TIBPAL16L8-25C供应路PAL16L8-25C, TIBPAL16R4-25C, TIBPAL16R6-25C, TIBPAL16R8-25C TIBPAL16L8-30M, TIBPAL16R4-30M, TIBPAL16R6-30M, TIBPAL16R8-30M LOW-POWER HIGH-PERFORMANCE IMPACT ™ PAL[®] CIRCUITS SRP5059 – FEBRUARY 1984 – REVISED APRIL 2000

- High-Performance Operation: Propagation Delay
 C Suffix ... 25 ns Max
 M Suffix ... 30 ns Max
- Functionally Equivalent, but Faster Than PAL16L8A, PAL16R4A, PAL16R6A, and PAL16R8A
- Power-Up Clear on Registered Devices (All Register Outputs Are Set High, but Voltage Levels at the Output Pins Go Low)
- Package Options Include Both Plastic and Ceramic Chip Carriers in Addition to Plastic and Ceramic DIPs
- Dependable Texas Instruments Quality and Reliability

DEVICE	I INPUTS	3-STATE O OUTPUTS	REGISTERED Q OUTPUTS	I/O PORTS
PAL16L8	10	2	0	6
PAL16R4	8	0	4 (3-state buffers)	4
PAL16R6	8	0	6 (3-state buffers)	2
PAL16R8	8	0	8 (3-state buffers)	0

description

These programmable array logic devices feature high speed and functional equivalency when compared with currently available devices. These IMPACT™ circuits combine the latest Advanced Low-Power Schottky technology with proven titanium-tungsten fuses to provide reliable, high-performance substitutes for conventional TTL logic. Their easy programmability allows for quick design of custom functions and typically results in a more compact circuit board. In addition, chip carriers are available for further reduction in board space.

The TIBPAL16' C series is characterized from 0° C to 75°C. The TIBPAL16' M series is characterized for operation over the full military temperature range of -55° C to 125° C.

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Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

These devices are covered by U.S. Patent 4,410,987. IMPACT is a trademark of Texas Instruments. PAL is a registered trademark of Advanced Micro Devices Inc.

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.



C SUFFIX J OR N PACKAGE								
M SUFFIX .		J OR	W	PACKAGE				
(TO	P VIE	EW)					
1				1				
I [1	\cup	20]∨ _{CC}				
١C	2		19]0				
ι[3		18] I/O				
ιQ	4		17] I/O				
ιQ	5		16] I/O				
ι[6		15] I/O				
ι[7		14] I/O				
ιD	8		13] I/O				

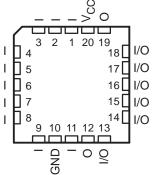
TIBPAL16L8'



12**0**0

ıП9

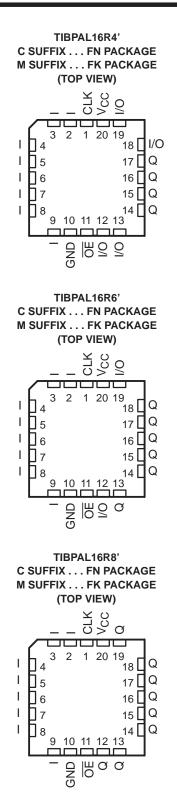
GND [] 10



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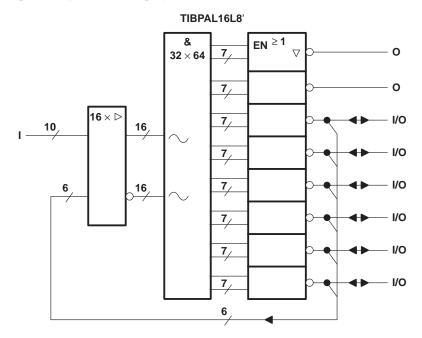
TIBPAL16R4-25C, TIBPAL16R6-25C, TIBPAL16R8-25C TIBPAL16R4-30M, TIBPAL16R6-30M, TIBPAL16R8-30M LOW-POWER HIGH-PERFORMANCE IMPACT TM PAL® CIRCUITS SRPS059 FEBRUARY 1984 – REVISED APRIL 2000

TIBPAL16R4' C SUFFIX ... J OR N PACKAGE **M SUFFIX ... J OR W PACKAGE** (TOP VIEW) CLK [20 UCC 1 2 19**0**//O 1 3 18 I/O ΙΠ 17 🛛 Q 4 ΙΓ 5 16 **I**Q 6 15 🛛 Q ΙП 7 14 🛛 Q ΙΠ 8 13 I/O ΙŪ 9 12 **I**/O GND [11 **NOE** 10 TIBPAL16R6' C SUFFIX ... J OR N PACKAGE M SUFFIX ... J OR W PACKAGE (TOP VIEW) 20 VCC CLK [1 19**]** I/O ΙΠ 2 18 🛛 Q IΠ 3 17 🛛 Q ΙП 4 I 🛛 5 16 Q 6 IΠ 15 **Q** 7 14**|**Q ΙΓ I**[**8 13 Q I**∏**9 12 1/0 GND [] 10 11 0E TIBPAL16R8' C SUFFIX ... J OR N PACKAGE M SUFFIX ... J OR W PACKAGE (TOP VIEW) 20 VCC CLK [1 I 2 19 Q 1 3 18 🛛 Q ΙΠ 4 17 Q ΙП 5 16 Q ΙΓ 6 15 🛛 Q 14 Q Ιſ 7 13 Q Ιſ 8 Ιſ 9 12 Q GND [] 10 11 0E

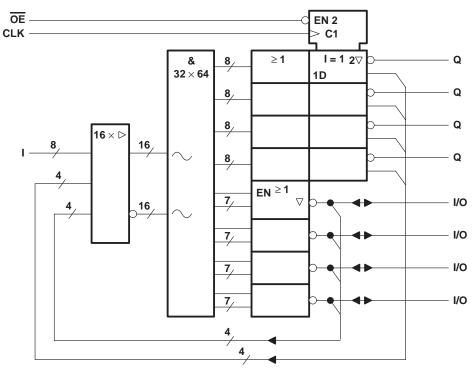




functional block diagrams (positive logic)



TIBPAL16R4



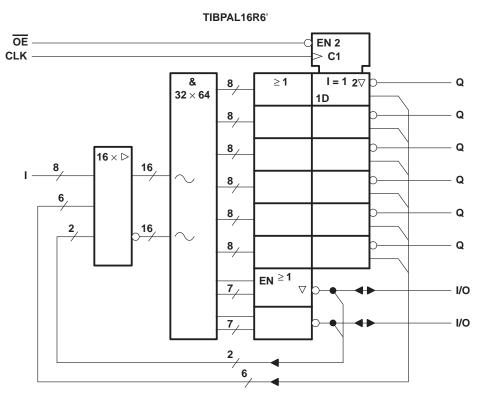
 \bigcirc denotes fused inputs

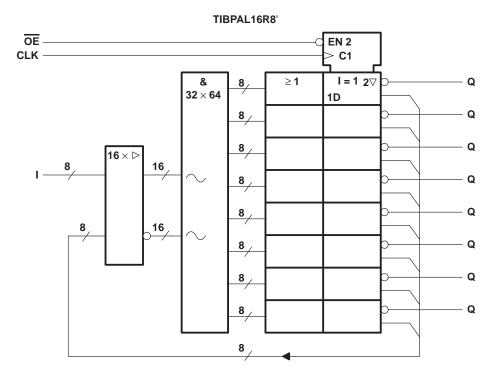


TIBPAL16R6-25C, TIBPAL16R8-25C TIBPAL16R6-30M, TIBPAL16R8-30M LOW-POWER HIGH-PERFORMANCE IMPACT M PAL® CIRCUITS

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functional block diagrams (positive logic)

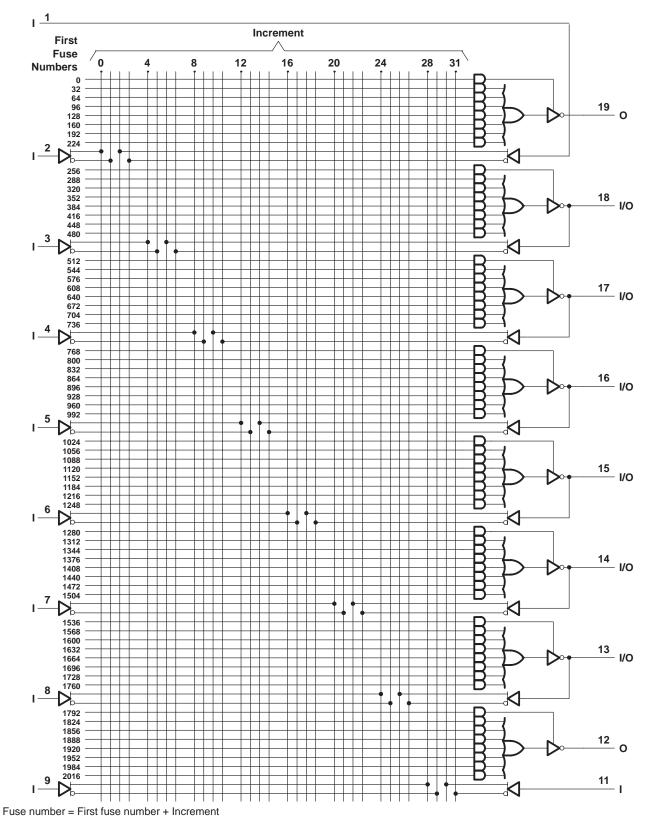




J denotes fused inputs 1



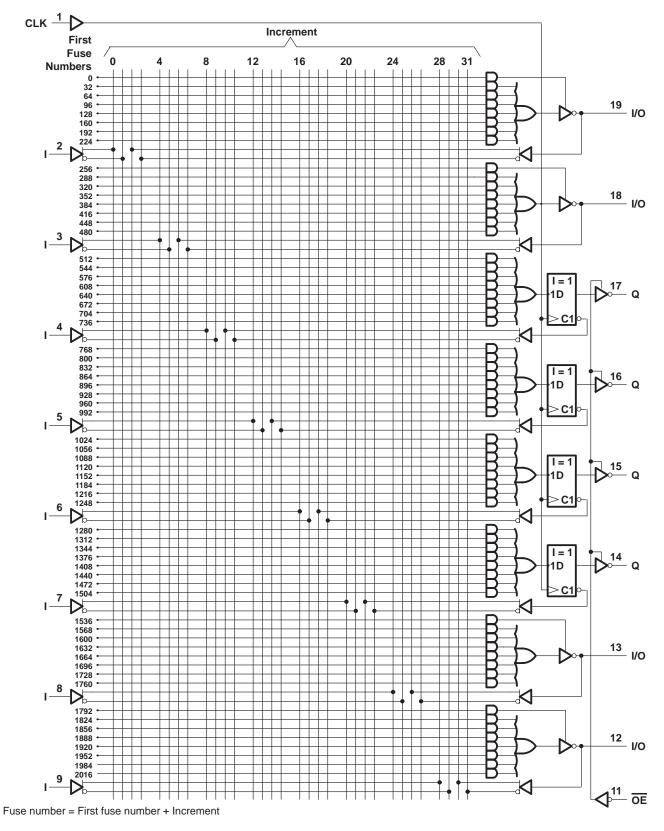
logic diagram (positive logic)





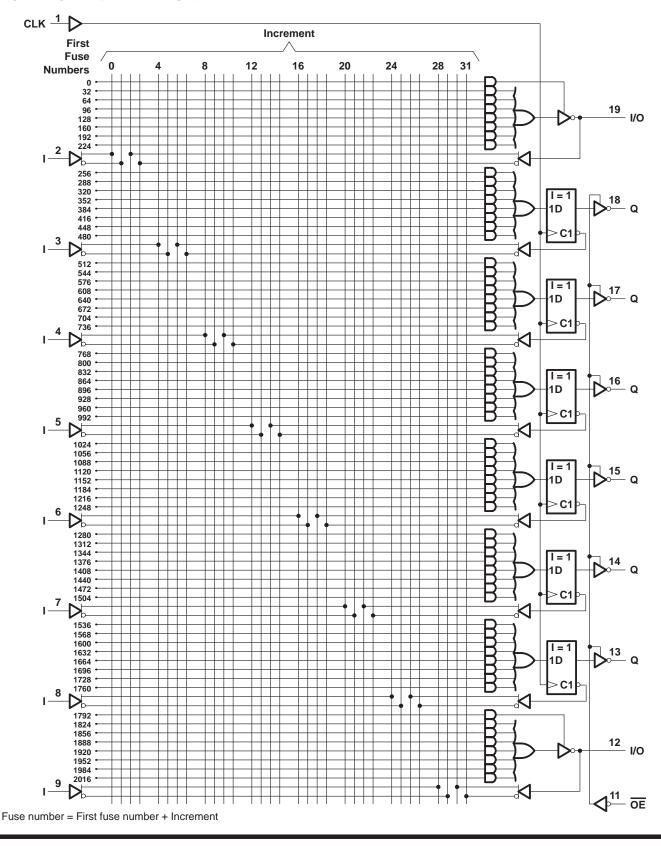
TIBPAL16R4-25C TIBPAL16R4-30M LOW-POWER HIGH-PERFORMANCE IMPACT TM PAL® CIRCUITS SRPS059 – FEBRUARY 1984 – REVISED APRIL 2000

logic diagram (positive logic)





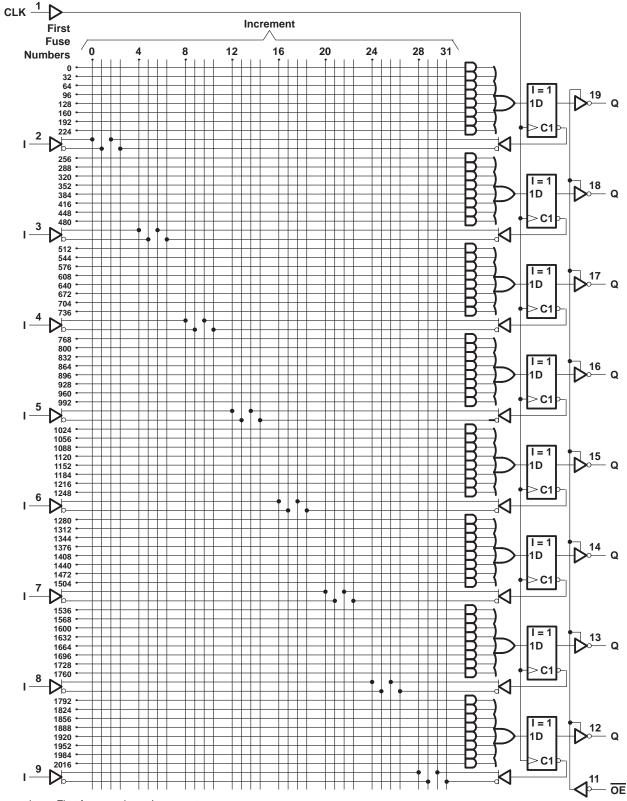
logic diagram (positive logic)





TIBPAL16R8-25C TIBPAL16R8-30M LOW-POWER HIGH-PERFORMANCE IMPACT M PAL® CIRCUITS SRPS059 – FEBRUARY 1984 – REVISED APRIL 2000

logic diagram (positive logic)



Fuse number = First fuse number + Increment



TIBPAL16L8-25C, TIBPAL16R4-25C, TIBPAL16R6-25C, TIBPAL16R8-25C LOW-POWER HIGH-PERFORMANCE *IMPACT*™ *PAL*[®] CIRCUITS

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absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, V _{CC} (see Note 1) Input voltage (see Note 1)	
Voltage applied to disabled output (see Note 1) Operating free-air temperature range	5.5 V
Storage temperature range, T _{stg}	

NOTE 1: These ratings apply, except for programming pins, during a programming cycle.

recommended operating conditions

			MIN	NOM	MAX	UNIT
Vcc	Supply voltage		4.75	5	5.25	V
VIH	High-level input voltage		2		5.5	V
VIL	Low-level input voltage				0.8	V
ЮН	IOH High-level output current					mA
IOL	IOL Low-level output current				24	mA
fclock	Clock frequency				30	MHz
+	Pulse duration, clock (see Note 2)	High	10			ns
t _W	Fuise duration, clock (see Note 2)	Low	15			115
t _{su}	su Setup time, input or feedback before clock↑					ns
t _h	Hold time, input or feedback after clock↑					ns
Т _А	T _A Operating free-air temperature				75	°C

NOTE 2: The total clock period of clock high and clock low must not exceed clock frequency, f_{clock}. The minimum pulse durations specified are for clock high or low only, but not for both simultaneously.



TIBPAL16L8-25C, TIBPAL16R4-25C, TIBPAL16R6-25C, TIBPAL16R8-25C LOW-POWER HIGH-PERFORMANCE *IMPACT*™ *PAL*[®] CIRCUITS

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electrical characteristics over recommended operating free-air temperature range

F	PARAMETER		TEST CONDITIONS				MAX	UNIT
VIK		V _{CC} = 4.75 V,	lj = -18 mA				-1.5	V
∨он		V _{CC} = 4.75 V,	I _{OH} = -3.2 mA		2.4	3.3		V
VOL		V _{CC} = 4.75 V,	I _{OL} = 24 mA			0.35	0.5	V
	Outputs		$\lambda = 27 \lambda$	<u> </u>			20	
lozн	I/O ports	$V_{CC} = 5.25 V,$	V _O = 2.7 V				100	μA
1	Outputs						-20	A
IOZL	I/O ports	$V_{CC} = 5.25 V,$	V _O = 0.4 V				-250	μA
Ц		V _{CC} = 5.25 V,	VI = 5.5 V				0.1	mA
Ιн		V _{CC} = 5.25 V,	VI = 2.7 V				20	μΑ
۱ _{IL}		V _{CC} = 5.25 V,	VI = 0.4 V				-0.25	mA
10‡		V _{CC} = 5.25 V,	V _O = 2.25 V		-30		-125	mA
ICC		V _{CC} = 5.25 V,	$V_{I} = 0,$	Outputs open		75	100	mA

[†] All typical values are at V_{CC} = 5 V, T_A = 25°C. [‡] The output conditions have been chosen to produce a current that closely approximates one-half of the short-circuit output current, I_{OS}.

switching characteristics over recommended ranges of supply voltage and operating free-air temperature (unless otherwise noted)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	түр†	MAX	UNIT
fmax				30			MHz
^t pd	I, I/O	O, I/O			15	25	ns
^t pd	CLK↑	Q	R1 = 500 Ω,		10	15	ns
ten	OE↓	Q	R2 = 500 Ω,		15	20	ns
^t dis	OE↑	Q	See Figure 3		10	20	ns
ten	I, I/O	O, I/O]		14	25	ns
^t dis	I, I/O	O, I/O			13	25	ns

[†] All typical values are at V_{CC} = 5 V, T_A = 25°C.



TIBPAL16L8-30M, TIBPAL16R4-30M, TIBPAL16R6-30M, TIBPAL16R8-30M LOW-POWER HIGH-PERFORMANCE *IMPACT* ™ *PAL*[®] CIRCUITS

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absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, V _{CC} (see Note 1) Input voltage (see Note 1)	
Voltage applied to disabled output (see Note 1) Operating free-air temperature range	5.5 V
Storage temperature range, T _{stg}	

NOTE 1: These ratings apply, except for programming pins, during a programming cycle.

recommended operating conditions

			MIN	NOM	MAX	UNIT
Vcc	Supply voltage		4.5	5	5.5	V
VIH	High-level input voltage		2		5.5	V
VIL	Low-level input voltage				0.8	V
ЮН	IOH High-level output current					mA
IOL	OL Low-level output current				12	mA
fclock	Clock frequency	-	0		25	MHz
+	Pulse duration, clock (see Note 2)	High	15			ns
t _W	ruise duration, clock (see Note 2)	Low	20			115
t _{su}	Setup time, input or feedback before clock \uparrow		25			ns
t _h	Hold time, input or feedback after clock1					ns
Т _А	Operating free-air temperature		-55	25	125	°C

NOTE 2: The total clock period of clock high and clock low must not exceed clock frequency, f_{clock}. The minimum pulse durations specified are for clock high or low only, but not for both simultaneously.



TIBPAL16L8-30M, TIBPAL16R4-30M, TIBPAL16R6-30M, TIBPAL16R8-30M LOW-POWER HIGH-PERFORMANCE *IMPACT™ PAL*[®] CIRCUITS

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		•	•		-		
ARAMETER		TEST CONDITION	S	MIN	TYP [†]	MAX	UNIT
	V _{CC} = 4.5 V,	lj = -18 mA				-1.5	V
	V _{CC} = 4.5 V,	I _{OH} = -2 mA		2.4	3.2		V
	V _{CC} = 4.5 V,	I _{OL} = 12 mA			0.25	0.4	V
Outputs		$\lambda = 27 \lambda$				20	
I/O ports	VCC = 5.5 V	$v_{\rm O} = 2.7 v$				100	μA
Outputs		$\lambda = 0.4 \lambda$				-20	
I/O ports	VCC = 5.5 V,	VO = 0.4 V				-250	μA
Pin 1, 11						0.2	mA
All others	$v_{\rm CC} = 5.5 v,$	v] = 5.5 v				0.1	ШA
Pin 1, 11						50	
I/O ports	V _{CC} = 5.5 V,	V _I = 2.7 V				100	μΑ
All others						20	
I/O ports						-0.25	A
All others	vCC = 5.5 v,	v] = 0.4 v	V] = 0.4 V			-0.2 mA	
	V _{CC} = 5.5 V,	$V_{O} = 0.5 V$		-30		-250	mA
	V _{CC} = 5.5 V,	V _I = 0,	Outputs open		75	105	mA
	Outputs I/O ports Outputs I/O ports Pin 1, 11 All others Pin 1, 11 I/O ports All others I/O ports	$V_{CC} = 4.5 \text{ V},$ $V_{CC} = 5.5 \text{ V},$ $V_{CC} = 5.5 \text{ V},$ $V_{CC} = 5.5 \text{ V},$ $Pin 1, 11 $ $V_{CC} = 5.5 \text{ V},$ $Pin 1, 11 $ $V_{CC} = 5.5 \text{ V},$ $All others$ $V_{CC} = 5.5 \text{ V},$	$\begin{tabular}{ c c c c c } \hline V_{CC} = 4.5 \ V, & I_I = -18 \ mA \\ \hline V_{CC} = 4.5 \ V, & I_{OH} = -2 \ mA \\ \hline V_{CC} = 4.5 \ V, & I_{OL} = 12 \ mA \\ \hline V_{CC} = 4.5 \ V, & I_{OL} = 12 \ mA \\ \hline V_{CC} = 5.5 \ V, & V_O = 2.7 \ V \\ \hline \hline V_O \ ports & V_{CC} = 5.5 \ V, & V_O = 0.4 \ V \\ \hline \hline V_O \ ports & V_{CC} = 5.5 \ V, & V_I = 0.4 \ V \\ \hline Pin \ 1, \ 11 & V_{CC} = 5.5 \ V, & V_I = 5.5 \ V \\ \hline Pin \ 1, \ 11 & V_{CC} = 5.5 \ V, & V_I = 2.7 \ V \\ \hline All \ others & V_{CC} = 5.5 \ V, & V_I = 0.4 \ V \\ \hline V_{CC} = 5.5 \ V, & V_I = 0.4 \ V \\ \hline end{tabular}$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{tabular}{ c c c c c } & V_{CC} = 4.5 \ V, & I_I = -18 \ mA & & & & & & & & & & & & & & & & & & $	$\begin{tabular}{ c c c c c c } \hline V_{CC} = 4.5 \ V, & I_I = -18 \ mA & -1.5 \\ \hline V_{CC} = 4.5 \ V, & I_{OH} = -2 \ mA & 2.4 & 3.2 \\ \hline V_{CC} = 4.5 \ V, & I_{OL} = 12 \ mA & 0.25 & 0.4 \\ \hline V_{CC} = 4.5 \ V, & I_{OL} = 12 \ mA & 0.25 & 0.4 \\ \hline 0.025 & 0.4 & 0.25 & 0.4 \\ \hline 0.025 & 0.4 & 0.25 & 0.4 \\ \hline 0.025 & 0.4 & 0.25 & 0.4 \\ \hline 0.000 & 0.000 & 0.000 & 0 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.4 \ V & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0.000 & 0.000 & 0.000 & 0.000 & 0 \\ \hline 0.000 & 0$

electrical characteristics over recommended operating free-air temperature range

[†] All typical values are at $V_{CC} = 5 \text{ V}$, $T_A = 25^{\circ}\text{C}$.

* Not more than one output should be shorted at a time, and the duration of the short circuit should not exceed one second. Set V_O at 0.5 V to avoid test-equipment degradation.

switching characteristics over recommended ranges of supply voltage and operating free-air temperature (unless otherwise noted)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	түр†	MAX	UNIT
fmax				25			MHz
^t pd	I, I/O	O, I/O			15	30	ns
^t pd	CLK↑	Q	R1 = 390 Ω,		10	20	ns
ten	OE↓	Q	R2 = 750 Ω,		15	25	ns
^t dis	OE↑	Q	See Figure 4		10	25	ns
ten	I, I/O	O, I/O			14	30	ns
^t dis	I, I/O	O, I/O			13	30	ns

[†] All typical values are at V_{CC} = 5 V, T_A = 25°C.



TIBPAL16L8-25C, TIBPAL16R4-25C, TIBPAL16R6-25C, TIBPAL16R8-25C TIBPAL16L8-30M, TIBPAL16R4-30M, TIBPAL16R6-30M, TIBPAL16R8-30M LOW-POWER HIGH-PERFORMANCE IMPACT TM PAL[®] CIRCUITS SRP5059 - FEBRUARY 1984 - REVISED APRIL 2000

programming information

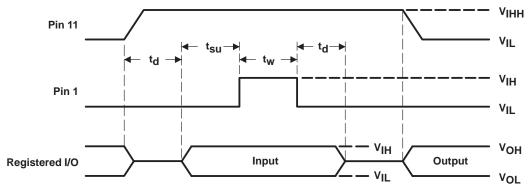
Texas Instruments programmable logic devices can be programmed using widely available software and inexpensive device programmers.

Complete programming specifications, algorithms, and the latest information on hardware, software, and firmware are available upon request. Information on programmers capable of programming Texas Instruments programmable logic also is available, upon request, from the nearest TI field sales office or local authorized TI distributor, by calling Texas Instruments at +1 (972) 644–5580, or by visiting the TI Semiconductor Home Page at www.ti.com/sc.

preload procedure for registered outputs (see Figure 1 and Note 3)

The output registers can be preloaded to any desired state during device testing. This permits any state to be tested without having to step through the entire state-machine sequence. Each register is preloaded individually by following the steps given below.

- Step 1. With V_{CC} at 5 V and Pin 1 at V_{IL}, raise Pin 11 to V_{IHH}.
- Step 2. Apply either V_{IL} or V_{IH} to the output corresponding to the register to be preloaded.
- Step 3. Pulse Pin 1, clocking in preload data.
- Step 4. Remove output voltage, then lower Pin 11 to V_{IL}. Preload can be verified by observing the voltage level at the output pin.



NOTE 3: $t_d = t_{SU} = t_h = 100 \text{ ns to } 1000 \text{ ns } V_{IHH} = 10.25 \text{ V to } 10.75 \text{ V}$

Figure 1. Preload Waveforms

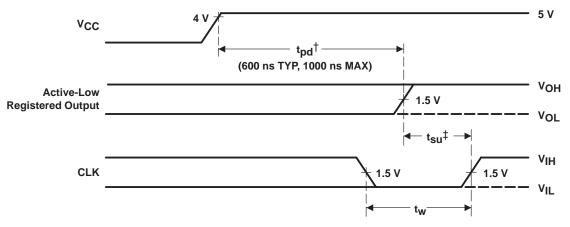


TIBPAL16L8-25C, TIBPAL16R4-25C, TIBPAL16R6-25C, TIBPAL16R8-25C TIBPAL16L8-30M, TIBPAL16R4-30M, TIBPAL16R6-30M, TIBPAL16R8-30M LOW-POWER HIGH-PERFORMANCE *IMPACT*™ *PAL*[®] CIRCUITS

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power-up reset (see Figure 2)

Following power up, all registers are set high. This feature provides extra flexibility to the system designer and is especially valuable in simplifying state-machine initialization. To ensure a valid power-up reset, it is important that the rise of V_{CC} be monotonic. Following power-up reset, a low-to-high clock transition must not occur until all applicable input and feedback setup times are met.



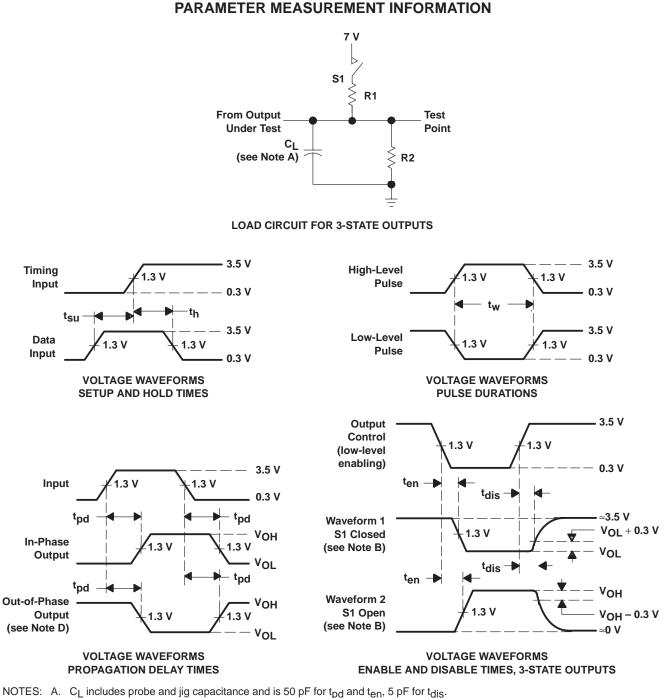
[†] This is the power-up reset time and applies to registered outputs only. The values shown are from characterization data. [‡] This is the setup time for input or feedback.

Figure 2. Power-Up Reset Waveforms



TIBPAL16L8-25C, TIBPAL16R4-25C, TIBPAL16R6-25C, TIBPAL16R8-25C LOW-POWER HIGH-PERFORMANCE IMPACT TM PAL® CIRCUITS

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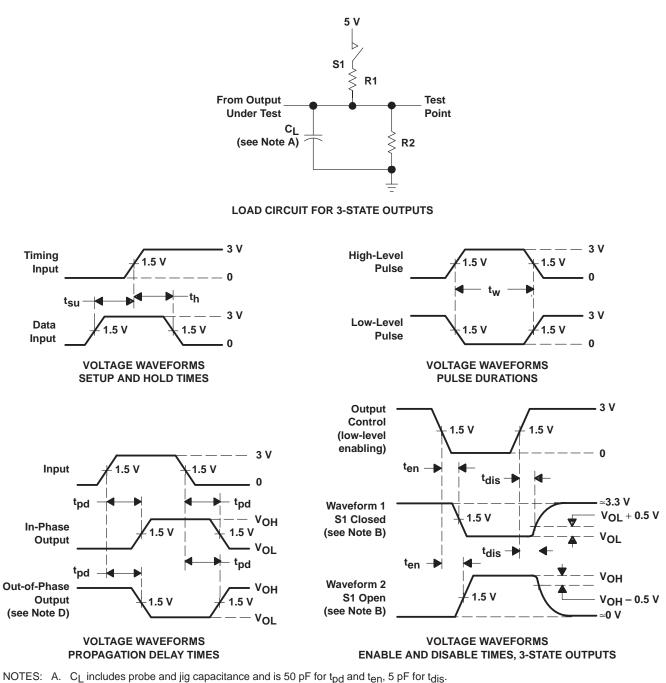
- B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.
- C. All input pulses have the following characteristics: PRR \leq 1 MHz, t_r = t_f \leq 2 ns, duty cycle = 50%
- D. When measuring propagation delay times of 3-state outputs from low to high, switch S1 is closed.
- When measuring propagation delay times of 3-state outputs from high to low, switch S1 is open.
- E. Equivalent loads may be used for testing.

Figure 3. Load Circuit and Voltage Waveforms



TIBPAL16L8-25C, TIBPAL16R4-25C, TIBPAL16R6-25C, TIBPAL16R8-25C LOW-POWER HIGH-PERFORMANCE IMPACT M PAL® CIRCUITS

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PARAMETER MEASUREMENT INFORMATION

- B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control. C. All input pulses have the following characteristics: PRR \leq 10 MHz, t_r = t_f \leq 2 ns, duty cycle = 50%
- D. When measuring propagation delay times of 3-state outputs, switch S1 is closed.
- E. Equivalent loads may be used for testing.







TEXAS INSTRUMENTS www.ti.com

4-Mar-2005

PACKAGING INFORMATION

5982-85155052A ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC 5982-85155057A ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5982-85155057A ACTIVE CCCC FK 20 1 None Call TI Level-NC-NC-NC 5982-85155058A ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5982-85155057A ACTIVE CDCC FK 20 1 None Call TI Level-NC-NC-NC 5982-85155057A ACTIVE CDCC FK 20 1 None Call TI Level-NC-NC-NC 5982-85155057A ACTIVE CDCC FK 20 1 None Call TI Level-NC-NC-NC 5982-85155057A ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5982-85155058A ACTIVE CDIP J 20 1 None	Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/Ball Finish	MSL Peak Temp ⁽³⁾
5962-8515505SA ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC 5962-85155062A ACTIVE CCC FK 20 1 None Call TI Level-NC-NC-NC 5962-85155065A ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC 5962-85155072A ACTIVE CCC FK 20 1 None Call TI Level-NC-NC-NC 5962-85155073A ACTIVE CCC FK 20 1 None Call TI Level-NC-NC-NC 5962-85155073A ACTIVE CCC FK 20 1 None Call TI Level-NC-NC-NC 5962-85155083A ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510506058RA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510506058RA ACTIVE CDIP J 20 1 None	5962-85155052A	ACTIVE	LCCC	FK	20	1	None	Call TI	Level-NC-NC-NC
5962-85155062A ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC 5962-8515506RA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5962-8515507ZA ACTIVE CCC FK 20 1 None Call TI Level-NC-NC-NC 5962-8515507ZA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5962-8515507ZA ACTIVE CCC FK 20 1 None Call TI Level-NC-NC-NC 5962-8515508ZA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM3851056065BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510560607BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510560607BRA ACTIVE CDIP J 20 1 None	5962-8515505RA	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
5962-8515506RA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5962-85155078A ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC 5962-85155078A ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5962-85155078A ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC 5962-85155082A ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC 5962-85155085A ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC JM38510/560698RA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/560698RA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/560698RA ACTIVE CDIP J 20 1 None	5962-8515505SA	ACTIVE	CFP	W	20	1	None	Call TI	Level-NC-NC-NC
5962-8515506SA ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC 5962-8515507ZA ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC 5962-8515507SA ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC 5962-8515507SA ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC 5962-8515508RA ACTIVE CDP J 20 1 None Call TI Level-NC-NC-NC 5962-8515508RA ACTIVE CDP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MERA ACTIVE PLCC FN 20 1 None	5962-85155062A	ACTIVE	LCCC	FK	20	1	None	Call TI	Level-NC-NC-NC
5962-85155072A ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC 5962-8515507RA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5962-85155087A ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC 5962-85155087A ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5962-85155087A ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50606BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50606BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-25CFN ACTIVE PLCC FN 20 46 None<	5962-8515506RA	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
5962-8515507RA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5962-8515508A ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC 5962-8515508A ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC 5962-8515508A ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50607BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50607BRA ACTIVE PDIP N 20 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJ ACTIVE PDIP N 20 None <td>5962-8515506SA</td> <td>ACTIVE</td> <td>CFP</td> <td>W</td> <td>20</td> <td>1</td> <td>None</td> <td>Call TI</td> <td>Level-NC-NC-NC</td>	5962-8515506SA	ACTIVE	CFP	W	20	1	None	Call TI	Level-NC-NC-NC
5962-8515507SA ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC 5962-85155082A ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC 5962-8515508RA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50607BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50607BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JBPAL16L8-25CFN ACTIVE PLCC FN 20 A None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 Non	5962-85155072A	ACTIVE	LCCC	FK	20	1	None	Call TI	Level-NC-NC-NC
5962-85155082A ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC 5962-8515508SA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC J962-8515508SA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE PDIP N 20 None Call TI Level-NC-NC-NC TIBPAL16L8-30MFKB ACTIVE PDIP N 20 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI	5962-8515507RA	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
5962-8515508RA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC 5962-8515508SA ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50607BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50608BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MFA ACTIVE PLCC FN 20 46 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MWB ACTIVE CDIP J 20 1	5962-8515507SA	ACTIVE	CFP	W	20	1	None	Call TI	Level-NC-NC-NC
5962-8515508SA ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE PLCC FN 20 46 None Call TI Level-NC-NC-NC TIBPAL16L8-30MFKB ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1	5962-85155082A	ACTIVE	LCCC	FK	20	1	None	Call TI	Level-NC-NC-NC
JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50605BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50607BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50607BRA ACTIVE PLCC FN 20 46 None Call TI Level-NC-NC-NC TIBPAL16L8-25CN ACTIVE PDIP N 20 20 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16R4-30MJB ACTIVE PLCC FN 20 1	5962-8515508RA	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
JM38510/50606BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50607BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50608BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-25CFN ACTIVE PDIP N 20 20 None Call TI Level-NC-NC-NC TIBPAL16L8-30MFKB ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJ ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MVB ACTIVE PDIP N 20 20	5962-8515508SA	ACTIVE	CFP	W	20	1	None	Call TI	Level-NC-NC-NC
JM38510/50607BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC JM38510/50608BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-25CFN ACTIVE PLCC FN 20 46 None Call TI Level-NC-NC-NC TIBPAL16L8-30MFKB ACTIVE PDIP N 20 20 None Call TI Level-NC-NC-NC TIBPAL16L8-30MFKB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE PLCC FN 20 46 None Call TI Level-NC-NC-NC TIBPAL16R4-30MJA ACTIVE PDIP N 20 1	JM38510/50605BRA	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
JM38510/50608BRA ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-25CFN ACTIVE PLCC FN 20 46 None Call TI Level-NC-NC-NC TIBPAL16L8-25CN ACTIVE PDIP N 20 20 None Call TI Level-NC-NC-NC TIBPAL16L8-30MFKB ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJ ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16R4-30MJB ACTIVE CDFP W 20 1 None Call TI Level-NC-NC-NC TIBPAL16R4-30MWB ACTIVE PDCC FN 20 46 None Call TI Level-NC-NC-NC TIBPAL16R4-30MJB ACTIVE CDIP J 20 1	JM38510/50606BRA	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16L8-25CFN ACTIVE PLCC FN 20 46 None Call TI Level-1-220-UNLIM TIBPAL16L8-25CN ACTIVE PDIP N 20 20 None Call TI Level-NC-NC-NC TIBPAL16L8-30MFKB ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJ ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MWB ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC TIBPAL16R4-25CN ACTIVE PLCC FN 20 46 None Call TI Level-NC-NC-NC TIBPAL16R4-30MJKB ACTIVE PDIP N 20 20 None Call TI Level-NC-NC-NC TIBPAL16R4-30MJJ ACTIVE CDIP J 20 1	JM38510/50607BRA	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16L8-25CN ACTIVE PDIP N 20 20 None Call TI Level-NC-NC-NC TIBPAL16L8-30MFKB ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJ ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MWB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16R4-25CFN ACTIVE PLCC FN 20 46 None Call TI Level-NC-NC-NC TIBPAL16R4-30MFKB ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC TIBPAL16R4-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16R4-30MJB ACTIVE CDIP J 20 1	JM38510/50608BRA	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16L8-30MFKB ACTIVE LCCC FK 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJ ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MWB ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC TIBPAL16L8-30MWB ACTIVE PLCC FN 20 46 None Call TI Level-NC-NC-NC TIBPAL16R4-25CN ACTIVE PDIP N 20 20 None Call TI Level-NC-NC-NC TIBPAL16R4-30MFKB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16R4-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC TIBPAL16R4-30MJB ACTIVE CDIP J 20 1	TIBPAL16L8-25CFN	ACTIVE	PLCC	FN	20	46	None	Call TI	Level-1-220-UNLIM
TIBPAL16L8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16L8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16L8-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R4-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R4-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R6-25CNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC <t< td=""><td>TIBPAL16L8-25CN</td><td>ACTIVE</td><td>PDIP</td><td>Ν</td><td>20</td><td>20</td><td>None</td><td>Call TI</td><td>Level-NC-NC-NC</td></t<>	TIBPAL16L8-25CN	ACTIVE	PDIP	Ν	20	20	None	Call TI	Level-NC-NC-NC
TIBPAL16L8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16L8-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R4-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R4-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC <td< td=""><td>TIBPAL16L8-30MFKB</td><td>ACTIVE</td><td>LCCC</td><td>FK</td><td>20</td><td>1</td><td>None</td><td>Call TI</td><td>Level-NC-NC-NC</td></td<>	TIBPAL16L8-30MFKB	ACTIVE	LCCC	FK	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16L8-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R4-25CFNACTIVEPLCCFN2046NoneCall TILevel-1-220-UNLIMTIBPAL16R4-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R6-25CFNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC <t< td=""><td>TIBPAL16L8-30MJ</td><td>ACTIVE</td><td>CDIP</td><td>J</td><td>20</td><td>1</td><td>None</td><td>Call TI</td><td>Level-NC-NC-NC</td></t<>	TIBPAL16L8-30MJ	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R4-25CFNACTIVEPLCCFN2046NoneCall TILevel-1-220-UNLIMTIBPAL16R4-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVEPLCCFN201NoneCall TILevel-NC-NC-NC <td>TIBPAL16L8-30MJB</td> <td>ACTIVE</td> <td>CDIP</td> <td>J</td> <td>20</td> <td>1</td> <td>None</td> <td>Call TI</td> <td>Level-NC-NC-NC</td>	TIBPAL16L8-30MJB	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R4-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R6-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NC-NC	TIBPAL16L8-30MWB	ACTIVE	CFP	W	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R4-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R6-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R6-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJKBACTIVEPDIPN2020NoneCall TILevel-NC-NC-NC-NC <td>TIBPAL16R4-25CFN</td> <td>ACTIVE</td> <td>PLCC</td> <td>FN</td> <td>20</td> <td>46</td> <td>None</td> <td>Call TI</td> <td>Level-1-220-UNLIM</td>	TIBPAL16R4-25CFN	ACTIVE	PLCC	FN	20	46	None	Call TI	Level-1-220-UNLIM
TIBPAL16R4-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R6-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R6-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJAACTIVECDIPJ201NoneCall TILevel-NC-NC-NC-NC	TIBPAL16R4-25CN	ACTIVE	PDIP	Ν	20	20	None	Call TI	Level-NC-NC-NC
TIBPAL16R4-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R4-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R6-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R6-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NC <tr< td=""><td>TIBPAL16R4-30MFKB</td><td>ACTIVE</td><td>LCCC</td><td>FK</td><td>20</td><td>1</td><td>None</td><td>Call TI</td><td>Level-NC-NC-NC</td></tr<>	TIBPAL16R4-30MFKB	ACTIVE	LCCC	FK	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R4-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R6-25CFNACTIVEPLCCFN2046NoneCall TILevel-1-220-UNLIMTIBPAL16R6-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CNACTIVEPLCCFN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NC	TIBPAL16R4-30MJ	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R6-25CFNACTIVEPLCCFN2046NoneCall TILevel-1-220-UNLIMTIBPAL16R6-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC<	TIBPAL16R4-30MJB	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R6-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC <td>TIBPAL16R4-30MWB</td> <td>ACTIVE</td> <td>CFP</td> <td>W</td> <td>20</td> <td>1</td> <td>None</td> <td>Call TI</td> <td>Level-NC-NC-NC</td>	TIBPAL16R4-30MWB	ACTIVE	CFP	W	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R6-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPLCCFN2046NoneCall TILevel-1-220-UNLIMTIBPAL16R8-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC	TIBPAL16R6-25CFN	ACTIVE	PLCC	FN	20	46	None	Call TI	Level-1-220-UNLIM
TIBPAL16R6-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MWBACTIVEPLCCFN2046NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPLCCFN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC	TIBPAL16R6-25CN	ACTIVE	PDIP	Ν	20	20	None	Call TI	Level-NC-NC-NC
TIBPAL16R6-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R6-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPLCCFN2046NoneCall TILevel-1-220-UNLIMTIBPAL16R8-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC	TIBPAL16R6-30MFKB	ACTIVE	LCCC	FK	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R6-30MWBACTIVECFPW201NoneCall TILevel-NC-NC-NCTIBPAL16R8-25CFNACTIVEPLCCFN2046NoneCall TILevel-1-220-UNLIMTIBPAL16R8-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC	TIBPAL16R6-30MJ	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R8-25CFNACTIVEPLCCFN2046NoneCall TILevel-1-220-UNLIMTIBPAL16R8-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC	TIBPAL16R6-30MJB	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R8-25CNACTIVEPDIPN2020NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC	TIBPAL16R6-30MWB	ACTIVE	CFP	W	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R8-30MFKBACTIVELCCCFK201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC	TIBPAL16R8-25CFN	ACTIVE	PLCC	FN	20	46	None	Call TI	Level-1-220-UNLIM
TIBPAL16R8-30MJACTIVECDIPJ201NoneCall TILevel-NC-NC-NCTIBPAL16R8-30MJBACTIVECDIPJ201NoneCall TILevel-NC-NC-NC	TIBPAL16R8-25CN	ACTIVE	PDIP	Ν	20	20	None	Call TI	Level-NC-NC-NC
TIBPAL16R8-30MJB ACTIVE CDIP J 20 1 None Call TI Level-NC-NC-NC	TIBPAL16R8-30MFKB	ACTIVE	LCCC	FK	20	1	None	Call TI	Level-NC-NC-NC
	TIBPAL16R8-30MJ	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
TIBPAL16R8-30MWB ACTIVE CFP W 20 1 None Call TI Level-NC-NC-NC	TIBPAL16R8-30MJB	ACTIVE	CDIP	J	20	1	None	Call TI	Level-NC-NC-NC
	TIBPAL16R8-30MWB	ACTIVE	CFP	W	20	1	None	Call TI	Level-NC-NC-NC

⁽¹⁾ The marketing status values are defined as follows:



ACTIVE: Product device recommended for new designs.

LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

PREVIEW: Device has been announced but is not in production. Samples may or may not be available. **OBSOLETE:** TI has discontinued the production of the device.

⁽²⁾ Eco Plan - May not be currently available - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.

None: Not yet available Lead (Pb-Free).

Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.

Green (RoHS & no Sb/Br): TI defines "Green" to mean "Pb-Free" and in addition, uses package materials that do not contain halogens, including bromine (Br) or antimony (Sb) above 0.1% of total product weight.

⁽³⁾ MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDECindustry standard classifications, and peak solder temperature.

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