



ATA7600D1

5.0V 10 Gb/s TIA

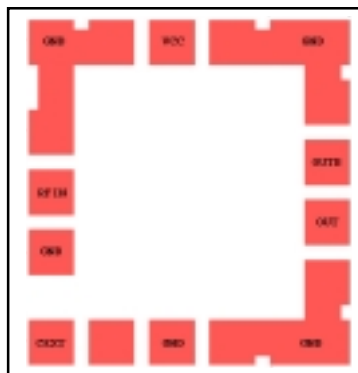
Advanced Product Information - Rev 1

FEATURES

- 10 Gb/s Differential Output TIA
- InGaP HBT Technology
- <500 mW Power dissipation
- Single Power Supply
- Low Group Delay
- Wide Bandwidth/High Gain
- Low Noise

APPLICATIONS

- SONET OC-192/SDH STM-64
- 10 Gb/s DWDM
- 10 Gb/s Datacom
- Wideband Gain Block



D1

Description

The ATA7600D1 is a single supply, low power consumption, differential output 10 Gb/s transimpedance amplifier. The ATA7600D1 is ideally suited for DWDM applications that require low group delay, low power dissipation, and exceptional gain flatness.

Electrical Characterisitcs ($V_{DD} = +5.0V \pm 5\%$, $T_A = 25^\circ C$, $C_{DIODE} + C_{STRAY} = 0.3pF$)

PARAMETER	MIN	TYP	MAX	UNIT
Small Signal Differential Transresistance ($R_L = 100\Omega$)	1250	-	-	Ω
Bandwidth (-3dB)	8.0	9.0	-	GHz
Low Frequency Cutoff	-	30	-	kHz
Group Delay (1MHz to 8GHz)	-20		+20	ps
Optical Sensitivity (with a PIN Photodiode)	-	-18	-	dBm
Optical Overload	-1	0	-	dBm
Power Dissipation	-	300	425	mW
Operating Voltage Range	+ 4.75	+ 5.0	+ 5.25	V
Operating Temperature Range	-40	-	85	$^\circ C$

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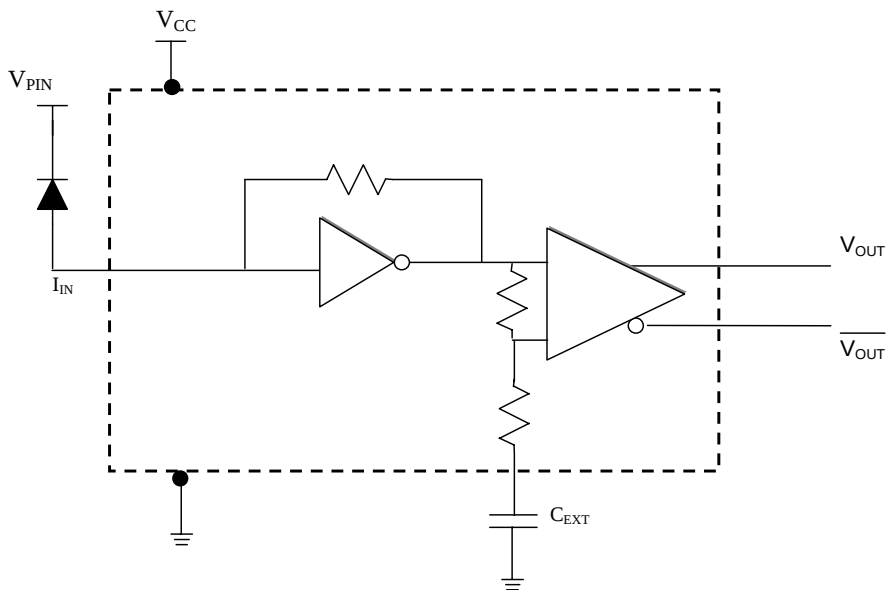
Absolute Maximum Ratings

V_{CC}	7.0V
P_{IN}	+5dBm
T_S	Storage Temp -65 °C to 125 °C

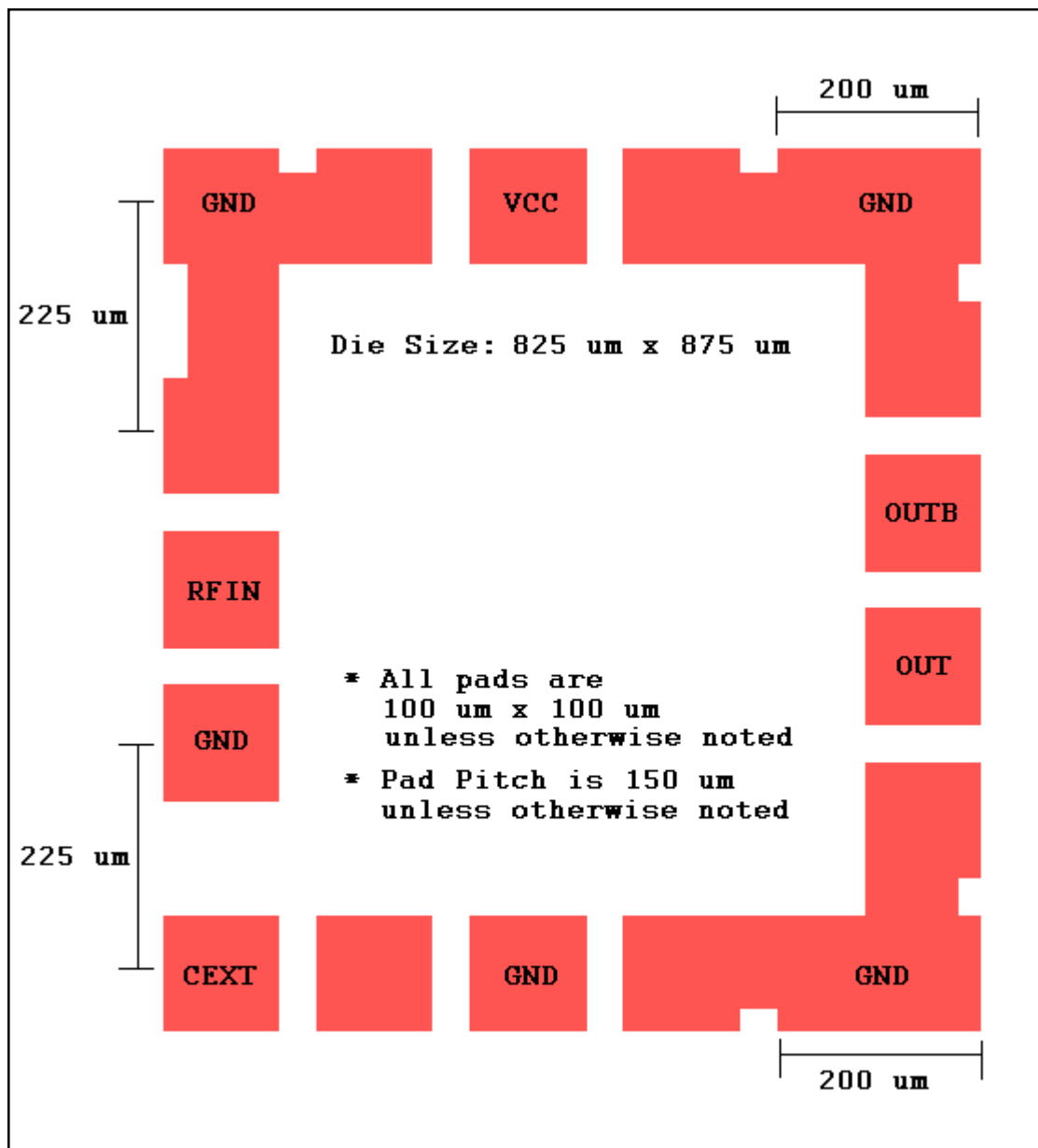
Pad Description

PAD	Description	Comment
V_{CC}	Positive Supply Voltage	+5.0V
I_{IN}	TIA Input	Connect to detector anode
C_{EXT}	Connection for an external Capacitor	For low frequency cutoff
V_{PIN}	Voltage for Photodiode Biasing	External to die
V_{OUT}	TIA Output Voltage (Non-inverted)	Logical '1' with optical input
$\overline{V_{OUT}}$	TIA Output Voltage (Inverted)	Logical '0' with optical input

Block Diagram



DIE SIZE AND LAYOUT





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