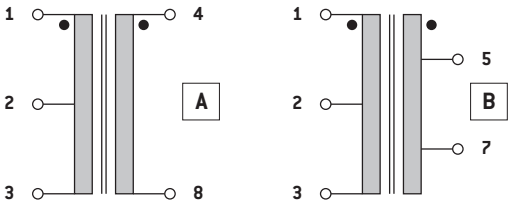
Typical Dimensions
(mm, top view)



PCB Layout (suggested)

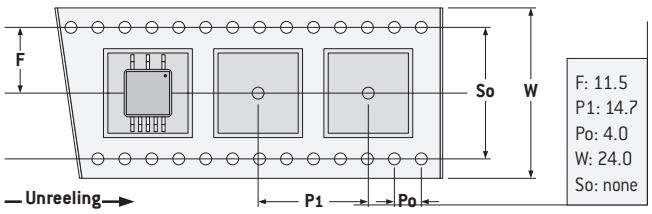


Connections



Packaging

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



Marking

yyww:
Date code

HIGH GRADE PRODUCTS

MIL-STD 1553 Interface Transformers
DBIT x 5 S(A)

- In accordance to 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
- Qualified EPPL
- Open-circuit impedance greater than 4 kΩ over 75 kHz to 1 MHz working frequency
- Frequency range 75 kHz to 1 MHz
- Operating temperature range: –55°C up to +150°C (for 5SA only)
- Weight: 3 to 3.5 grams

Electrical Data (25°C)

ID Code	Turn ratio 1-3: 4-8	Turn ratio 1-3: 5-7	R_{DC} max. (Ω) 1-3	R_{DC} max. (Ω) 4-8	Primary Inductance (mH) min at 75 kHz-1V	Open Circuit Impedance Min (kΩ)	Operating Temperature range
DBIT 1 5S*	1,4:1	2:1	2,2	1,2	7 (1-3)	3	–55°C +125°C
DBIT 2 5S*	1:1	1:0,707	2,2	2,4	7 (1-3)	3	–55°C +125°C
DBIT 3 5S*	1,2:1	1,67:1	2,2	2	7 (1-3)	3	–55°C +125°C
DBIT 4 5S*	1:2,5	1:1,74	1,2	2,7	7 (4-8)	3	–55°C +125°C
DBIT 5 5S*	1:2,5	1:1,79	1,2	2,7	7 (4-8)	3	–55°C +125°C
DBIT 6 5S*	2,3:1	3,2:1	2,2	1,2	7 (1-3)	3	–55°C +125°C
DBIT 7 5S*	1,25:1	1,66:1	2,2	2	7 (1-3)	3	–55°C +125°C
DBIT 8 5S*	1:2,12	1:1,5	1,2	2,7	7 (4-8)	3	–55°C +125°C
DBIT 1 5SA	1,4:1	2:1	1,23	1,1	7 (1-3)	4	–55°C +150°C
DBIT 2 5SA	1:1	1:0,707	1,23	1,6	7 (1-3)	4	–55°C +150°C
DBIT 3 5SA	1,2:1	1,67:1	1,23	1,4	7 (1-3)	4	–55°C +150°C
DBIT 5 5SA	1:2,5	1:1,79	0,6	1,4	7 (4-8)	4	–55°C +150°C
DBIT 6 5SA	2,3:1	3,2:1	1,23	0,8	7 (1-3)	4	–55°C +150°C
DBIT 7 5SA	1,25:1	1,66:1	1,23	1,25	7 (1-3)	4	–55°C +150°C
DBIT 8 5SA	1:2,12	1:1,5	0,7	1,4	7 (4-8)	4	–55°C +150°C

*** EPPL products - Detail Specifications MSP003**

Notes

Common mode rejection : 45 dB min.

Dielectric withstanding voltage : 500 V_{RMS}.

Insulation resistance : 1,3 - 4,8
500 V_{DC}
>1000 MΩ

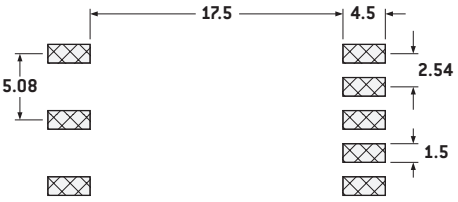
Tolerance ratio ± 3 %.

To Order

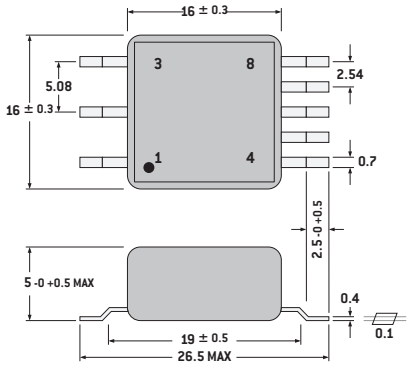
DBIT # 5SA

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

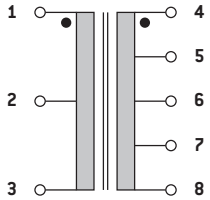
PCB Layout (suggested)



Typical Dimensions
(mm, top view)

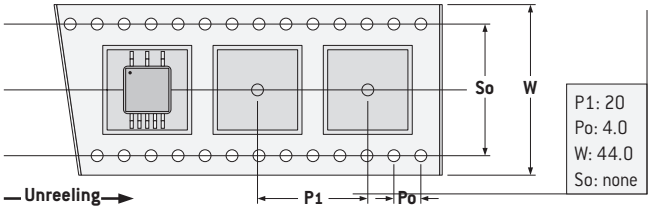


Connections



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 P(A)

- In accordance to 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
- Qualified EPPL
- Open-circuit impedance greater than 4 kΩ over 75 kHz to 1 MHz working frequency
- Frequency range 75 kHz to 1 MHz
- Operating temperature range: –55°C up to +150°C (for 7PA only)
- Weight: < 5 grams

Electrical Data (25°C)

ID Code	Turn ratio 1-3: 4-8	Turn ratio 1-3: 5-7	R_{DC} max. (Ω) 1-3	R_{DC} max. (Ω) 4-8	Primary Inductance (mH) min at 75 kHz-1V	Open Circuit Impedance Min (kΩ)	Operating Temperature range
DBIT 1 7P*	1,4:1	2:1	2	1,6	7 (1-3)	3	–55°C +125°C
DBIT 2 7P*	1:1	1:0,707	2	2,2	7 (1-3)	3	–55°C +125°C
DBIT 3 7P*	1,2:1	1,67:1	2	2	7 (1-3)	3	–55°C +125°C
DBIT 4 7P*	1:2,5	1:1,74	1	2,2	7 (4-8)	3	–55°C +125°C
DBIT 5 7P*	1:2,5	1:1,79	1	2,2	7 (4-8)	3	–55°C +125°C
DBIT 6 7P*	2,3:1	3,2:1	2	1	7 (1-3)	3	–55°C +125°C
DBIT 7 7P*	1,25:1	1,66:1	2	2	7 (1-3)	3	–55°C +125°C
DBIT 8 7P*	1:2,12	1:1,5	1	2,2	7 (4-8)	3	–55°C +125°C
DBIT 1 7PA	1,4:1	2:1	1,23	1,1	7 (1-3)	4	–55°C +150°C
DBIT 2 7PA	1:1	1:0,707	1,23	1,6	7 (1-3)	4	–55°C +150°C
DBIT 3 7PA	1,2:1	1,67:1	1,23	1,4	7 (1-3)	4	–55°C +150°C
DBIT 5 7PA	1:2,5	1:1,79	0,6	1,4	7 (4-8)	4	–55°C +150°C
DBIT 6 7PA	2,3:1	3,2:1	1,23	0,8	7 (1-3)	4	–55°C +150°C
DBIT 7 7PA	1,25:1	1,66:1	1,23	1,25	7 (1-3)	4	–55°C +150°C
DBIT 8 7PA	1:2,12	1:1,5	0,7	1,4	7 (4-8)	4	–55°C +150°C

*** EPPL products - Detail Specifications MSP003**

To Order

DBIT # 7PA

DBIT	#	7	P	A
Range	Part 1 to 8	Case height 7	x = **P** Pins	New version

Notes

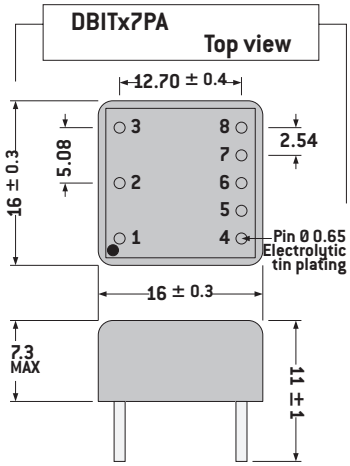
Common mode rejection: 45 dB min.

Dielectric withstanding voltage: 500 V_{RMS}.

Insulation resistance: 1,3 - 4,8 500 V_{DC} >1000 MΩ

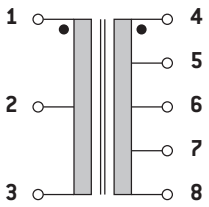
Tolerance ratio ± 3 %.

Typical Dimensions (mm)



Connections

Dot for pin "1"



Marking

yyww:
Date code

HIGH GRADE PRODUCTS

MIL-STD 1553 Interface Transformers
DBIT x 7 P10(A)

- In accordance to 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
- Qualified EPPL
- Open-circuit impedance greater than 4 kΩ over 75 kHz to 1 MHz working frequency
- Frequency range 75 kHz to 1 MHz
- Operating temperature range: –55°C up to +150°C (for 7P10A only)
- Weight: < 5 grams

Electrical Data (25°C)

ID Code	Turn ratio 1-3: 4-8	Turn ratio 1-3: 5-7	R_{DC} max. (Ω) 1-3	R_{DC} max. (Ω) 4-8	Primary Inductance (mH) min at 75 kHz-1V	Open Circuit Impedance Min (kΩ)	Operating Temperature range
DBIT 1 7P10*	1,4:1	2:1	2	1,6	7 (1-3)	3	–55°C +125°C
DBIT 2 7P10*	1:1	1:0,707	2	2,2	7 (1-3)	3	–55°C +125°C
DBIT 3 7P10*	1,2:1	1,67:1	2	2	7 (1-3)	3	–55°C +125°C
DBIT 4 7P10*	1:2,5	1:1,74	1	2	7 (4-8)	3	–55°C +125°C
DBIT 5 7P10*	1:2,5	1:1,79	1	2,2	7 (4-8)	3	–55°C +125°C
DBIT 6 7P10*	2,3:1	3,2:1	2	1	7 (1-3)	3	–55°C +125°C
DBIT 7 7P10*	1,25:1	1,66:1	2	2	7 (1-3)	3	–55°C +125°C
DBIT 8 7P10*	1:2,12	1:1,5	1	2,2	7 (4-8)	3	–55°C +125°C
DBIT 9 7P10*	1:2,38	1:1,666	1	2,2	7 (1-3)	3	–55°C +125°C
DBIT 10 7P10*	1:3,0	1:2,14	1	2,2	7 (4-8)	3	–55°C +125°C
DBIT 1 7P10A	1,4:1	2:1	1,23	1,1	7 (1-3)	4	–55°C +150°C
DBIT 2 7P10A	1:1	1:0,707	1,23	1,6	7 (1-3)	4	–55°C +150°C
DBIT 3 7P10A	1,2:1	1,67:1	1,23	1,4	7 (1-3)	4	–55°C +150°C
DBIT 5 7P10A	1:2,5	1:1,79	0,6	1,4	7 (4-8)	4	–55°C +150°C
DBIT 6 7P10A	2,3:1	3,2:1	1,23	0,8	7 (1-3)	4	–55°C +150°C
DBIT 7 7P10A	1,25:1	1,66:1	1,23	1,25	7 (1-3)	4	–55°C +150°C
DBIT 8 7P10A	1:2,12	1:1,5	0,7	1,4	7 (4-8)	4	–55°C +150°C

*** EPPL products - Detail Specifications MSP003**

To Order

DBIT # 7 P10A

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

Notes

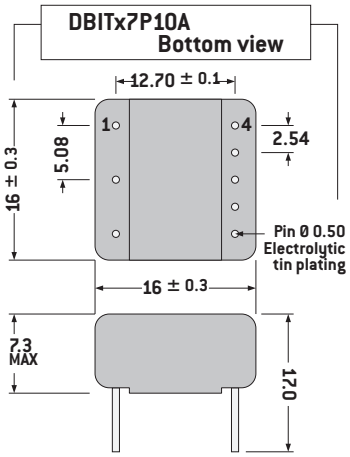
Common mode rejection: 45 dB min.

Dielectric withstanding voltage: 500 V_{RMS}.

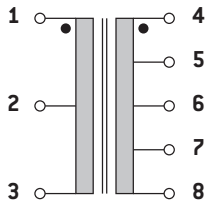
Insulation resistance: 1,3 - 4,8 500 V_{DC} >1000 MΩ

Tolerance ratio ± 3 %.

Typical Dimensions (mm)



Connections



Marking

yyww:
Date code

MIL-STD 1553 Interface Transformers
DBIT x 7 S(A)

- In accordance to 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
- Qualified EPPL
- Open-circuit impedance greater than 4 kΩ over 75 kHz to 1 MHz working frequency
- Frequency range 75 kHz to 1 MHz
- Operating temperature range: –55°C up to +150°C (for 7SA only)
- Weight: < 5 grams

Electrical Data (25°C)

ID Code	Turn ratio 1-3: 4-8	Turn ratio 1-3: 5-7	R_{DC} max (Ω) 1-3	R_{DC} max (Ω) 4-8	Primary Inductance (mH) min 75 kHz-1V	Open Circuit Impedance min (kΩ)	Operating Temperature range
DBIT 1 7S*	1,4:1	2:1	2	1,6	7 (1-3)	3	–55°C +125°C
DBIT 2 7S*	1:1	1:0,707	2	2,2	7 (1-3)	3	–55°C +125°C
DBIT 3 7S*	1,2:1	1,67:1	2	2	7 (1-3)	3	–55°C +125°C
DBIT 4 7S*	1:2,5	1,67:1	2	2	7 (1-3)	3	–55°C +125°C
DBIT 5 7S*	1:2,5	1:1,74	1	2	7 (4-8)	3	–55°C +125°C
DBIT 6 7S*	2,3:1	3,2:1	2	1	7 (1-3)	3	–55°C +125°C
DBIT 7 7S*	1,25:1	1,66:1	2	2	7 (1-3)	3	–55°C +125°C
DBIT 8 7S*	1:2,12	1:1,5	1	2,2	7 (4-8)	3	–55°C +125°C
DBIT 1 7SA	1,4:1	2:1	1,23	1,1	7 (1-3)	4	–55°C +150°C
DBIT 2 7SA	1:1	1:0,707	1,23	1,6	7 (1-3)	4	–55°C +150°C
DBIT 3 7SA	1,2:1	1,67:1	1,23	1,4	7 (1-3)	4	–55°C +150°C
DBIT 5 7SA	1:2,5	1:1,74	0,6	1,4	7 (4-8)	4	–55°C +150°C
DBIT 6 7SA	2,3:1	3,2:1	1,23	0,8	7 (1-3)	4	–55°C +150°C
DBIT 7 7SA	1,25:1	1,66:1	1,23	1,25	7 (1-3)	4	–55°C +150°C
DBIT 8 7SA	1:2,12	1:1,5	0,7	1,4	7 (4-8)	4	–55°C +150°C

*** EPPL products - Detail Specifications MSP003**

Notes

Common mode rejection : 45 dB min.

Dielectric withstanding voltage : 100 V_{RMS}.

Insulation resistance : 1,3 - 4,8
500 V_{DC}
>1000 MΩ

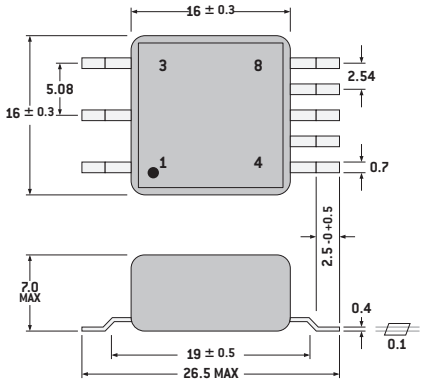
Tolerance ratio ± 3 %.

To Order

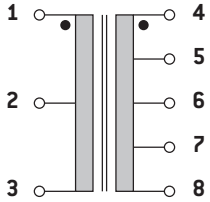
DBIT # 7 SA

DBIT	#	7	x	A
Range	Part 1 to 8	Case height 7	x = **S** SMD	New version

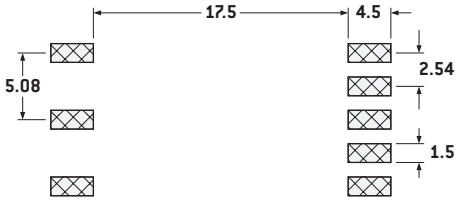
Typical Dimensions (mm)



Connections



PCB Layout (suggested, DBIT x 7 S)

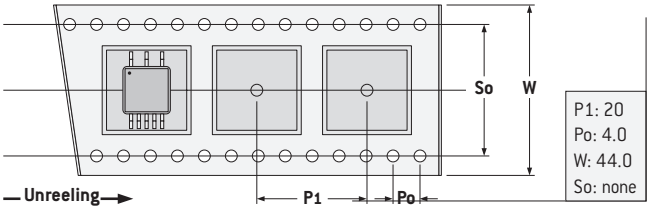


Marking

yyww:
Date code

Packaging

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



HIGH GRADE PRODUCTS

MIL-STD 1553 Interface Transformers
DBIT 5 7 x 400

- In accordance to 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)
- Applied standards: ESCC 3201 generic specification for space products
- 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	R_{DC} max. (Ω) (1-3)	R_{DC} max. (Ω) (4-8)	Primary Inductance (mH) min at 75 kHz-1V
DBIT 5 7x400	1: 2.5	1: 1.79	1	3.5	$L_{P\,(4-8)}$ 8.5

Notes

Common mode rejection: 45 dB min.

Dielectric withstanding voltage: 500 V_{RMS}.

Insulation resistance: 1000 MΩ min - 500 V_{DC}

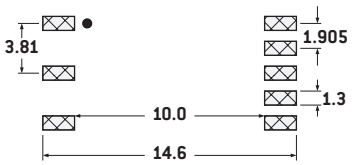
Tolerance ratio ± 2 %.

To Order

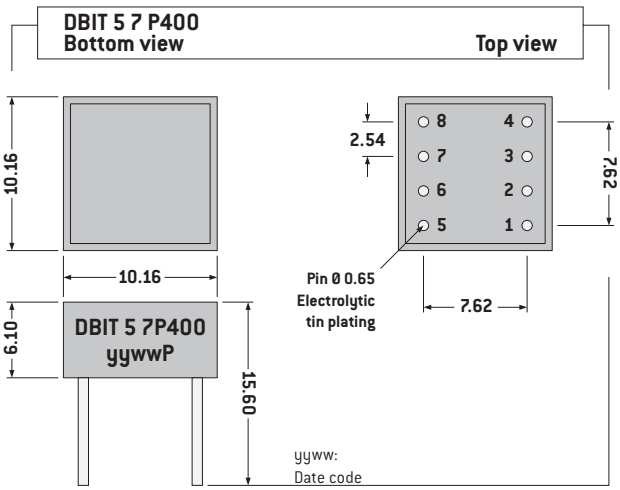
DBIT 5 7x400

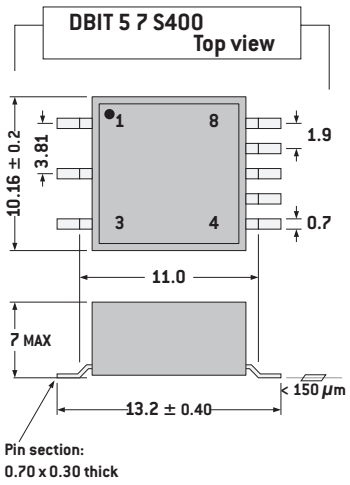
DBIT	5	7	P400
Range	Code turn ratio	Case height 7	x = **P** for Pin through hole x = **S** for SMD

PCB Layout
(suggested, DBIT 5 7 S400)



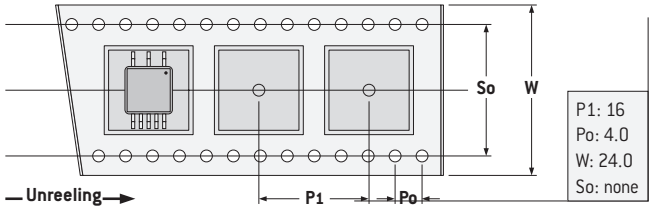
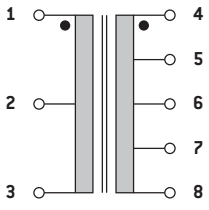
Typical Dimensions (mm)





Packaging

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



Connections