

20 GHz to 50 GHz Absorptive Voltage Variable Attenuator, 40 dB, Field Replaceable 2.4mm

The FMAT2004 is an Absorptive Analog Voltage Variable Attenuator module that operates across a wide frequency range from 20 GHz to 50 GHz and supports a single voltage control of -5V to 0V with 30 mA of DC Current. The 50 ohm circuit design uses series-shunt reflective topology and offers an attenuation range from 0 to 40 dB typ across the full frequency band. Impressive typical performance includes 4 dB insertion loss, a P0.1 dB compression point of +24 dBm, input IP3 of 32 dBm, and a maximum RF input power level of +24 dBm. The low profile miniature pin package is aluminum with gold plating and supports field replaceable 2.4mm RF connectors and solder pins for DC control. With the connectors removed, the package can be drop mounted onto a PWB. The module has an operational temperature range from -40°C to +85°C and is guaranteed to meet a series of environmental test conditions for Altitude, Vibration, Humidity, and Shock.



Features:

- Absorptive Voltage Controlled Attenuator
- 20 GHz to 50 GHz
- Attenuation Range 0 to 40 dB typ
- Insertion Loss 4 dB typ
- P0.1 dB Compression Power +24 dBm typ
- Input IP3 32 dBm typ
- Max RF Input Power +24 dBm
- Control Voltage -5V to 0V
- 50 Ohm Circuit Design uses Series Topology
- Field Replaceable 2.4mm Female RF Connectors
- Solder Pins for DC Control
- Operational Temperature Range -40°C to +85°C
- Rugged and Compact Aluminum Gold Plated Package Design
- Guaranteed Environmental Test Conditions Altitude, Vibration, Humidity, Shock
- Single Control Operation

Electrical Specifications (Values at +25°C, sea level)

Description	Min	Typ	Max	Unit
Frequency Range	20		50	GHz
Attenuation Range		40		dB
Insertion Loss		4	5	dB
VSWR		1.7:1	2:1	
RF Input Power		+24	+24	dBm
Input at 0.1 dB Compression Point		+24		dBm
Control Voltage		-5 to 0		Volts
DC Current		30		mA
Impedance		50		Ohms
Input IP3		32		dBm
IL Temperature Coefficient		0.05		dB/deg C

Absolute Maximum Rating

Parameter	Rating
Control Voltage	-5-0V
RF Input power	+30dBm



ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

Mechanical Specifications

Size	
Length	0.59 in [14.99 mm]
Width	0.24 in [6.1 mm]
Height	0.51 in [12.95 mm]
Weight	0.002 lbs [0.91 g]
Input Connector	Field Replaceable 2.4mm Female
Output Connector	Field Replaceable 2.4mm Female
Power and Control	Solder Pin

Applications:

- Test & Measurement
- Military and Commercial Communications
- Military Electronic Systems
- Research & Development

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sales@fairviewmicrowave.com

Environmental Specifications

Temperature

Operating Range -40 to +85 deg C
Storage Range -50 to +105 deg C

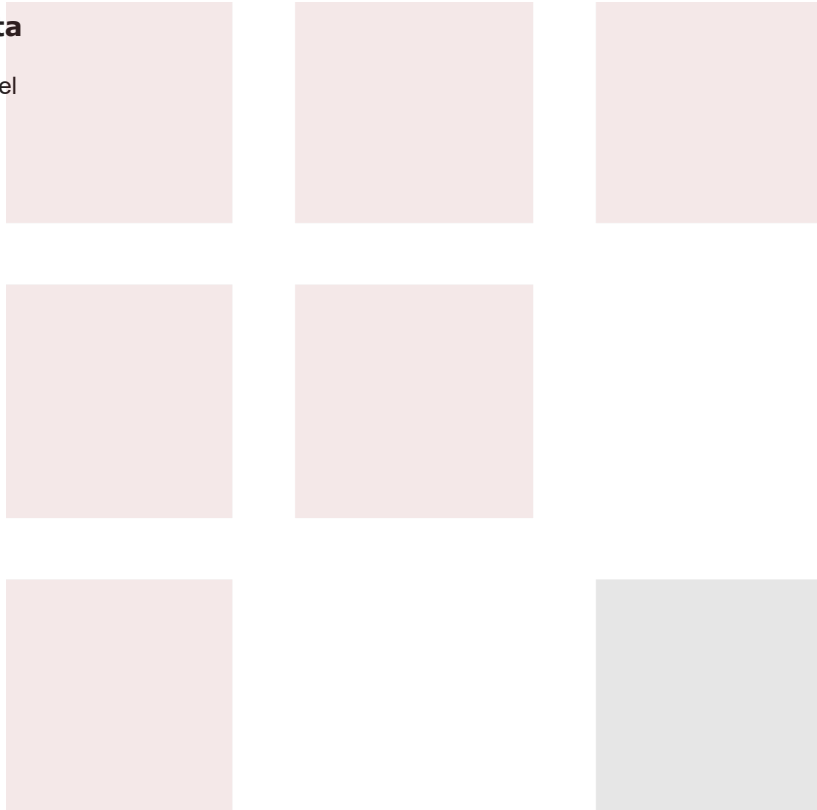
Humidity 100% RH at 35°C, 95% RH at 40°C
Shock 20G for 11 msec half sine wave, 3 axis both directions
Vibration 25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Altitude 30,000 Feet

Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

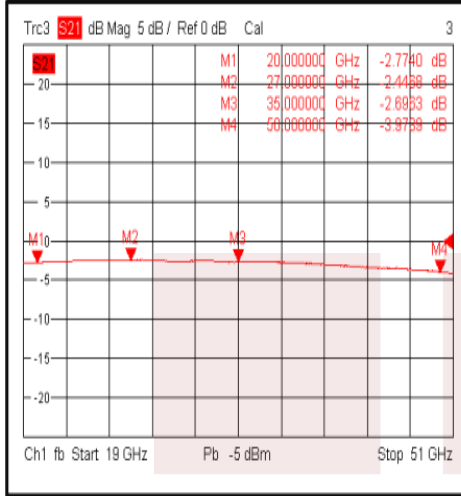
Notes:

- Values at 25 °C, sea level

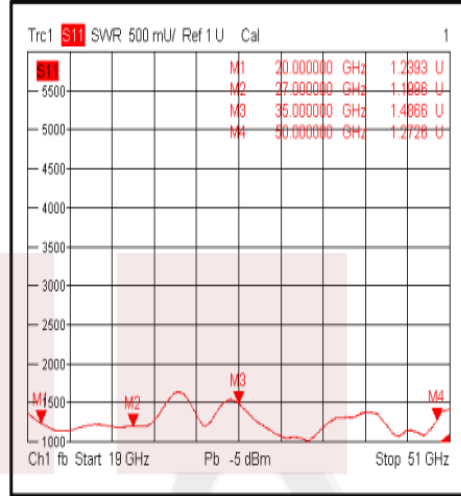


Typical Performance Data

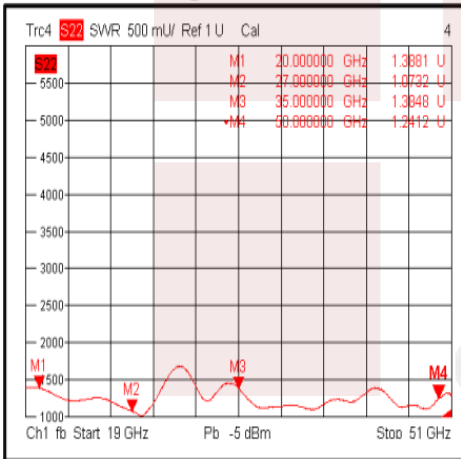
Insertion Loss @ +25°C



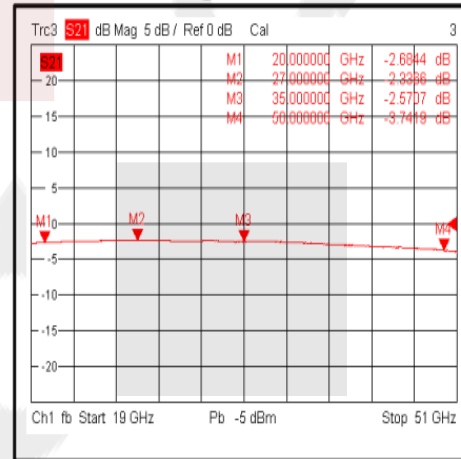
Input VSWR @ +25°C



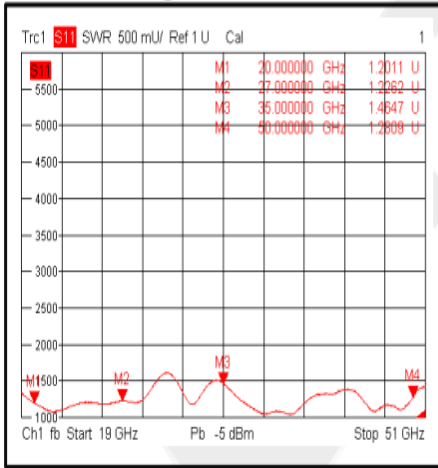
Output VSWR @ +25°C



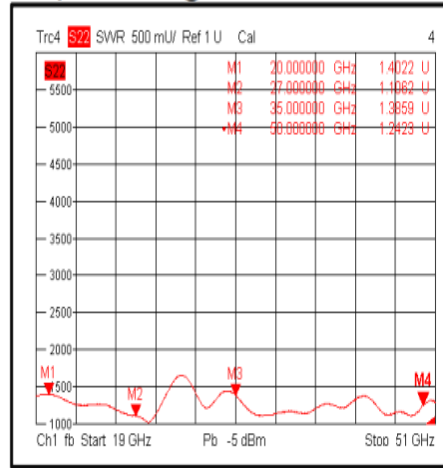
Insertion Loss @ -40°C



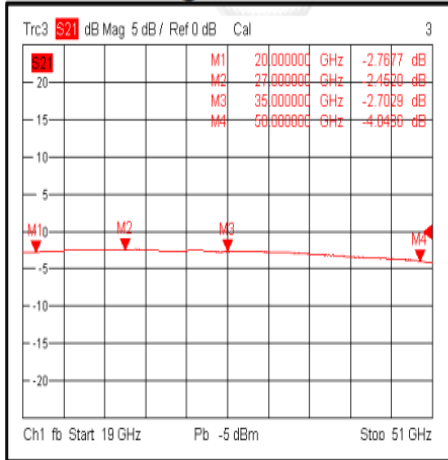
Input VSWR @-40°C



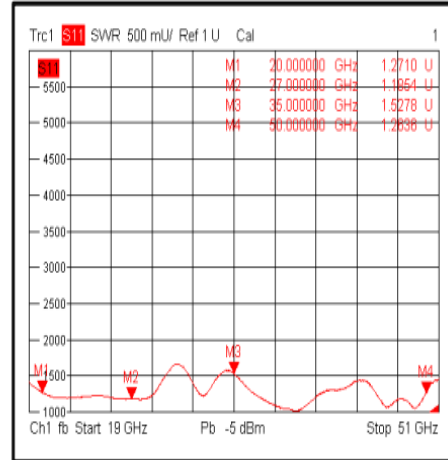
Output VSWR @-40°C



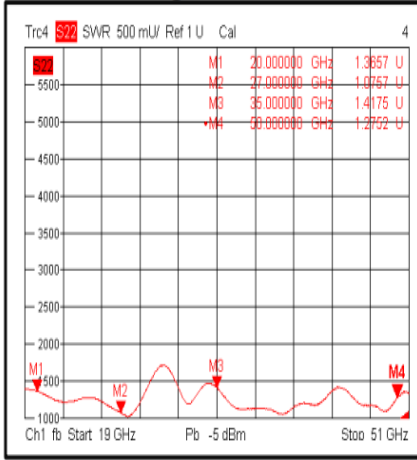
Insertion Loss @+85°C



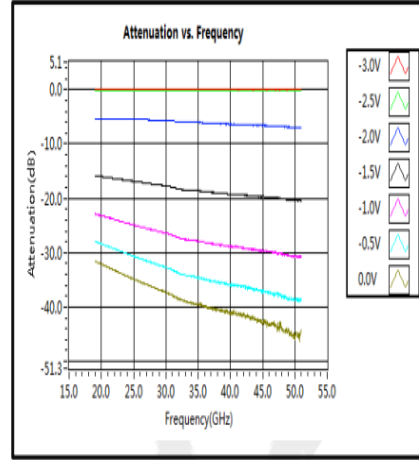
Input VSWR @+85°C



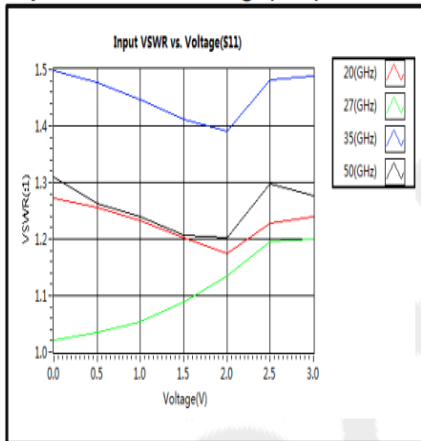
Output VSWR @+85°C



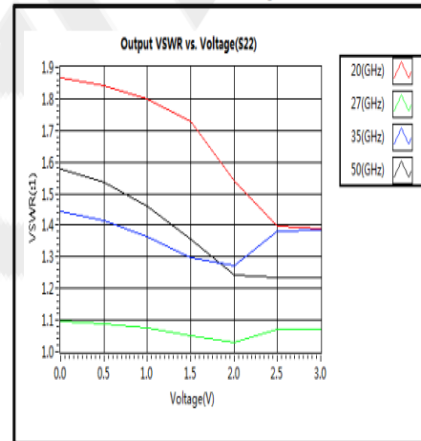
Attenuation vs. Frequency



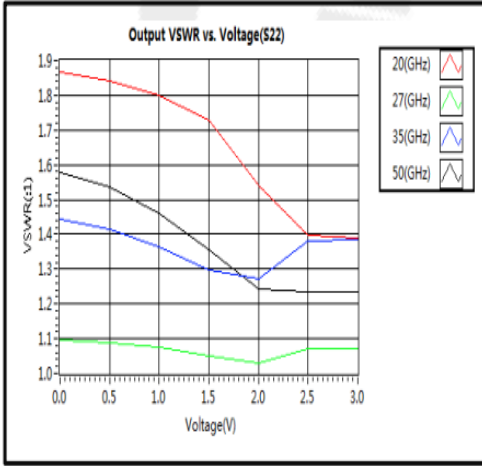
Input VSWR vs. Voltage(S11)



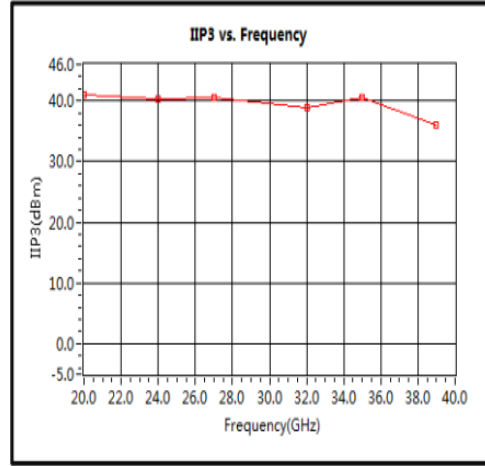
Output VSWR vs. Voltage(S22)



Phase Shift vs. Frequency



IIP3

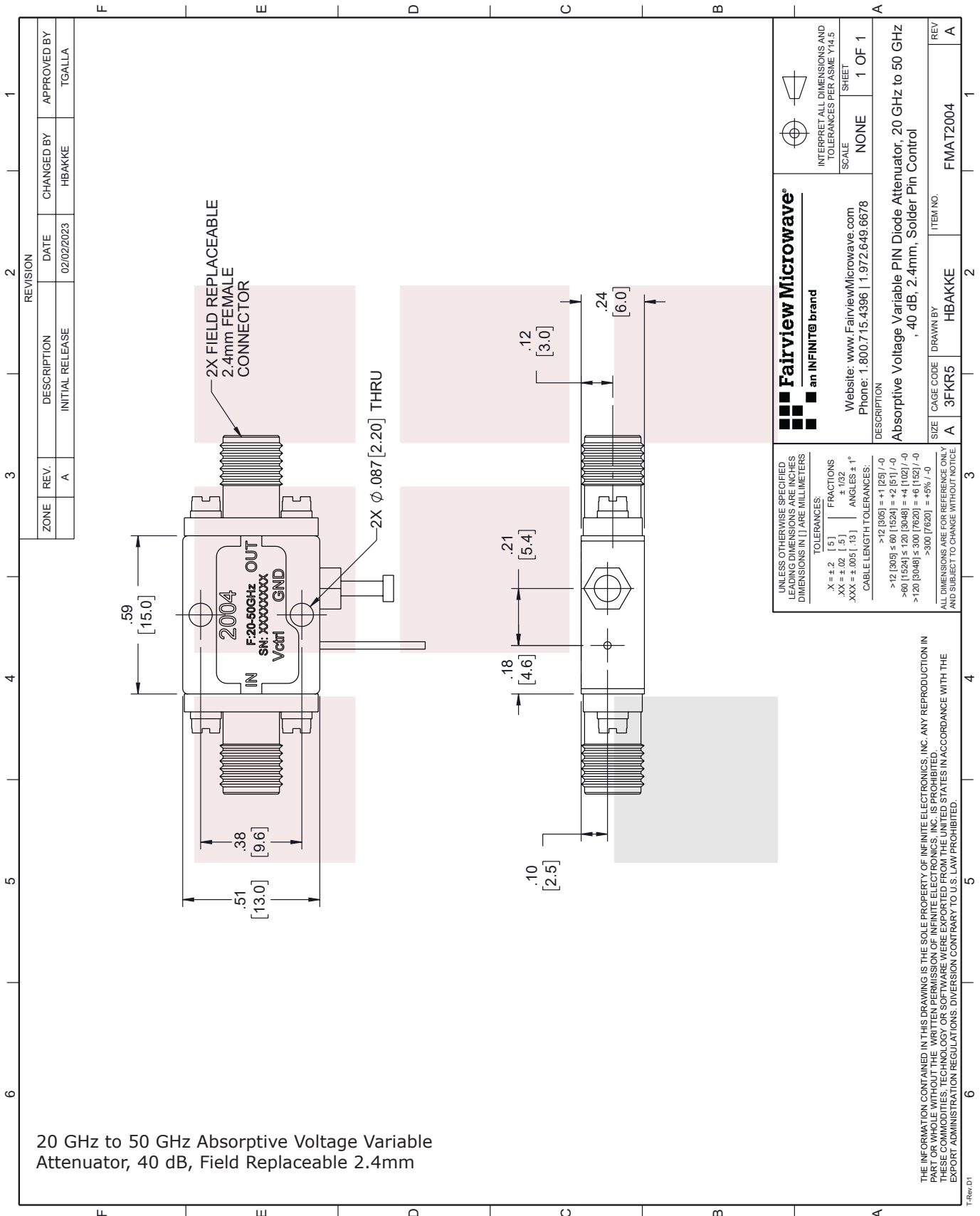


20 GHz to 50 GHz Absorptive Voltage Variable Attenuator, 40 dB, Field Replaceable 2.4mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [20 GHz to 50 GHz Absorptive Voltage Variable Attenuator, 40 dB, Field Replaceable 2.4mm FMAT2004](https://www.fairviewmicrowave.com/40db-voltage-variable-24-dbm-attenuator-pin-diode-50-ghz-fmat2004-p.aspx)

URL: <https://www.fairviewmicrowave.com/40db-voltage-variable-24-dbm-attenuator-pin-diode-50-ghz-fmat2004-p.aspx>

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ZONE	REV.	DESCRIPTION	INITIAL RELEASE	
	A			TOALLA

Fairview Microwave an INFINIT [®] brand		INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5 SCALE: NONE SHEET: 1 OF 1	
Website: www.FairviewMicrowave.com Phone: 1.800.715.4396 1.972.649.6678		DESCRIPTION: Absorptive Voltage Variable PIN Diode Attenuator, 20 GHz to 50 GHz, 40 dB, 2.4mm, Solder Pin Control	
SIZE: A	CAGE CODE: 3FKR5	DRAWN BY: HBAKKE	ITEM NO.: FMAT2004
REV: A			

UNLESS OTHERWISE SPECIFIED, LEADING DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE MILLIMETERS.

TOLERANCES:
 .X = ±.2 [5] | FRACTIONS ±.132 | ANGLES ± 1°
 .XX = ±.02 [.5] | .XXX = ±.005 [.13]
 CABLE LENGTH TOLERANCES:
 >12 [305] = +1 [25] / -0
 >12 [305] ≤ 60 [1524] = +2 [51] / -0
 >60 [1524] ≤ 120 [3048] = +4 [102] / -0
 >120 [3048] ≤ 300 [7620] = +6 [152] / -0
 >300 [7620] = +.5% / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE.

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