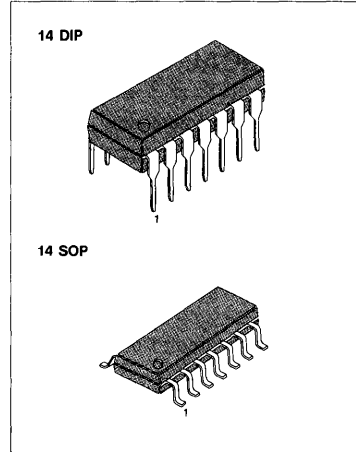


QUAD CMOS LINE RECEIVER

The KS5789A is designed to interface data terminal equipment (DTE) with data communications equipment (DCE) in conformance with the specifications of EIA RS-232-C, CCITT V.24 standards. The KS5789A is direct replacement for the bipolar device (MC1489/A).

FEATURES

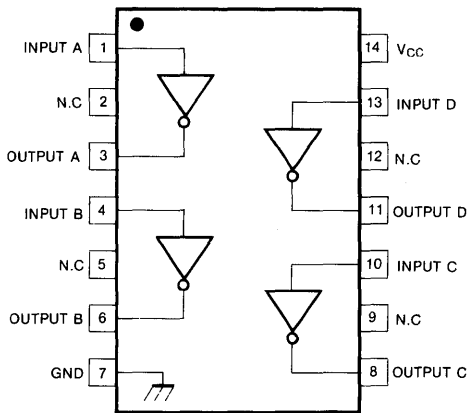
- Low power consumption & low delay slew
- Pin for pin equivalent to MC1489/A
- Inputs withstand $\pm 30V$
- Fail-safe operating mode
- Internal noise filter
- Internal input threshold with hysteresis



ORDERING INFORMATION

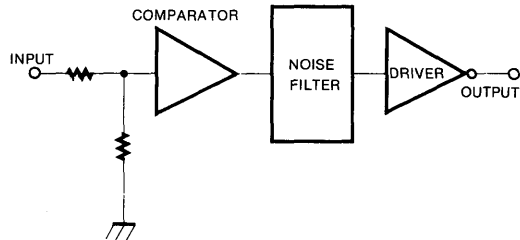
| Device | Package | Operating Temperature |
|----------|---------|-----------------------|
| KS5789AN | 14 DIP | - 40 ~ + 85°C |
| KS5789AD | 14 SOP | |

PIN CONFIGURATION



BLOCK DIAGRAM

(1/4 OF CIRCUIT SHOWN)



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C, unless otherwise noted)

| Characteristic | Symbol | Value | Unit |
|--------------------------|------------------|------------------------------|-----------------|
| Power Supply Voltage | V _{CC} | -0.5 ~ 7.0 | V _{dc} |
| Input Voltage | V _{IN} | -30 ~ 30 | V _{dc} |
| Output Voltage | V _{OUT} | -0.3 ~ V _{CC} + 0.3 | V _{dc} |
| Power Dissipation (85°C) | P _D | 500 | mW |
| Operating Temperature | T _a | -40 ~ 85 | °C |
| Storage Temperature | T _{stg} | -65 ~ 150 | °C |

ELECTRICAL CHARACTERISTICS(V_{CC} = 5V ± 0.5V, Ta = -40° to 85°C, unless otherwise noted)

| Characteristic | Symbol | Test Condition | Min | Typ | Max | Unit |
|--|-----------------|--|------------------------------|-----|----------------------------|-----------------|
| DC ELECTRICAL CHARACTERISTICS | | | | | | |
| Input Voltage High | V _{IH} | | 1.3 | | 2.5 | V _{dc} |
| Input Voltage Low | V _{IL} | | 0.5 | | 1.7 | V _{dc} |
| Input Hysteresis Voltage | V _H | V _{IH} - V _{IL} | | 1.0 | | V _{dc} |
| Input Current | I _{IN} | V _{IN} = 3V V _{IN} = -3V V _{IN} = 25V V _{IN} = -25V | 0.43 -0.43 3.6 -3.6 | | 1.0 -1.0 8.3 -8.3 | mA |
| Output Voltage High | V _{OH} | V _{IN} = V _{IL(min)} , I _{OUT} = -3.2mA | 2.8 | | | V _{dc} |
| Output Voltage Low | V _{OL} | V _{IN} = V _{IH(max)} , I _{OUT} = 3.2mA | | | 0.4 | V _{dc} |
| Supply Current | I _{CC} | R _L = ∞, V _{IN} = V _{IL(min)} to V _{IH(max)} | | | 600 | μA |
| SWITCHING CHARACTERISTICS (V_{CC} = 4.5V to 5.5V, Ta = -40° ~ 85°C, C_L = 50pF, Note 1) | | | | | | |
| Propagation Delay | t _p | Input pulse width ≥ 10μS | | | 6.5 | μS |
| Output Rise Time | t _r | | | | 300 | nS |
| Output Fall Time | t _f | | | | 300 | nS |
| Pulse Width Assumed to be Noise | t _{nw} | | | | 1.0 | μS |
| Propagation Delay Skew | t _{sk} | | | 400 | | nS |

Note 1: Test waveform t_r = t_f = 200ns, V_{IH} = +3V, V_{IL} = -3V, f = 20KHz

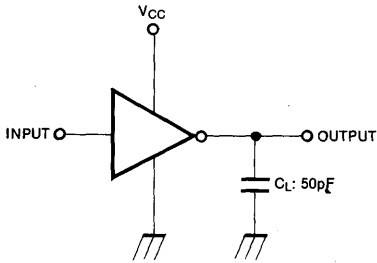


Fig. 1 AC Test Circuit

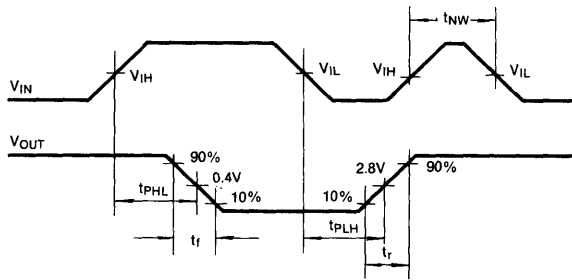
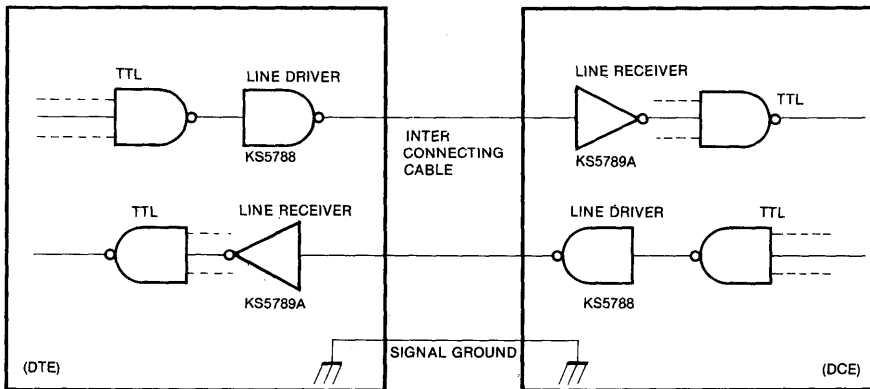


Fig. 2 Switching Waveforms

TYPICAL APPLICATION



RS-232-C Data Transmission