



The Future of Analog IC Technology®

# MP4816

## 16-Channel High Voltage Analog Switch

**PRELIMINARY SPECIFICATIONS SUBJECT TO CHANGE**

### DESCRIPTION

The MP4816 is a 16-channel high voltage single-pole single-throw, SPST, analog switch designed for medical ultrasound imaging applications. It is designed to multiplex the transmit and receive voltages to and from multiple piezoelectric transducers, PZTs.

The output switches are controlled by a 16-bit serial shift register followed by a 16-bit data latch. A data out, Dout, pin is provided to allow for multiple devices to be cascaded together. This will help minimize the number of input/output, I/O, control lines. A logic High in the data latch will turn on the corresponding analog switch whereas a logic Low will turn it off.

The MP4816 does not require any high voltage supplies. Only two low voltage supplies are required, 3.3V and 10V. The analog switch can block or pass analog voltages up to ±90V with peak currents of up to ±2.0A. It is available in a 7mm x 7mm TQFP-48 package.

### FEATURES

- No High Voltage Supplies Required
- 16 Channels
- Up to ±90V Analog Signals
- 12.5 Ohms Typical Switch Resistance
- ±2.0A Typical Switch Peak Current
- Off-Isolation of -60dB at 5.0MHz
- 80MHz Clock Frequency

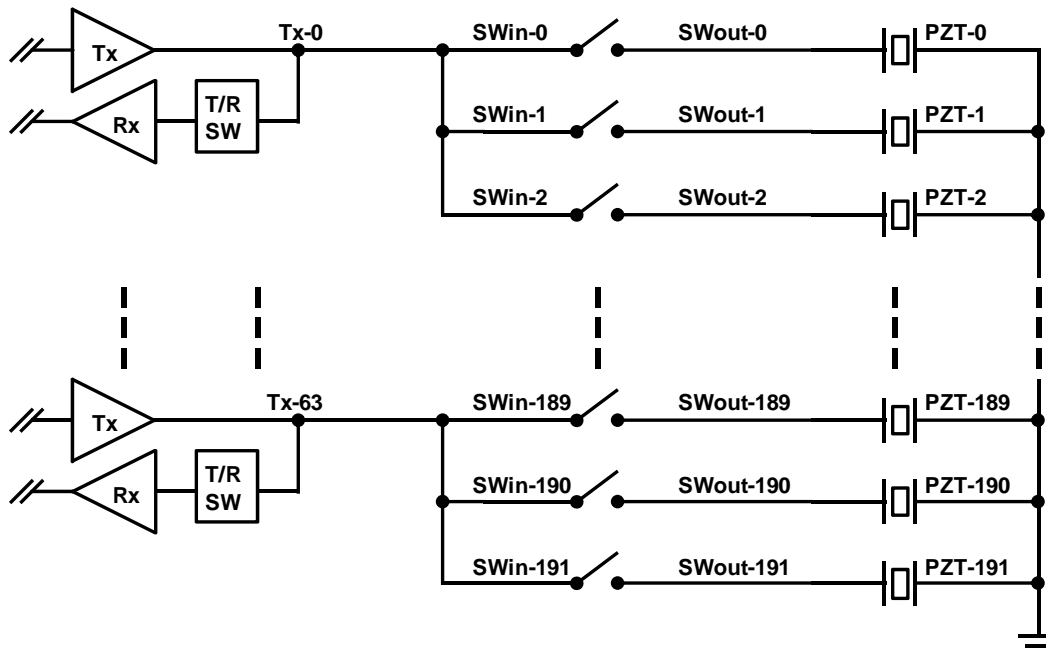
### APPLICATIONS

- Medical Ultrasound Imaging
- NDT, Non-Destructive Testing

All MPS parts are lead-free, halogen free, and adhere to the RoHS directive. For MPS green status, please visit MPS website under Quality Assurance. "MPS" and "The Future of Analog IC Technology" are Registered Trademarks of Monolithic Power Systems, Inc.

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### TYPICAL APPLICATION

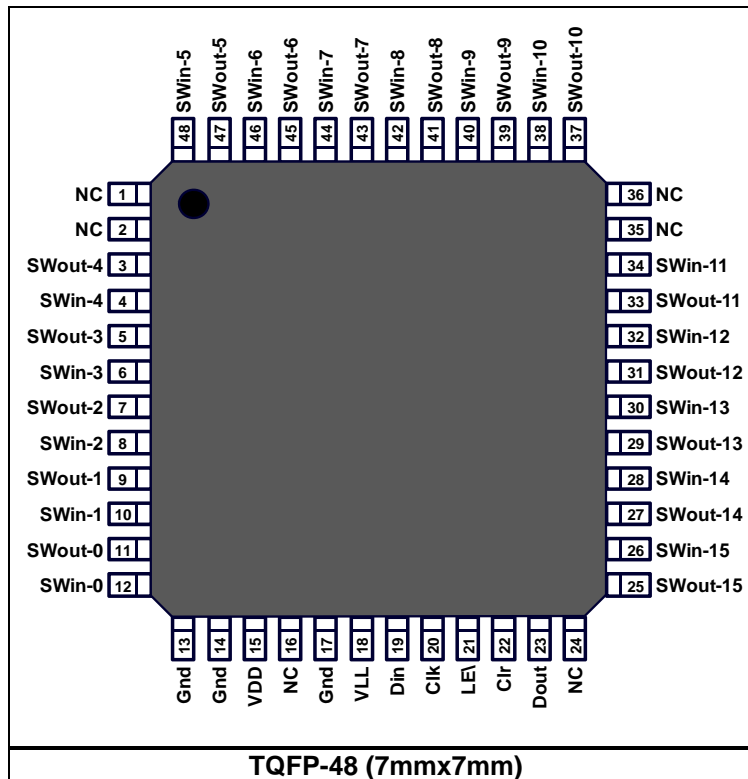


### ORDERING INFORMATION

Part Number*	Package	Top Marking
MP4816GFP	TQFP-48 (7mmx7mm)	TBD

\* For Tape & Reel, add suffix –Z (e.g. MP4816GFP–Z).

### PACKAGE REFERENCE



#### ABSOLUTE MAXIMUM RATINGS <sup>(1)</sup>

$V_{LL}$ , Logic supply .....	-0.5V to +6.6V
$V_{DD}$ , Translator supply .....	-0.5V to +11V
$V_{SIG}$ , Analog signal range .....	0V to $\pm 105V$
Junction Temperature .....	150°C
Lead Temperature .....	260°C
Continuous Power Dissipation, $T_A=25^\circ C$ <sup>(2)</sup> .....	1.0W
Storage temperature .....	-55°C to 150°C

#### Recommended Operating Conditions <sup>(3)</sup>

Logic supply voltage, $V_{LL}$ .....	2.7V to 5.5V
Translator supply voltage, $V_{DD}$ .....	9V to 10V
Analog signal range, $V_{SIG}$ .....	0 to $\pm 90V$
Junction temperature, $T_J$ .....	-25°C to +125°C

#### Thermal Resistance <sup>(4)</sup>

TQFP-48 (7mmx7mm)	$\theta_{JA}$	$\theta_{JC}$
	68	15 °C/W

#### Notes:

- Exceeding these ratings may damage the device.
- The maximum allowable power dissipation is a function of the maximum junction temperature  $T_J$  (MAX), the junction-to-ambient thermal resistance  $\theta_{JA}$ , and the ambient temperature  $T_A$ . The maximum allowable continuous power dissipation at any ambient temperature is calculated by  $P_D$  (MAX) =  $(T_J$  (MAX) -  $T_A$ ) /  $\theta_{JA}$ . Exceeding the maximum allowable power dissipation will cause excessive die temperature resulting in permanent damage.
- The device is not guaranteed to function outside of its operating conditions.
- Measured on JESD51-7, 4-layer PCB.