



## HIGH CURRENT PULSE DRIVER

# PD01

[HTTP://WWW.APEXMICROTECH.COM](http://www.apexmicrotech.com) (800) 546-APEX (800) 546-2739

### PRELIMINARY

## FEATURES

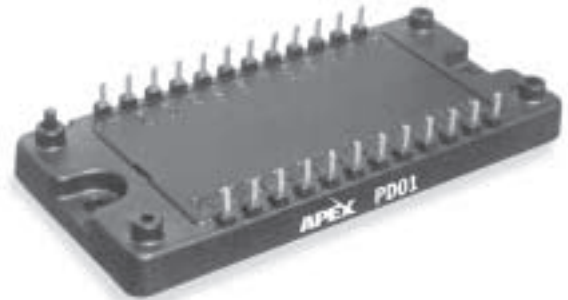
- WIDE SUPPLY RANGE—15-200V
- UP TO 160A PULSE SOURCE
- THERMAL SHUTDOWN
- SOA SENTRY™

## APPLICATIONS

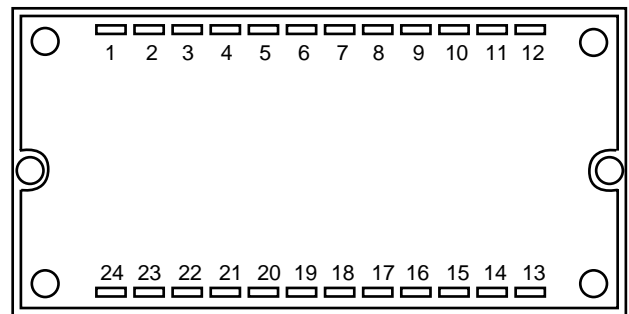
- high power laser diode driver

## DESCRIPTION

The PD01 is a precision pulse current source which can sink currents up to 160 amps and work off supply voltages up to 200V. The output current can be controlled by an analog input voltage or analog input and gate signal combination. By gating the analog input voltage it is possible to simultaneously amplitude modulate and pulse width modulate the output current. The PD01 has extensive circuitry that protects not only itself but the load as well. The temperature and instantaneous power dissipation of the output transistors is monitored. Excessive temperature or power dissipation will trip the SOA Sentry™ alarm which shuts down the amplifier. If the output current does not reach the programmed level in 5 $\mu$ S the output is also shutdown and the U-C (under-current) output alarm is activated. Although used primarily as a pulse current source the PD01 can also be operated in a DC mode within its power dissipation limits.



## EXTERNAL CONNECTIONS



TO BE DETERMINED

# PD01

## ABSOLUTE MAXIMUM RATINGS SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS	SUPPLY VOLTAGE, +V <sub>s</sub>	200V
	POWER DISSIPATION, internal	500W
	TEMPERATURE, pin solder - 10s	300°C
	TEMPERATURE, junction <sup>2</sup>	150°C
	TEMPERATURE, storage	–25°C to +100°C
	OPERATING TEMPERATURE RANGE, case	–25°C to +85°C

### SPECIFICATIONS

PARAMETER	TEST CONDITIONS <sup>1</sup>	MIN	TYP	MAX	UNITS
INPUT					
PULSE AMPLITUDE CONTROL	analog input	0		10	V
SHUTDOWN CONTROL	TTL				
OUTPUT GATE CONTROL	TTL				
OUTPUT					
CURRENT, peak <sup>2</sup>		160			A
DUTY CYCLE, WITHIN SOA				100	%
PULSE WIDTH		10		DC	µsec
RISE/FALL TIME				5	µsec
ACCURACY, I <sub>o</sub>		1			%
VOLTAGE				200	V
POWER SUPPLY					
VOLTAGE, V <sub>s</sub>	Full temperature range	15	160	200	V
VOLTAGE, V <sub>CC</sub>			+/- 15		V
PROTECTION					
SOA VIOLATION SHUTDOWN				10	µsec
FAULT FLAG	TTL				
THERMAL					
RESISTANCE, junction to case	Full temperature range			.25	°C/W
RESISTANCE, junction to air	Full temperature range		7		°C/W
TEMPERATURE RANGE, case	Meets full range specifications	–25		+85	°C

NOTES: 1. Unless otherwise noted: T<sub>C</sub> = 25°C, V<sub>s</sub>, V<sub>CC</sub> at typical specification.  
2. Guaranteed but not tested.

**CAUTION** The PD01 is constructed from MOSFET transistors. ESD handling procedures must be observed.

### BLOCK DIAGRAM

