

Advanced Control Components' line of switched-bit PIN diode digital attenuators offers precision, reliability, and repeatability for the most demanding applications. The AT series digital attenuators are available in convenient binary 4-, 5-, and 6-bit configurations with 0.5dB resolution and up to 63dB total attenuation. The attenuators require only a single +5V DC power supply and feature TTL-compatible control logic. All switches incorporate DC blocks at the RF ports. Standard screened devices incorporate epoxy sealed lids and undergo a stringent yet cost effective screening cycle. The attenuators are also available with hermetic seal and high-rel screening for mil and space applications.



### Applications:

- EW Systems
- Communications Systems
- Automatic Gain Control
- Test Equipment
- Electronic Simulators
- Leveling Circuits

Frequency Range	Part Number	Type	Total Attenuation			Insertion Loss		VSWR (max)
			(dB)	LSB (dB)	MSB (dB)	(dB max)		
1 – 2 GHz	ATL4A	4-BIT	7.5	0.5	4	2.5	1.5	
	ATL4B	4-BIT	15	1	8	2.5	1.5	
	ATL4C	4-BIT	30	2	16	2.5	1.5	
	ATL4D	4-BIT	60	4	32	2.5	1.5	
	ATL5A	5-BIT	15.5	0.5	8	2.8	1.5	
	ATL5B	5-BIT	31	1	16	2.8	1.5	
	ATL5C	5-BIT	62	2	32	2.8	1.5	
	ATL6A	6-BIT	31.5	0.5	16	3.3	1.6	
	ATL6B	6-BIT	63	1	32	3.3	1.8	
	2 – 4 GHz	ATS4A	4-BIT	7.5	0.5	4	2.9	1.6
ATS4B		4-BIT	15	1	8	2.9	1.6	
ATS4C		4-BIT	30	2	16	2.9	1.6	
ATS4D		4-BIT	60	4	32	2.9	1.6	
ATS5A		5-BIT	15.5	0.5	8	3.1	1.6	
ATS5B		5-BIT	31	1	16	3.1	1.6	
ATS5C		5-BIT	62	2	32	3.1	1.6	
ATS6A		6-BIT	31.5	0.5	16	3.7	1.7	
ATS6B		6-BIT	63	1	32	3.7	1.7	

CONTROL LOGIC TABLE							
Part Number	E1	E2	E3	E4	E5	E6	
ATL4A / ATS4A	0.5dB	1dB	2dB	4dB	N/C	N/C	
ATL4B / ATS4B	1dB	2dB	4dB	8dB	N/C	N/C	
ATL4C / ATS4C	2dB	4dB	8dB	16dB	N/C	N/C	
ATL4D / ATS4D	4dB	8dB	16dB	32dB	N/C	N/C	
ATL5A / ATS5A	0.5dB	1dB	2dB	4dB	8dB	N/C	
ATL5B / ATS5B	1dB	2dB	4dB	8dB	16dB	N/C	
ATL5C / ATS5C	2dB	4dB	8dB	16dB	32dB	N/C	
ATL6A / ATS6A	0.5dB	1dB	2dB	4dB	8dB	16dB	
ATL6B / ATS6B	1dB	2dB	4dB	8dB	16dB	32dB	

Attenuation Accuracy: +/-0.4dB (0-20dB attenuation)  
 +/-2% (above 20dB attenuation)  
 Attenuation Flatness: +/-0.5dB max  
 Logic Control: TTL 0 = Low Loss  
 TTL 1 = Attenuation



**ADDITIONAL ELECTRICAL SPECIFICATIONS:**

DC Bias: +5V +/-0.5V @ 130mA max (4-Bit models)  
 160mA max (5-Bit models)  
 190mA max (6-Bit models)  
 Switching Speed: 250nsec max (50%TTL-90%RF)  
 75nsec max (50%TTL-10%RF)  
 175nsec max (10%RF-90%RF)  
 25nsec max (90%RF-10%RF)  
 Operating RF Power: 1W CW max

**ENVIRONMENTAL SPECIFICATIONS:**

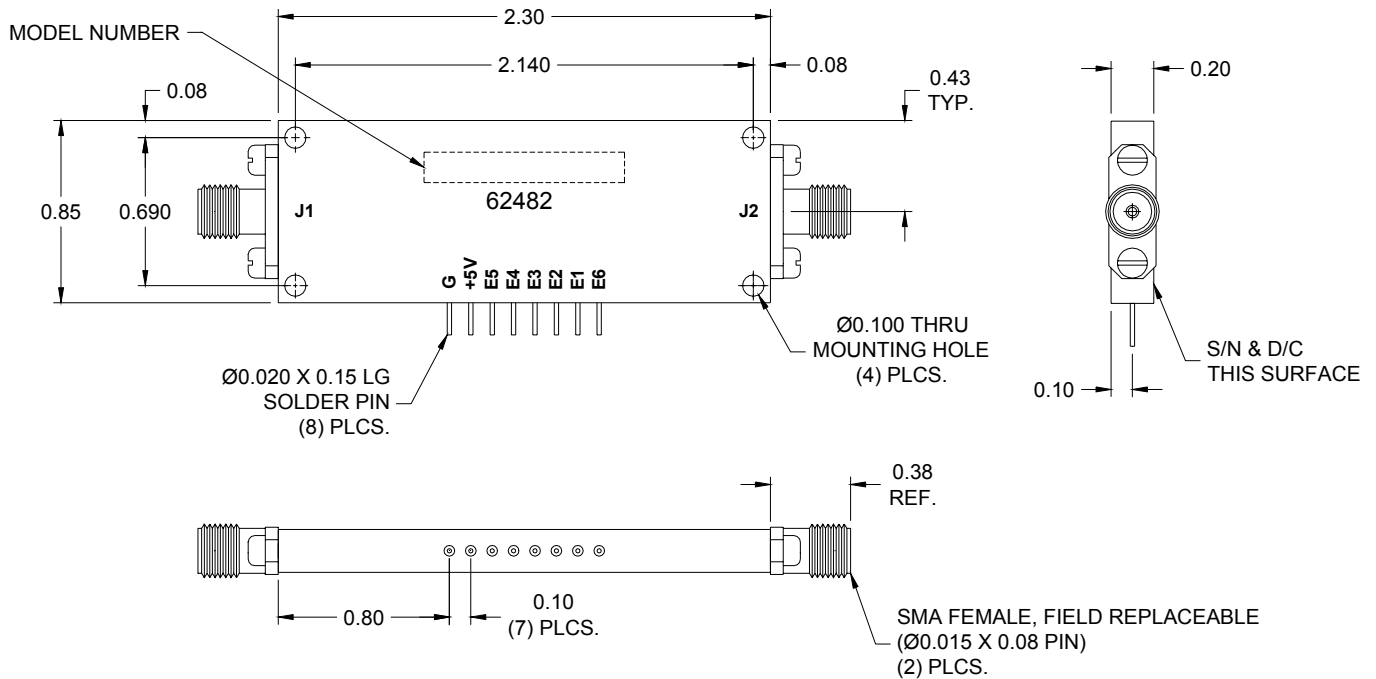
MIL-E-5400, MIL-STD-202, MIL-E-16400  
 Operating Temp: -55°C to +85°C  
 Storage Temp: -65°C to +125°C  
 Humidity: MIL-STD-202F, M103, Cond B  
 Shock: MIL-STD-202F, M213, Cond B  
 Altitude: MIL-STD-202F, M105, Cond B  
 Vibration: MIL-STD-202F, M204, Cond B  
 Thermal Shock: MIL-STD-202F, M107, Cond A  
 Temperature Cycle: MIL-STD-202F, M105C, Cond D

**MECHANICAL SPECIFICATIONS:**

Case Style: AT Outline  
 Finish: Gold plate per MIL-G-45204  
 Connectors: SMA Female per MIL-C-39012  
 Bias & Control Pins: ø0.02" x 0.15" long  
 Weight: 19g max  
 Mounting: ø0.10" through holes (4) places

**SCREENING :**

Standard Screening:  
 Internal Visual per MIL-STD-883, Method 2017  
 Temperature Cycle: -65°C to +100°C, 10 cycles  
Optional High-Rel Screening (Ref MIL-PRF-38534):  
 Internal Visual per MIL-STD-883, Method 2017  
 Stabilization Bake per MIL-STD-883, Method 1008  
 Temperature Cycle per MIL-STD-883, Method 1010  
 Constant Acceleration per MIL-STD-883, Method 2001  
 Burn-in per MIL-STD-883, Method 1015  
 Leak Test per MIL-STD-883, Method 1014  
 External Visual per MIL-STD-883, Method 2009



**OUTLINE CASE STYLE AT**

**OPTIONS:**

- Other frequency ranges available
- Reversed logic
- Available without SMA connectors for drop-in applications
- Hermetic seal (Add "H" to part number)
- Supply voltage options: +12V, +15V
- Video transient suppression
- GPO connectors
- ECL logic inputs
- Other attenuation BIT values and ranges available
- Phase free performance
- Unit-to-unit phase and amplitude tracking

\* Contact the factory for price and delivery or to discuss custom requirements

AT-0205