High Performance Generic Ti-W PROM Family
53/63SXXX

Features/Benefits
- **Reliable Titanium-Tungsten fuses (Ti-W)**
- **Low voltage programming**
- **Highest speed Schottky PROM family available**
- **Pin compatible with standard Schottky PROMs**
- **PNP inputs for low input current**
- **Compatible pin configurations for upward expansion**

Description
The family features low input current PNP inputs, full Schottky clamping and three-state and open collector outputs. The titanium-tungsten fuses store a logical low and are programmed to the high state. Special on chip circuitry and extra fuses provide pre-programming testing which assure high programming yields and high reliability.

The 63 series is specified for operation over the commercial temperature and voltage range. The 53 series is specified for the military ranges.

3

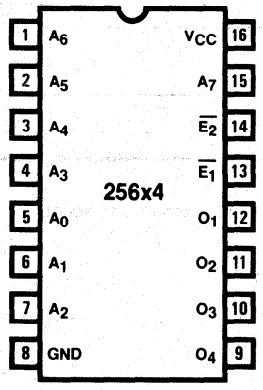
Applications
- Microprogram control store
- Microprocessor program store
- Look up table
- Character generator
- Random logic
- Code converter

High Performance Generic PROM Selection Guide

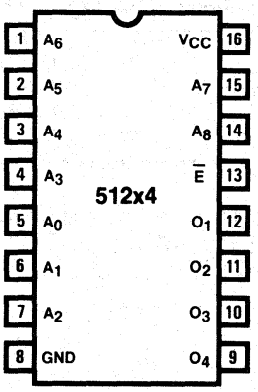
MEMORY			PACKAGE		DEVICE TYPE	
SIZE	ORGANIZATION		PINS	TYPE	0°C to +75°C	−55°C to +125°C
1K	256x4	OC	16	J,N	63S140	53S140
		TS			63S141	53S141
2K	512x4	OC	16	J,N	63S240	53S240
		TS			63S241	53S241

Pin Configurations

53/63S140
53/63S141



53/63S240
53/63S241



Absolute Maximum Ratings

Supply Voltage, V_{CC} 7V
Input Voltage 7V
Off-state output voltage 5.5V
Storage temperature ..... –65° to +150°C

Operating Conditions

SYMBOL	PARAMETER	MILITARY MIN	MILITARY NOM	MILITARY MAX	COMMERCIAL MIN	COMMERCIAL NOM	COMMERCIAL MAX	UNIT
V_{CC}	Supply voltage	4.5	5	5.5	4.75	5	5.25	V
T_A	Operating free-air temperature	–55		125	0		75	°C

Electrical Characteristics Over Operating Conditions

SYMBOL	PARAMETER	TEST CONDITIONS			MIN	TYP†	MAX	UNIT
V_{IL}	Low-level input voltage						0.8	V
V_{IH}	High-level input voltage				2			V
V_{IC}	Input clamp voltage	V_{CC} = MIN	I_I = –18mA				–1.5	V
I_{IL}	Low-level input current	V_{CC} = MAX	V_I = 0.4V				–0.25	mA
I_{IH}	High-level input current	V_{CC} = MAX	V_I = V_{CC} MAX				40	μA
V_{OL}	Low-level output voltage	V_{CC} = MIN, V_{IL} = 0.8V, V_{IH} = 2V	I_{OL} = 16mA	MIL			0.5	V
				COM			0.45	
V_{OH}	High-level output voltage *	V_{CC} = MIN, V_{IL} = 0.8V, V_{IH} = 2V	MIL I_{OH} = –2mA		2.4			V
			COM I_{OH} = –3.2mA					
I_{OZL}	Off-state output current *	V_{CC} = MAX	V_O = 0.4V				–40	μA
I_{OZH}			V_O = 2.4V				40	μA
I_{CEX}	Open collector output current	V_{CC} = MAX	V_O = 2.4V				40	μA
			V_O = 5.5V				100	
I_{OS}	Output short-circuit current **	V_{CC} = 5V	V_O = 0V		–20		–90	mA
I_{CC}	Supply current	V_{CC} = MAX, All inputs grounded. All outputs open.	'S140 'S141			80	130	mA
			'S240 'S241			90	130	

*Three-state only

**Not more than one output should be shorted at a time and duration of the short-circuit should not exceed one second.

†Typicals at 5.0V_{CC} and 25°C T_A

Switching Characteristics

Over Commercial Operating Conditions

DEVICE TYPE	t_{AA}(ns) ADDRESS ACCESS TIME		t_{EA}(ns) ENABLE ACCESS TIME		t_{ER}(ns) ENABLE RECOVERY TIME	
	TYP†	MAX	TYP	MAX	TYP	MAX
63S140/1	29	45	15	25	15	25
63S240/1	27	45	15	25	15	25
53S140/1	29	55	15	30	15	30
53S240/1	27	55	15	30	15	30

† Typicals at 5.0V/V_{CC} and 25°C T_A

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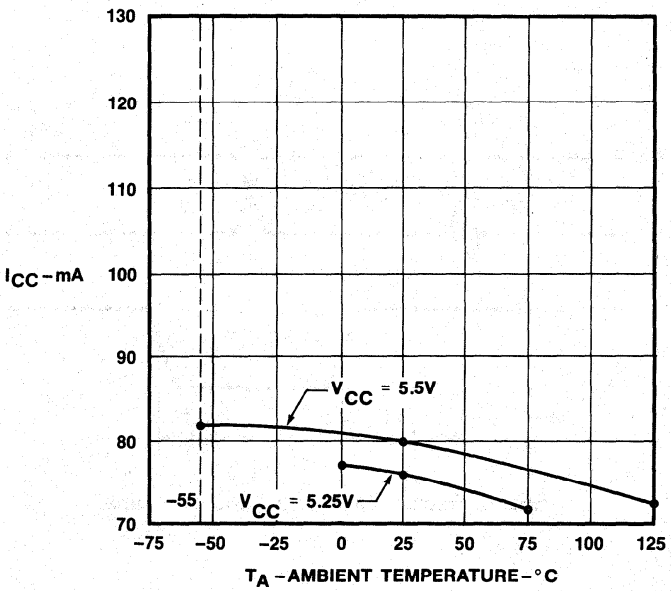
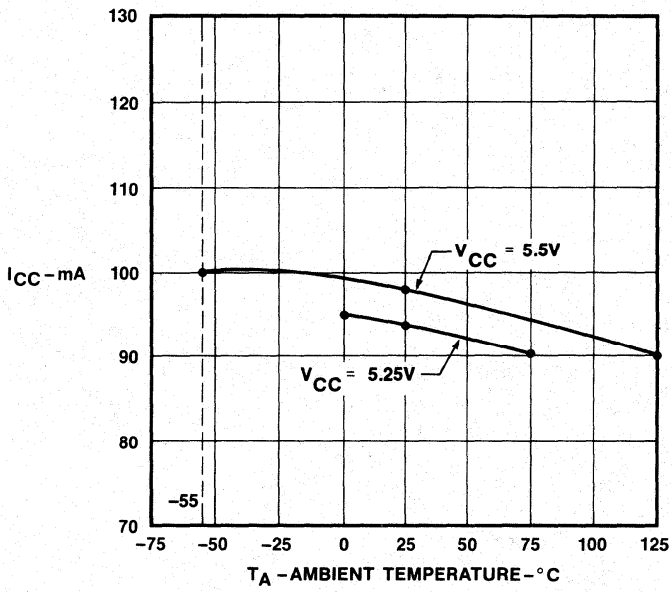
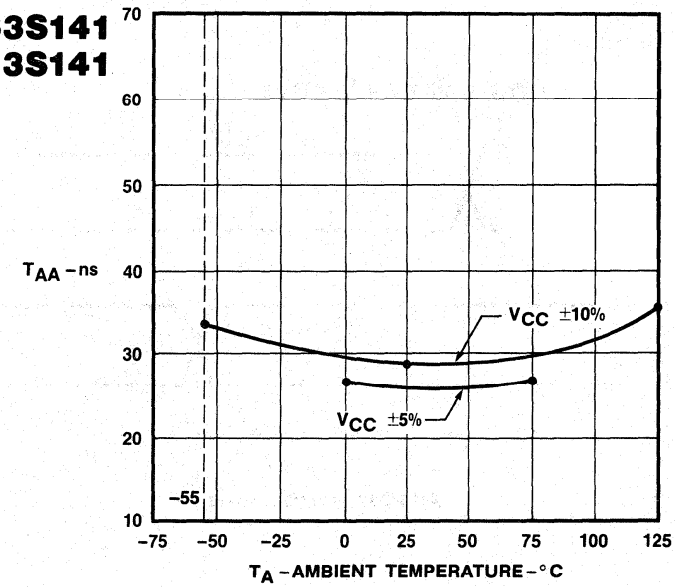
Typical I_{CC} vs Temperature



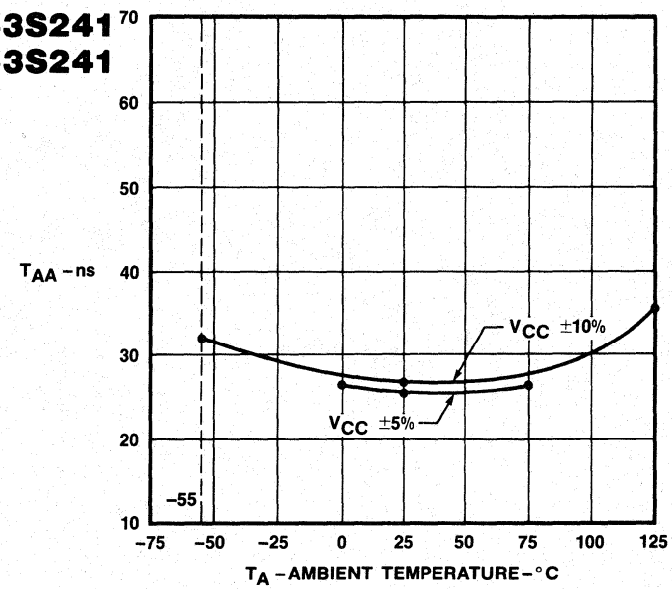


Typical T_{AA} vs Temperature

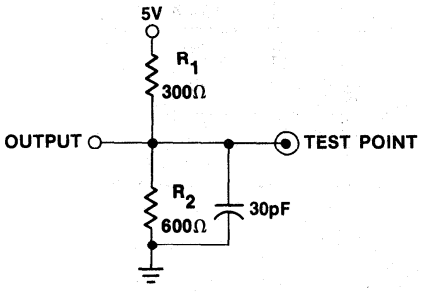
63S141
53S141



63S241
53S241

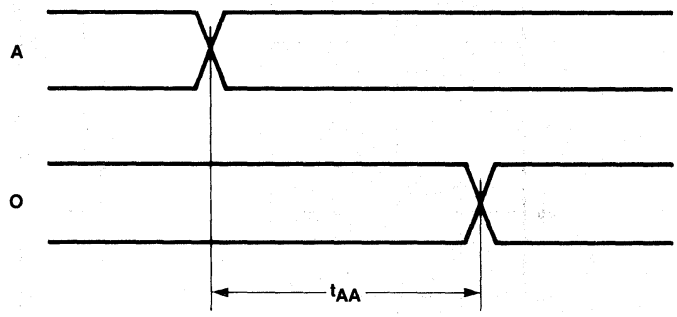


Standard Test Load

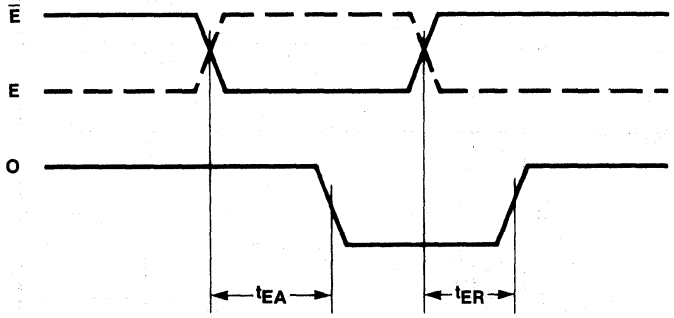


Input Pulse Amplitude 3.0V
Input Rise and Fall Times 5ns from 1.0V to 2.0V
Measurements made at 1.5V

Definition of Waveforms



Address Access Time



Enable Access Time and Recovery Time