

UCN-5857A/EP AND UCN-5859A/EP 32-OUTPUT 8-BIT ADDRESSABLE DRIVERS

FEATURES

- 32 Totem Pole Outputs
- Output Breakdown of 100 V
- Output Current of ± 20 mA
- Low-Power CMOS Logic
- Output Clamping Diodes

UCN-5857A/EP and UCN-5859A/EP are 8-bit addressable shift register drivers with 32-output capability. They employ totem pole outputs capable of maintaining an OFF voltage of 100 V and an ON current of ± 20 mA. The devices include a two-line to four-line decoder that determines which set of outputs is controlled by the on-board eight-bit shift register.

A low on the input will result in a high on the output. A high on the input will result in a low on the output. Outputs of this device are normally low. When the STROBE input is held low, outputs are controlled by the state of the shift register. When the STROBE is held high, all outputs remain low and are unaffected by the register contents. Output clamping for sink and source have been incorporated to guard against high and low transients.

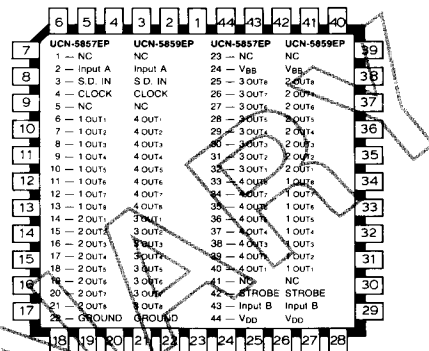
These devices are furnished in a 40-pin dual in-line plastic package with 600-mil row centers or in a 44-pin plastic leaded chip carrier with 50-mil spacings (J lead bend) for surface-mount applications.

ABSOLUTE MAXIMUM RATINGS at $T_A = +25^\circ\text{C}$

Output Voltage, V_{CE} 100 V
Output Supply Voltage, V_{BB} 100 V
Logic Supply Voltage, V_{DD} 15 V
Output Current, I_{OUT} ± 20 mA
Input Voltage Range, V_{IN} -0.3 V to $V_{DD} + 0.3$ V
Package Power Dissipation, P_D ('A' Package) 2.8 W*
('EP' Package) 2.0 W*

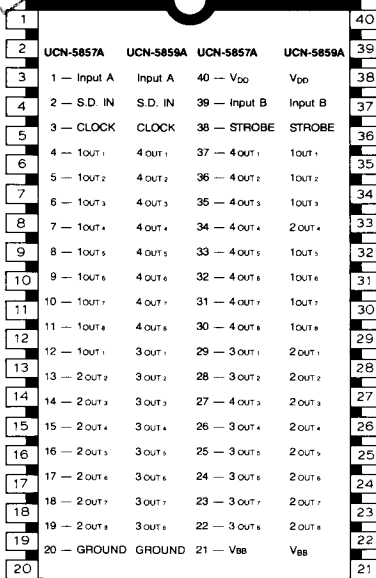
Operating Temperature Range, T_A -20°C to $+85^\circ\text{C}$
Storage Temperature Range, T_S -55°C to $+125^\circ\text{C}$

*Derate linearly to 0 W at $T_A = +125^\circ\text{C}$



Dwg. No. A-14,238

PACKAGE 'EP'



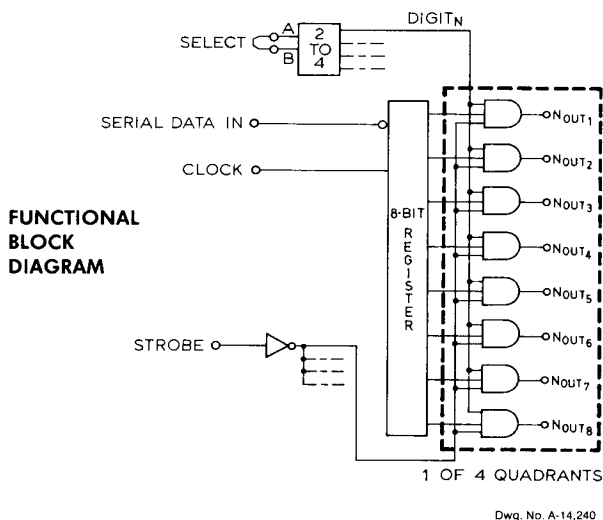
Dwg. No. A-14,239

PACKAGE 'A'

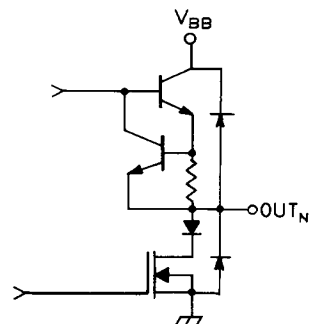
NOTE: S.D. IN = SERIAL DATA IN

UCN-5857A/EP AND UCN-5859A/EP

32-OUTPUT, 8-BIT ADDRESSABLE DRIVERS



TYPICAL OUTPUT DRIVER



Dwg. No. A-14,241

ELECTRICAL CHARACTERISTICS at $T_A = 25^\circ\text{C}$, $V_{BB} = 100\text{ V}$, $V_{DD} = 5\text{ V}$ (unless otherwise noted)

Characteristic	Symbol	Conditions	Limits			
			Min.	Typ.	Max.	Units
Output Leakage Current	I_{CEX}	$V_{BB} = 100\text{ V}$, $V_{OUT} = 0\text{ V}$	—	—	—100	μA
		$V_{BB} = V_{OUT} = 100\text{ V}$	—	—	100	μA
Output Saturation Voltage	$V_{OUT(1)}$	$I_{OUT} = -1.0\text{ mA}$	98	—	—	V
		$I_{OUT} = -10\text{ mA}$	97	—	—	V
		$I_{OUT} = -15\text{ mA}$	96	—	—	V
	$V_{OUT(0)}$	$I_{OUT} = 1.0\text{ mA}$, $V_{DD} = 12\text{ V}$	—	—	20	V
		$I_{OUT} = 10\text{ mA}$, $V_{DD} = 12\text{ V}$	—	—	4.0	V
		$I_{OUT} = 15\text{ mA}$, $V_{DD} = 12\text{ V}$	—	—	5.0	V
Input Voltage	$V_{IN(0)}$		—	—	1.0	V
	$V_{IN(1)}$	$V_{DD} = 12\text{ V}$	10.5	—	—	V
		$V_{DD} = 10\text{ V}$	8.5	—	—	V
		$V_{DD} = 5.0\text{ V}$	3.5	—	—	V
Input Resistance	R_{IN}	$V_{DD} = 5.0\text{ V to }12\text{ V}$	1.0	—	—	$\text{M}\Omega$
Supply Current	$I_{DD(LOW)}$	$V_{DD} = 12\text{ V}$, All outputs low	—	—	1.0	mA
	$I_{DD(HIGH)}$	$V_{DD} = 12\text{ V}$, 8 outputs high	—	—	1.0	mA
Output Clamp Voltage	$V_{OUT(CLAMP)}$	$I_{OUT} = 20\text{ mA}$	—	—	102.5	V
		$I_{OUT} = -20\text{ mA}$	—	—	-2.5	V
Output Short-Circuit Current	I_{SC}		—	—	-20	mA
High-Voltage Supply Current	$I_{BB(LOW)}$	$V_{DD} = 12\text{ V}$, All outputs low	—	—	1.0	mA
	$I_{BB(HIGH)}$	$V_{DD} = 12\text{ V}$, 8 outputs high	—	—	3.0	mA