

Directional Couplers

DBTC-7-152+

DBTC-7-152L+

50Ω, 7dB Coupling, 10 to 1500 MHz

Maximum Ratings

| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |

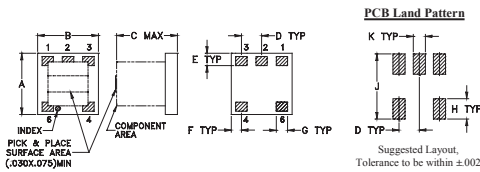
Permanent damage may occur if any of these limits are exceeded.

Pin Connections

| | |
|----------------------|---|
| INPUT | 3 |
| OUTPUT | 4 |
| COUPLED | 1 |
| GROUND | 2 |
| ISOLATE (DO NOT USE) | 6 |

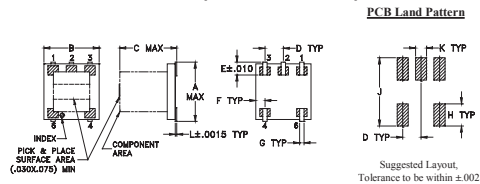
Outline Drawing / Dimensions (inch / mm)

AT790-1 (DBTC-7-152+)



| | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|-------|
| A | B | C | D | E | F | G | H | J | K | wt |
| .150 | .150 | .150 | .050 | .030 | .025 | .028 | .050 | .160 | .030 | grams |
| 3.81 | 3.81 | 3.81 | 1.27 | 0.76 | 0.64 | 0.71 | 1.27 | 4.06 | 0.76 | 0.10 |

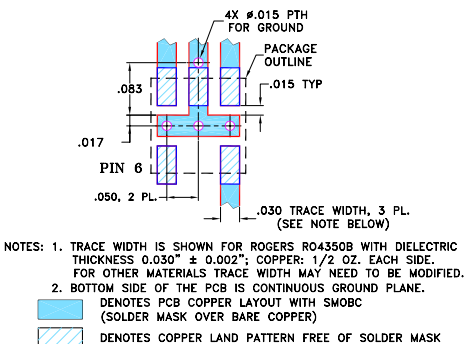
AT1030 (DBTC-7-152L+)



| | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|-------|
| A | B | C | D | E | F | G | H | J | K | L | wt |
| .166 | .150 | .155 | .050 | .037 | .025 | .012 | .060 | .184 | .030 | .004 | grams |
| 4.22 | 3.81 | 3.94 | 1.27 | 0.94 | 0.64 | 0.30 | 1.52 | 4.67 | 0.76 | 0.10 | 0.10 |

Demo Board MCL P/N: TB-278

Suggested PCB Layout (PL-150)



Features

- very flat coupling
- very broadband, multi octave
- temperature stable, LTCC base
- all welded construction
- leads attached for better solderability
- micro miniature coupler
- aqueous washable
- protected by US Patents 6,140,887 & 6,784,521

Applications

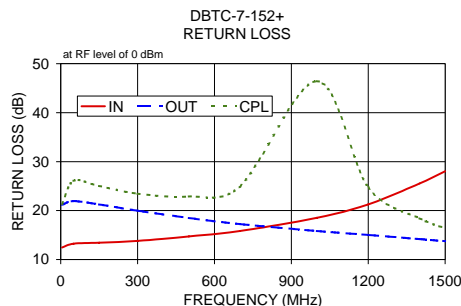
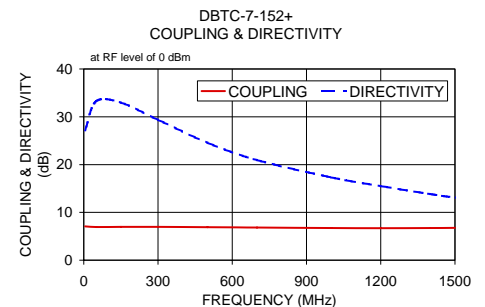
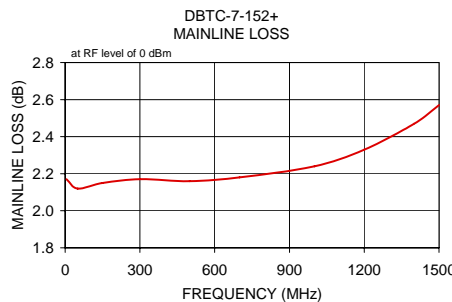
- VHF/UHF transmitters
- cellular

Electrical Specifications

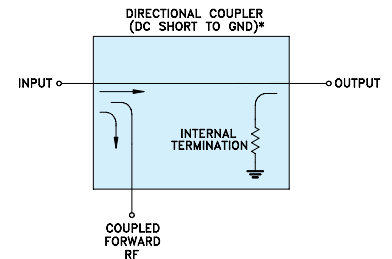
| FREQ. (MHz) | COUPLING (dB) | | MAINLINE LOSS (dB) | | DIRECTIVITY (dB) | | VSWR (:1) | POWER INPUT (W) |
|-------------|---------------|---------------|--------------------|------|------------------|------|-----------|-----------------|
| | Nom. | Max. Flatness | Typ. | Max. | Typ. | Min. | | |
| 10-1500 | 7.0±0.5 | ±0.5 | | | | | | |
| 10-100 | | | 2.2 | 2.7 | 32 | 20 | 1.4 | 0.5 |
| 100-750 | | | 2.2 | 2.6 | 29 | 15 | 1.4 | 1.0 |
| 750-1500 | | | 2.3 | 3.2 | 16 | 9 | 1.4 | 1.0 |

Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) | Return Loss (dB) | | |
|-----------------|---------------------------|----------------------|------------------|------------------|-------|-------|
| | | | | In | Out | Cpl |
| 5.00 | 2.17 | 7.07 | 27.17 | 12.45 | 21.18 | 21.33 |
| 50.00 | 2.12 | 6.92 | 33.24 | 13.24 | 21.93 | 26.08 |
| 150.00 | 2.15 | 6.97 | 32.95 | 13.44 | 21.26 | 25.04 |
| 300.00 | 2.17 | 6.98 | 29.37 | 13.82 | 19.97 | 23.43 |
| 500.00 | 2.16 | 6.91 | 24.56 | 14.71 | 18.49 | 22.88 |
| 700.00 | 2.18 | 6.84 | 20.96 | 15.84 | 17.26 | 24.92 |
| 1000.00 | 2.24 | 6.72 | 17.31 | 18.52 | 15.82 | 46.44 |
| 1200.00 | 2.33 | 6.69 | 15.48 | 21.27 | 15.02 | 24.76 |
| 1400.00 | 2.47 | 6.72 | 13.83 | 25.55 | 14.19 | 18.44 |
| 1500.00 | 2.57 | 6.76 | 13.09 | 28.03 | 13.74 | 16.40 |



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

For detailed performance specs & shopping online see web site



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Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuit's standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp.

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ED-12526
DBTC-7-152+
DY/RS/CP/AM
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