

# DALLAS

SEMICONDUCTOR

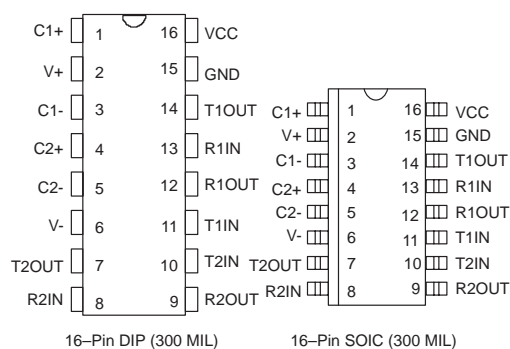
## DS1228

### +5V Powered Dual RS-232 Transmitter/Receiver

#### FEATURES

- Operates from a single 5V power supply
- Two drivers and two receivers
- Meets all EIA RS-232-C specifications
- On-board voltage doubler
- On-board voltage inverter
- $\pm 30V$  input levels
- $\pm 9V$  output levels with + 5V supply
- Low-power CMOS
- Pin-compatible with the MAX 232
- Optional 16-pin SOIC surface mount package

#### PIN ASSIGNMENT



#### PIN DESCRIPTION

C1+, C1	– Capacitor 1 Connections
C2+, C2	– Capacitor 2 Connections
V+, V-	– $\pm 10$ Volts
T1IN, T2IN	– Transmitter In
T1OUT, T2OUT	– Transmitter Out
R1IN, R2IN	– Receiver In
R1OUT, R2OUT	– Receiver Out
V <sub>CC</sub>	– +5 Volts
GND	– Ground

#### DESCRIPTION

The DS1228 is a dual RS-232-C Receiver/Transmitter that meets all EIA specifications while operating from a single, +5 volt supply. The DS1228 has two internal charge pumps. One of the charge pumps is used to generate +10 volts. The other is used to generate -10 volts. The DS1228 also contains four level translators. Two of the level translators are RS-232 transmitters which convert TTL/CMOS inputs into  $\pm 9V$  RS-232 outputs. The other two level translators are capable of operating with

up to  $\pm 30V$  inputs. The DS1228 is suitable for all RS-232 communications and is particularly valuable where higher voltage power supplies for RS-232 drivers are not available. The power supply section of the DS1228 supplies  $\pm 10$  volts from the V<sub>CC</sub> input.

See the DS1229 data sheet for electrical specifications and operation.