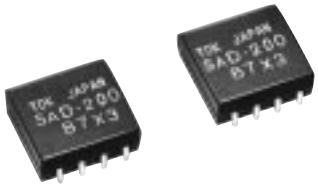
Delay Lines

Active Delay Lines
SMD

SAD Series



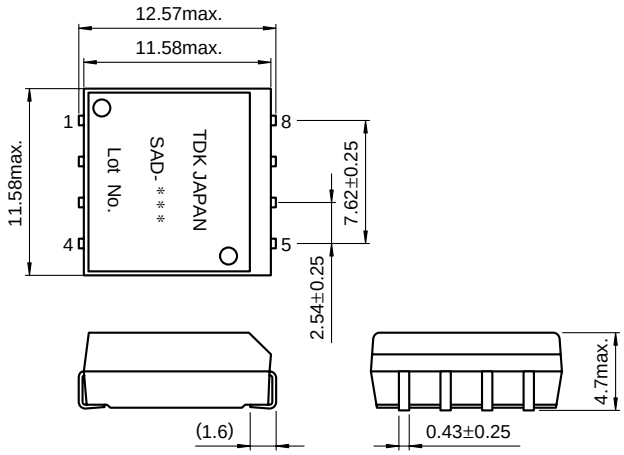
FEATURES

- The SAD series are 5-output lumped constant type delay lines with built-in TTL logic elements (Fast type)
- These parts employ the PLCC28 pin-type surface mounting style.
- Using the IC74F04 TTL, they achieve high speed and low insertion loss.
- Available for flow and reflow soldering.

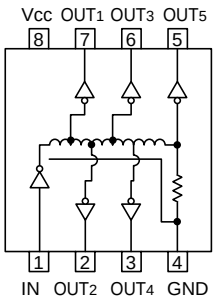
APPLICATIONS

Computers, personal computers, hard disk drives, printers, and automatic control machines.

SHAPES AND DIMENSIONS



CIRCUIT DIAGRAM



Weight: 1.8g max.

Dimensions in mm

MAXIMUM RATINGS

Power supply voltage Vcc		+7V
Input voltage Vi		–0.5 to +7V
Temperature range	Operating	0 to +70°C
	Storage	–40 to +125°C

ELECTRICAL CHARACTERISTICS

Part No.	Total delay time Td (ns)	Delay time between each terminal td (ns)
SAD-020	20±2ns	4±2
SAD-025	25±3ns	5±2
SAD-050	50±3ns	10±2
SAD-060	60±3ns	12
SAD-075	75±5%	15
SAD-100	100±5%	20
SAD-125	125±5%	25
SAD-150	150±5%	30
SAD-200	200±5%	40
SAD-250	250±5%	50

- Minimum input pulse width: Td×40% (Repeat cycle T=Td×30) (Measuring conditions Vcc: 5±0.1V/Ta: 25±1°C/No load between each terminal)
- Rise time: 4ns max.

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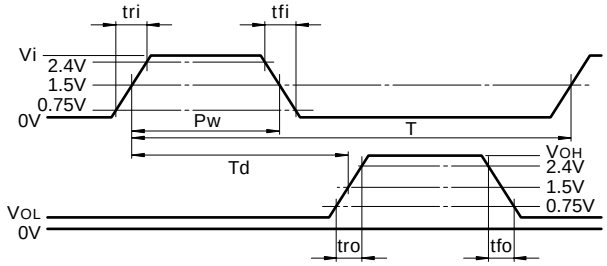
MEASURING CONDITIONS

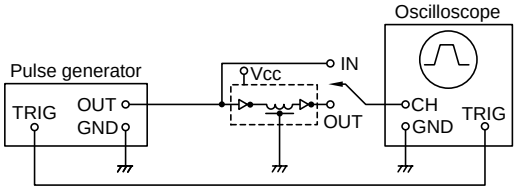
Input voltage Vi	3.2V
Pulse width conversion Pw	Td(Total delay time)×3
Repeat cycle T	Pw×10 [Duty: 10%]
Input rise time Tri	5ns max.
Power supply voltage Vcc	5±0.1V
Ambient temperature Ta	25±1°C

WAVEFORMS



Vi : Input voltage
Td : Total delay time
Pw: Pulse width conversion
tri : Input rise time
tfi : Input fall time
tro : Output rise time
tfo : Output fall time
VOL: Output voltage(L level)
VOH: Output voltage(H level)

MEASURING CIRCUIT



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INPUT/OUTPUT CHARACTERISTICS

Item	Measuring conditions	Standard value		
		Minimum	Nominal	Maximum
Power supply voltage V_{CC}		4.75V	5V	5.25V
Input voltage (H level) V_{IH}		2V	—	—
Input voltage (L level) V_{IL}		—	—	0.8V
Output voltage (H level) V_{OH}	V_{CC}=4.75V V_{IH}=2V I_{OH}=–1mA	2.7V	3.4V	—
Output voltage (L level) V_{OL}	V_{CC}=4.75V V_{IL}=0.8V I_{OL}=20mA	—	—	0.5V
Input current (H level) I_{IH}	V_{CC}=5.25V V_I=2.7V	—	—	20µA
Input current (L level) I_{IL}	V_{CC}=5.25V V_I=0.5V	—	—	–0.6mA
Power supply current I_{CCL}	V_{CC}=5.25V V_{IL}=0V	—	24mA	28.5mA

OUTPUT LOAD CONDITIONS

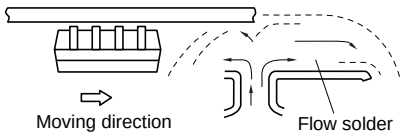
Logic 1 output	20TTL load/tap [I_{OH}/I_{IH}=1mA/50µA=20]
Logic 0 output	10TTL load/tap [I_{OH}/I_{IL}=20mA/2mA=10]

RECOMMENDED SOLDERING CONDITIONS

FLOW/DIP SOLDERING

Solder temperature	260°C max.
Dip time	10±1s

•After dipping, use natural cooling.



RECOMMENDED REFLOW SOLDERING CONDITIONS