

8 GHz to 12 GHz Voltage Control Attenuator, 30 dB, Field Replaceable SMA

The FMAT2007 is an Absorptive Analog Voltage Variable Attenuator module that operates across a frequency range from 8 GHz to 12 GHz and supports a single voltage control of 0V to 10V with 15 mA of DC Current. The 50 ohm circuit design uses an absorptive topology and offers an attenuation range from 0 to 30 dB across the full frequency band. Impressive typical performance includes 1.7 dB insertion loss, a P0.1dB compression point of +27 dBm, input IP3 of 45 dBm, switching speed of 2.5 usec, and a maximum RF input power level of +30 dBm. The low profile miniature pin package is aluminum with gold plating and supports field replaceable SMA 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.

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

Description	Min	Typ	Max	Unit
Frequency Range	8		12	GHz
Attenuation Range		30		dB
Insertion Loss		1.7	2	dB
VSWR		1.5:1	1.8:1	
RF Input Power		+30	+30	dBm
Input at 0.1 dB Compression Point		+27		dBm
Switching Speed			2.5	us
Control Voltage		0 to 10		Volts
DC Current		15		mA
Impedance		50		Ohms
Input IP3		45		dBm
IL Temperature Coefficient		0.05		dB/deg C

Absolute Maximum Rating

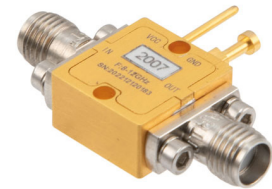
Parameter	Rating
Control Voltage	0~ 13V
RF Input power	+30dBm



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

Mechanical Specifications

Size	
Length	0.55 in [13.97 mm]
Width	0.28 in [7.11 mm]
Height	0.51 in [12.95 mm]
Weight	0.002 lbs [0.91 g]
Input Connector	Field Replaceable SMA Female
Output Connector	Field Replaceable SMA Female



Features:

- Absorptive Voltage Controlled Attenuator
- 8 GHz to 12 GHz
- Attenuation Range 30 dB typ
- Insertion Loss 1.7 dB typ
- P0.1 dB Compression Power +27 dBm
- Input IP3 45 dBm typ
- Switching Speed 2.5 usec typ
- Max RF Input Power +30 dBm
- Control Voltage 0V to 10V
- 50 Ohm Circuit Design uses an absorptive topology
- Field Replaceable SMA Female RF Connectors
- Solder Pins for DC Control
- Operational Temperature Range -40°C to +85°C
- Rugged and Compact Aluminum Gold Plated Package Design
- Environmental Test Conditions Altitude, Vibration, Humidity, Shock
- Single Control Voltage

Applications:

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

Fairview Microwave
 301 Leora Ln., Suite 100
 Lewisville, TX 75056
 Tel: 1-800-715-4396 / (972) 649-6678
 Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

Power and Control

Solder Pin

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

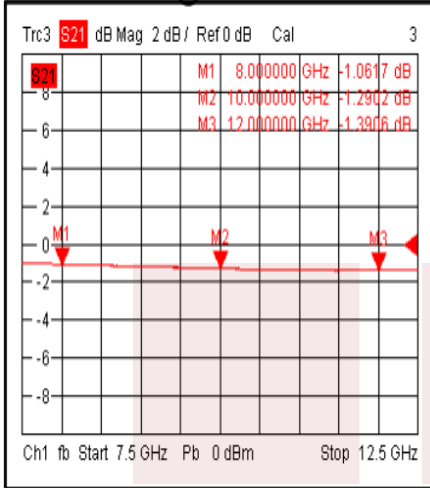
Notes:

- Values at 25 °C, sea level

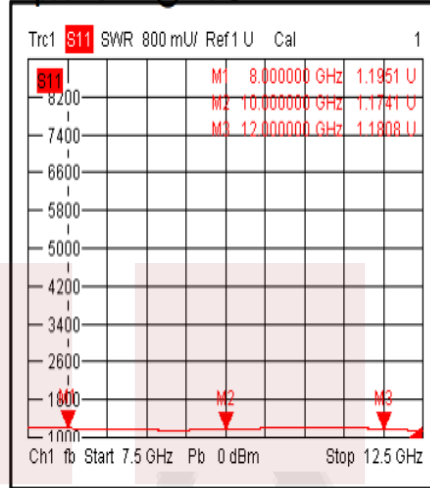


Typical Performance Data

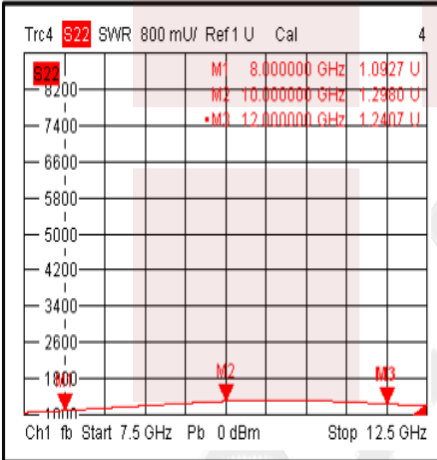
Insertion Loss @+25°C



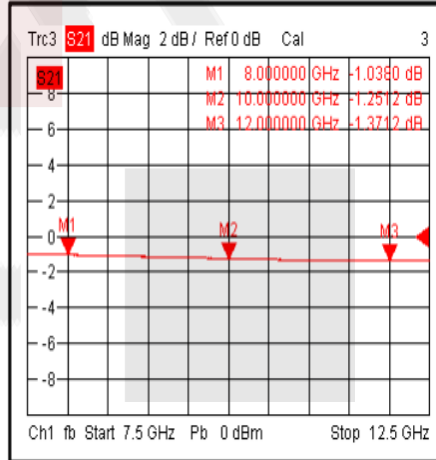
Input VSWR @+25°C



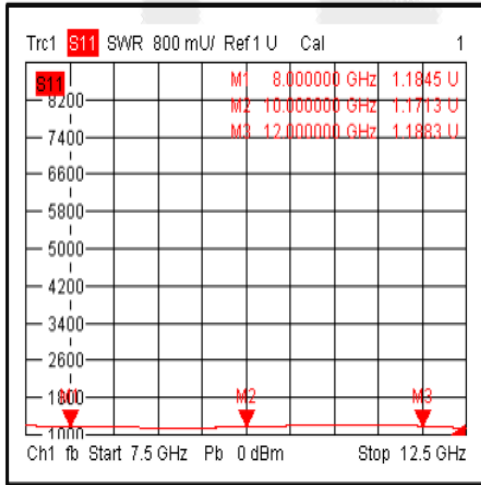
Output VSWR @+25°C



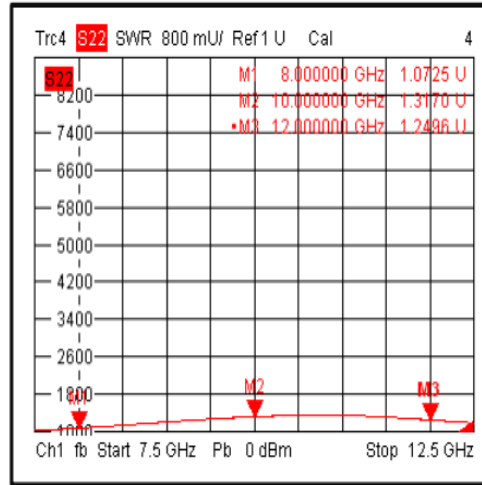
Insertion Loss @-40°C



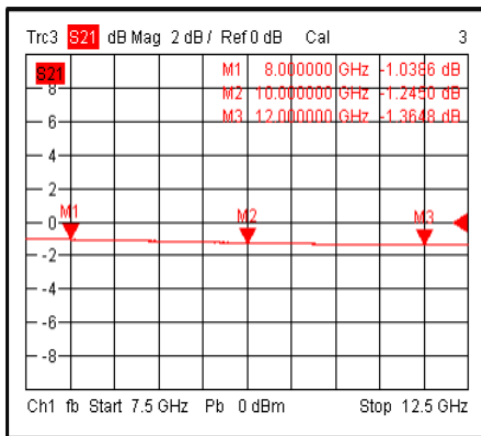
Input VSWR @-40°C



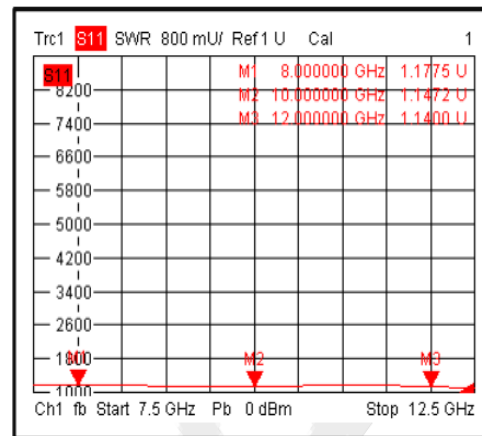
Output VSWR @-40°C



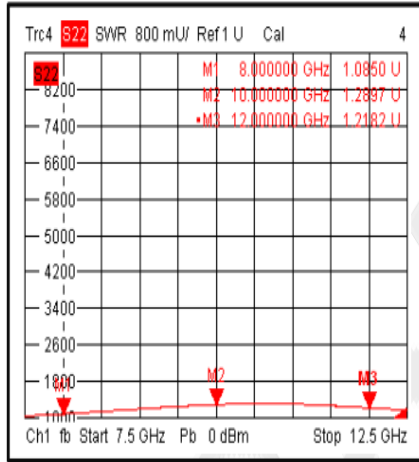
Insertion Loss @+85°C



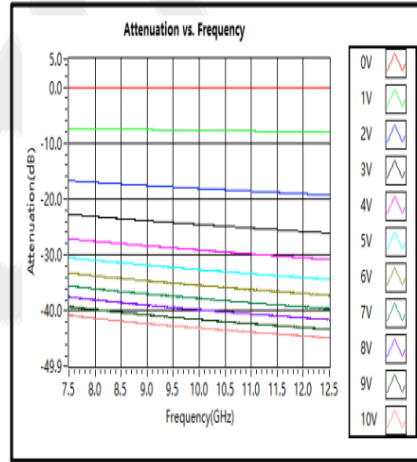
Input VSWR @+85°C



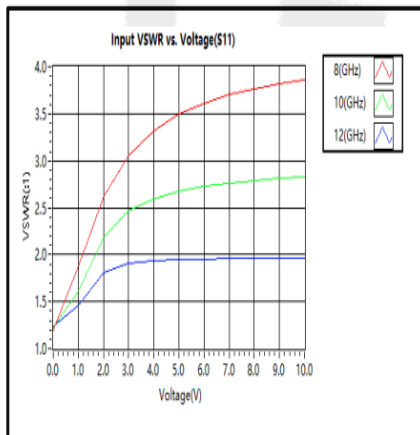
Output VSWR @+85°C



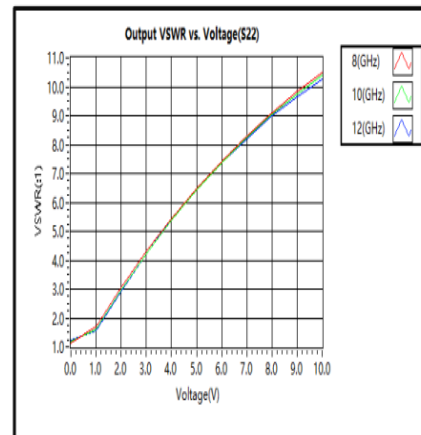
Attenuation vs. Frequency



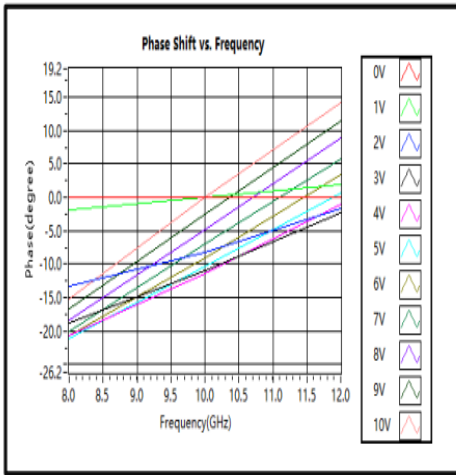
VSWR vs. Voltage (S11)



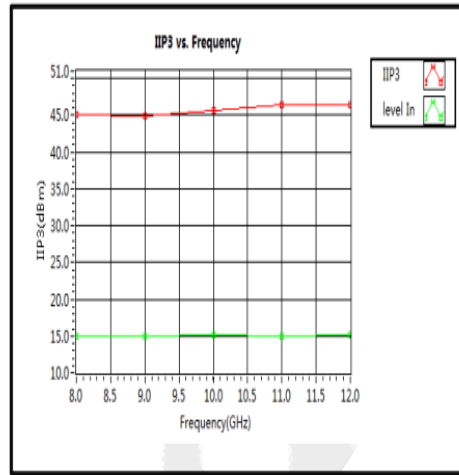
VSWR vs. Voltage (S22)



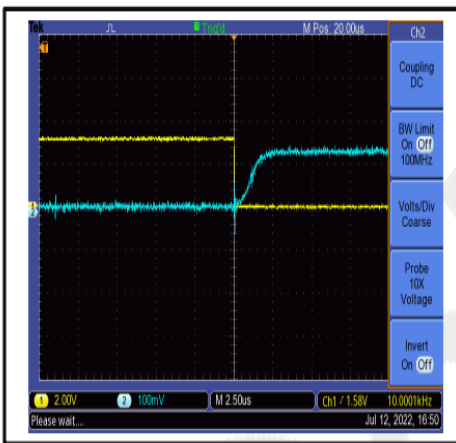
Phase Shift vs. Frequency



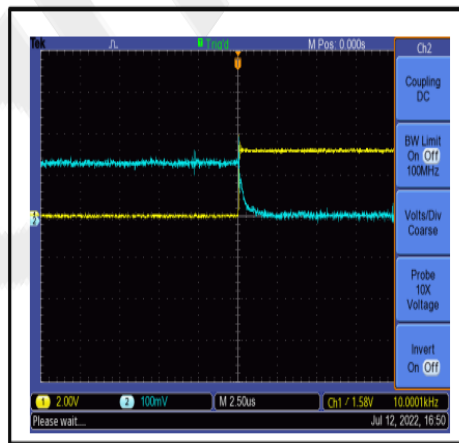
IIP3



Speed



Speed

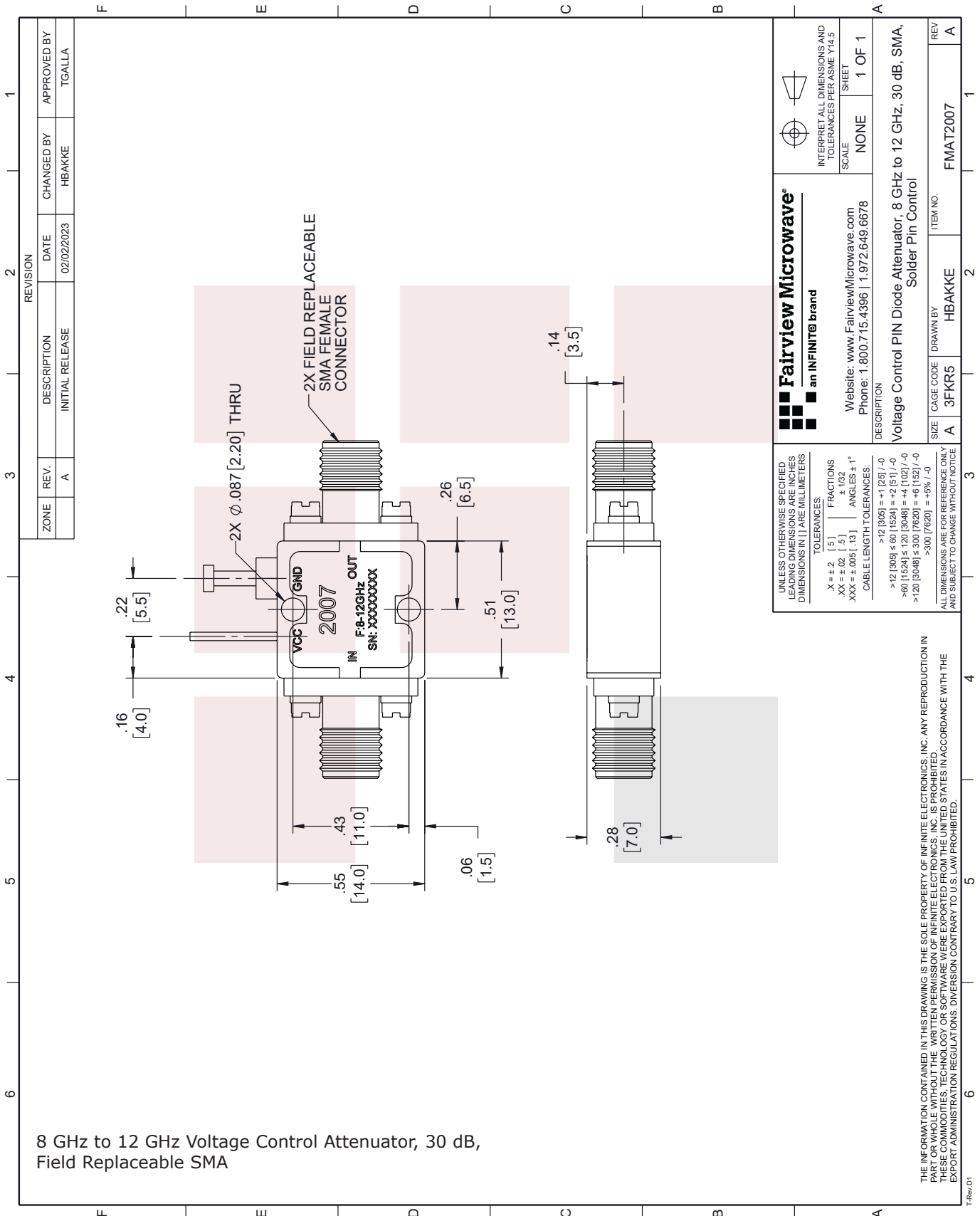


8 GHz to 12 GHz Voltage Control Attenuator, 30 dB, Field Replaceable SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [8 GHz to 12 GHz Voltage Control Attenuator, 30 dB, Field Replaceable SMA FMAT2007](https://www.fairviewmicrowave.com/0db-voltage-variable-30-dbm-attenuator-pin-diode-12-ghz-fmat2007-p.aspx)

URL: <https://www.fairviewmicrowave.com/0db-voltage-variable-30-dbm-attenuator-pin-diode-12-ghz-fmat2007-p.aspx>

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8 GHz to 12 GHz Voltage Control Attenuator, 30 dB,
Field Replaceable SMA

REVISION		DATE	CHANGED BY	APPROVED BY
ZONE	REV.	DESCRIPTION	INITIAL RELEASE	
	A			TOALLA

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Phone: 1.800.715.4396 | 1.972.649.6678

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5
SCALE: NONE SHEET: 1 OF 1

DESCRIPTION:
Voltage Control PIN Diode Attenuator, 8 GHz to 12 GHz, 30 dB, SMA, Solder Pin Control

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	3FKR5	HBAKKE	FMAT2007	A

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

TOLERANCES:
 .X = ±.2 [5] FRACTIONS
 .XX = ±.02 [.5] ±.132 ANGLES ± 1°
 .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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