AMPTEK Hybrid Selection Tables

Model	Description	Characteristics	Applications
A101	Charge Sensitive Preamplifier & Discriminator	Sensitivity: 1 x 10^6 electrons; variable threshold; TTL and open collector output; 4 MHz periodic; externally adjustable discrimination levels and pulse width.	Pulse counting mode with: photomultiplier tubes (PMT), channel electron multipliers (CEM).
A111 A111F	Charge Sensitive Preamplifier & Discriminator	Sensitivity: 5 x 10^4 electrons; variable threshold; TTL output; 2.5 MHz periodic; analog monitor output; externally adjustable discrimination levels.	Pulse counting mode with: low gain photomultiplier tubes, proportional counters, and microchannel plates (MCP).
A121	12 MHz Preamplifier Discriminator	Sensitivity: 5 x 10^4 electrons; voltage controlled threshold; 12 MHz periodic; analog monitor output; adjustable pulse width.	Fast pulse counting mode with: microchannel plates, channel electron multipliers, low gain PMTs, proportional counters, and solid state detectors.
A203	a) Charge Sensitive Preamplifier b) Shaper	a) Noise 900 electrons RMS; Rise time: 50 ns. b) 300 ns peaking time; sensitivity 5 V/pC; unipolar and bipolar outputs available.	Analog mode with: solid state detectors, proportional counters, photomultiplier tubes, and channel electron multipliers.
A206	a) Pulse Amplifier b) Discriminator	a) 10x gain. b) Sensitivity 50 mV; 200 kHz periodic; externally adjustable low level discrimination levels and pulse width.	To follow a pulse shaper (A203, A225) for 10x gain and provide low level discrimination.
A225 A225F	a) Charge Sensitive Preamplifier b) Shaper	a) Noise <280 electrons RMS; rise time 20 ns. b) 2.5 μs peaking time; sensitivity 5 V/pC.	Analog mode with: solid state detectors and proportional counters. Will accept high capacitance detectors.
A250 A250F A250F/NF	Charge Sensitive Preamplifier **"State-of-the-Art"**	External FET to match detector characteristics, allows cooling of input FET; Rise time <2.5 ns; Noise: <100 electrons RMS at +20 ^{O}C, <20 electrons RMS with cooled FET.	All possible detectors can be connected to the A250 since the input FET is external and sensitivity is variable. .
A275 A275FC A275FN	Pulse Amplifier	Low noise; ultra low power, high slew rate; Wide band (f_t = 200 MHz); differential input, configurable as a shaping amplifier with adjustable gain and time constants.	Used for gain and shaping with the A250 or other charge preamps.
A150	Pulse Amplitude Discriminator	Tunnel diode snap action discriminator; complementary CMOS outputs; 5 MHz periodic; externally adjustable level and pulse width.	To follow a pulse shaper (A203, A225, A275) for accurate low level discrimination.
BLR1	Baseline Restorer	Restores baseline in high counting rate applications.	For use with the A275, A203, A225.
PH300	Peak-Hold Detector	To hold the peak of the analog pulse and interface with analog to digital converters. Both Wilkinson type and successive approximation ADC can be accommodated..	To be used with the A275, A225, A203 or any other pulse amplifier.

Model	Preamplifier	Pulse Amplifier	Discriminator	Package	Test Board
A101	Yes (no output)	Yes (no output)	Yes (main output)	TO-8 (.600) - 12 pin	PC-11
A111	Yes (no output)	Yes (analog monitor)	Yes (main output)	TO-8 (.600) - 12 pin	PC-21
A111F	Yes (no output)	Yes (analog monitor)	Yes (main output)	SIP-6 pin	PC-21
A121	Yes (no output)	Yes (analog monitor)	Yes (voltage controlled)	SIP-9 pin	PC-121
A203	Yes (separate input, output)	Yes (separate input, output)	No	DIP (.300) - 16 pin	PC-236
A206	No	Yes (separate input, output)	Yes (separate input, output)	DIP (.300) - 16 pin	PC-236/ PC-25
A225	Yes (timing pulse output)	Yes (main output)	No	DIP (.300) - 14 pin	PC-25
A225F	Yes (timing pulse output)	Yes (main output)	No	SIP – 6 pin	None
A250	Yes (external FET, variable gain)	No	No	DIP (.300) - 14 pin	PC-250
A250F	Yes (internal FET, variable gain)	No	No	SIP – 6 pin	PC250F/NF
A250F/NF	Yes (external FET, variable gain)	No	No	SIP – 6 pin	PC250F/NF
A275	No	Yes (externally adjustable gain and shaping time)	No	DIP (.300) - 14 pin	PC-275
A275FC A275FN	No	Yes (externally adjustable gain and shaping time)	No	SIP – 6 pin	None
PH300	No	No	No	DIP (.600) - 16 pin	None
BLR1	No	No	No	TO-8 (.500) - 12 pin	PC-275