

1.5A DUAL HIGH-SPEED POWER MOSFET DRIVERS

TC4426
TC4427
TC4428

勝特力材料 886-3-5753170
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ABSOLUTE MAXIMUM RATINGS*

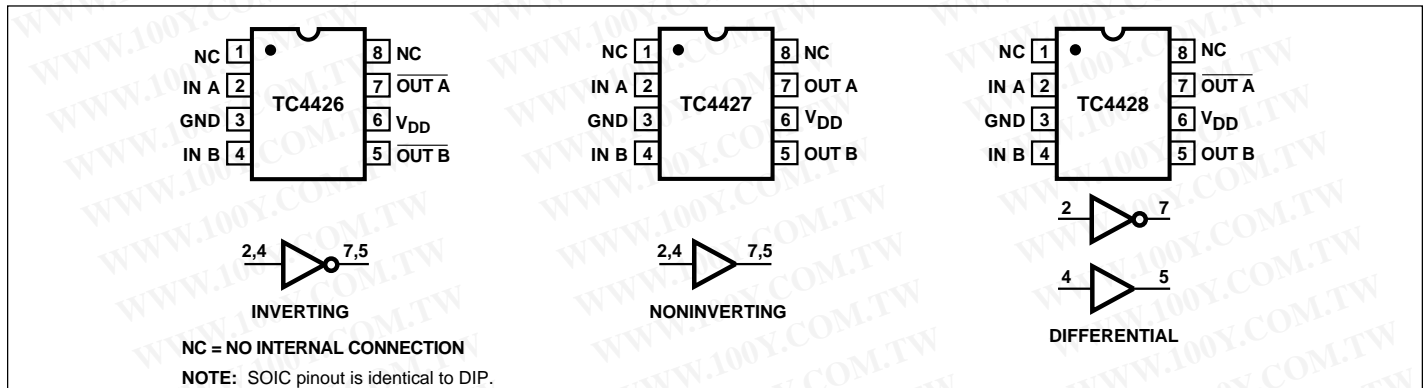
Supply Voltage	+22V
Input Voltage, IN A or IN B. ($V_{DD} + 0.3V$) to ($GND - 5.0V$)	
Maximum Chip Temperature	+150°C
Storage Temperature Range	- 65°C to +150°C
Lead Temperature (Soldering, 10 sec)	+300°C
Package Thermal Resistance	
CerDIP $R_{\theta J-A}$	150°C/W
CerDIP $R_{\theta J-C}$	50°C/W
PDIP $R_{\theta J-A}$	125°C/W
PDIP $R_{\theta J-C}$	42°C/W
SOIC $R_{\theta J-A}$	155°C/W
SOIC $R_{\theta J-C}$	45°C/W

Operating Temperature Range

C Version	0°C to +70°C
E Version	- 40°C to +85°C
M Version	- 55°C to +125°C
Package Power Dissipation ($T_A \leq 70^\circ C$)	
Plastic	730mW
CerDIP	800mW
SOIC	470mW

*Static-sensitive device. Unused devices must be stored in conductive material. Protect devices from static discharge and static fields. Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operation sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

PIN CONFIGURATIONS



ELECTRICAL CHARACTERISTICS: $T_A = +25^\circ C$ with $4.5V \leq V_{DD} \leq 18V$, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Input						
V_{IH}	Logic 1 High Input Voltage		2.4	—	—	V
V_{IL}	Logic 0 Low Input Voltage		—	—	0.8	V
I_{IN}	Input Current	$0V \leq V_{IN} \leq V_{DD}$	-1	—	1	μA
Output						
V_{OH}	High Output Voltage		$V_{DD} - 0.025$	—	—	V
V_{OL}	Low Output Voltage		—	—	0.025	V
R_O	Output Resistance	$V_{DD} = 18V, I_O = 10mA$	—	7	10	Ω
I_{PK}	Peak Output Current	Duty Cycle $\leq 2\%$, $t \leq 30\mu sec$	—	1.5	—	A
I_{REV}	Latch-Up Protection Withstand Reverse Current	Duty Cycle $\leq 2\%$ $t \leq 30\mu sec$	> 0.5	—	—	A
Switching Time (Note 1)						
t_R	Rise Time	Figure 1	—	19	30	nsec
t_F	Fall Time	Figure 1	—	19	30	nsec
t_{D1}	Delay Time	Figure 1	—	20	30	nsec
t_{D2}	Delay Time	Figure 1	—	40	50	nsec
Power Supply						
I_S	Power Supply Current	$V_{IN} = 3V$ (Both Inputs) $V_{IN} = 0V$ (Both Inputs)	—	—	4.5 0.4	mA mA

NOTE: 1. Switching times are guaranteed by design.

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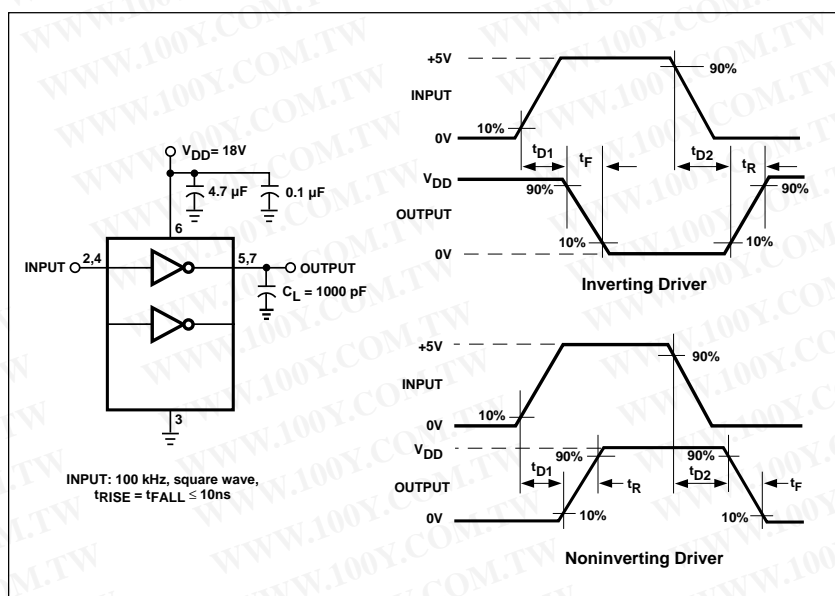
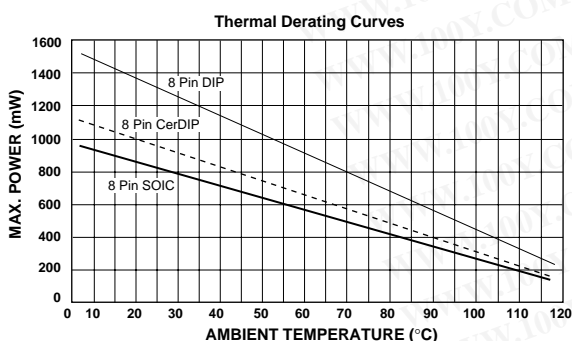
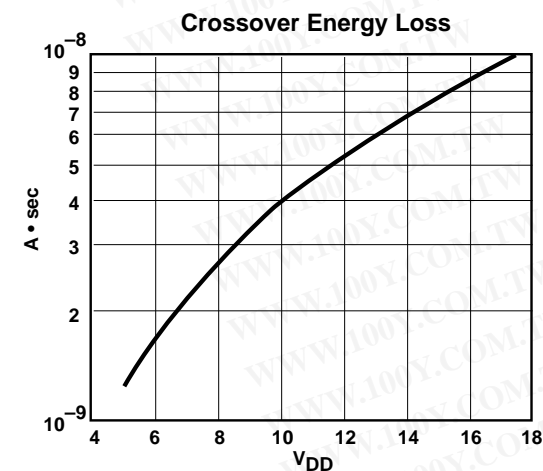
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ELECTRICAL CHARACTERISTICS: Specifications measured over operating temperature range with $4.5V \leq V_{DD} \leq 18V$, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Input						
V_{IH}	Logic 1 High Input Voltage		2.4	—	—	V
V_{IL}	Logic 0 Low Input Voltage		—	—	0.8	V
I_{IN}	Input Current	$0V \leq V_{IN} \leq V_{DD}$	-10	—	10	μA
Output						
V_{OH}	High Output Voltage		$V_{DD} - 0.025$	—	—	V
V_{OL}	Low Output Voltage		—	—	0.025	V
R_O	Output Resistance	$V_{DD} = 18V, I_O = 10mA$	—	9	12	Ω
I_{PK}	Peak Output Current	Duty Cycle $\leq 2\%$, $t \leq 300\mu sec$	—	1.5	—	A
I_{REV}	Latch-Up Protection Withstand Reverse Current	Duty Cycle $\leq 2\%$, $t \leq 300\mu sec$	> 0.5	—	—	A
Switching Time (Note 1)						
t_R	Rise Time	Figure 1	—	—	40	nsec
t_F	Fall Time	Figure 1	—	—	40	nsec
t_{D1}	Delay Time	Figure 1	—	—	40	nsec
t_{D2}	Delay Time	Figure 1	—	—	60	nsec
Power Supply						
I_S	Power Supply Current	$V_{IN} = 3V$ (Both Inputs) $V_{IN} = 0V$ (Both Inputs)	—	—	8 0.6	mA mA

NOTE: 1. Switching times are guaranteed by design.



NOTE: The values on this graph represent the loss seen by both drivers in a package during one complete cycle. For a single driver, divide the stated values by 2. For a single transition of a single driver, divide the stated value by 4.

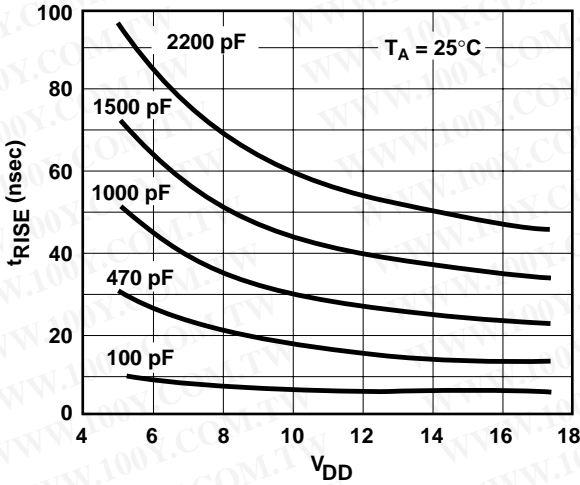
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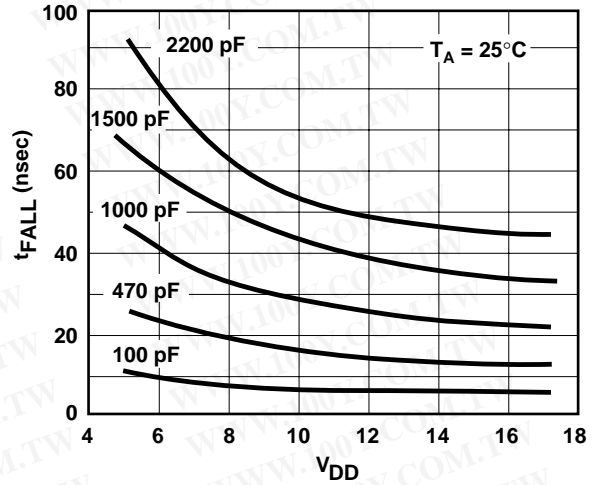
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TYPICAL CHARACTERISTICS

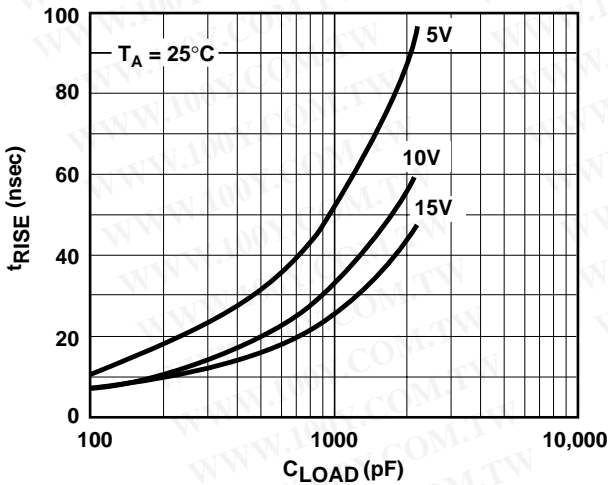
Rise Time vs. Supply Voltage



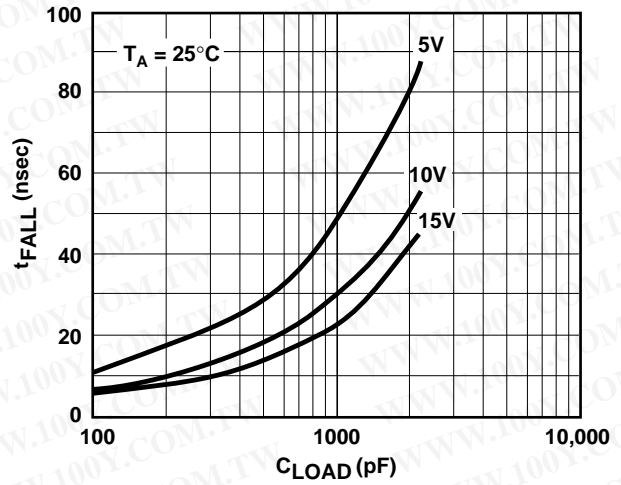
Fall Time vs. Supply Voltage



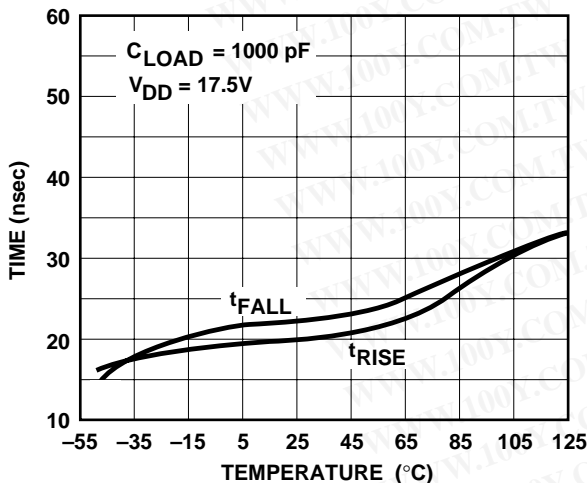
Rise Time vs. Capacitive Load



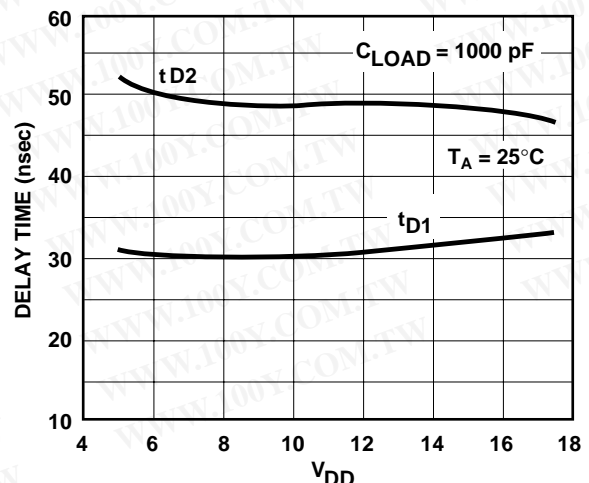
Fall Time vs. Capacitive Load



Rise and Fall Times vs. Temperature



Propagation Delay vs. Supply Voltage



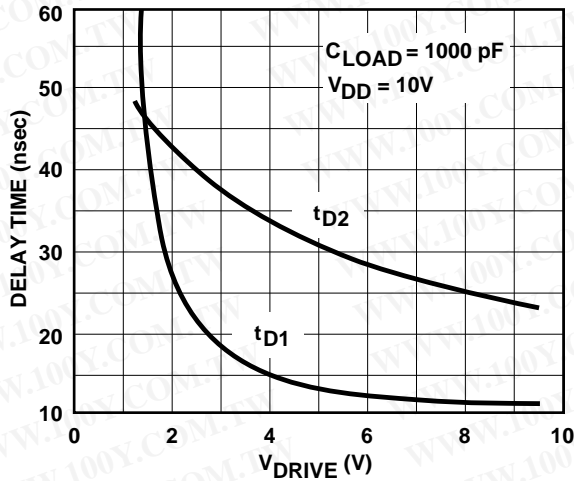
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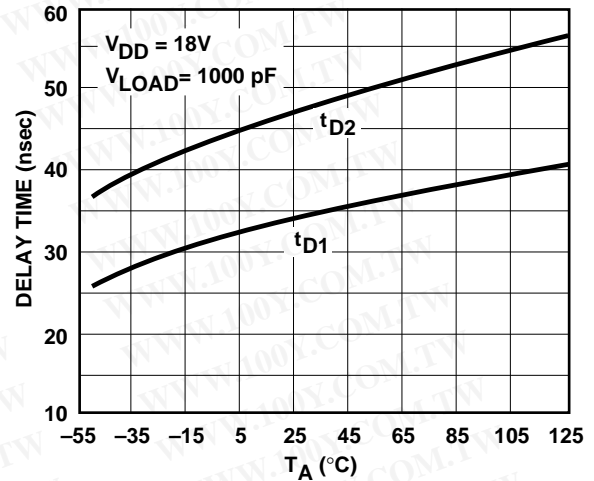
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TYPICAL CHARACTERISTICS (Cont.)

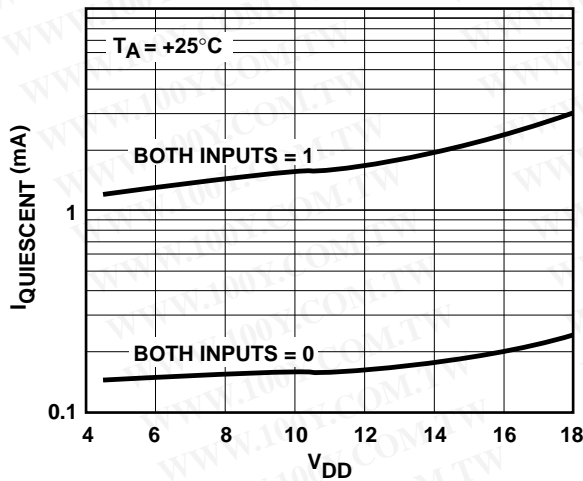
Effect of Input Amplitude on Delay Time



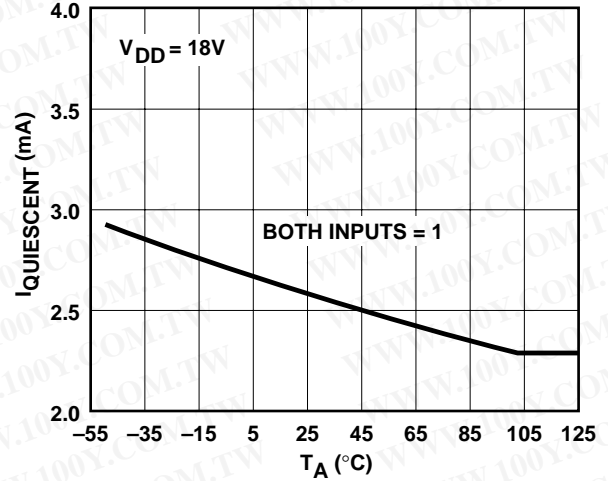
Propagation Delay Time vs. Temperature



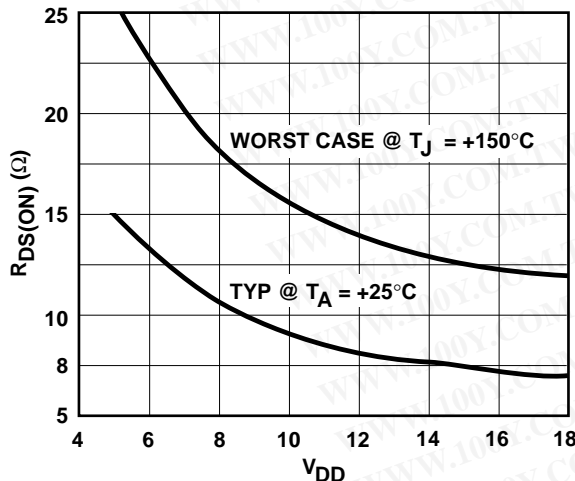
Quiescent Supply Current vs. Voltage



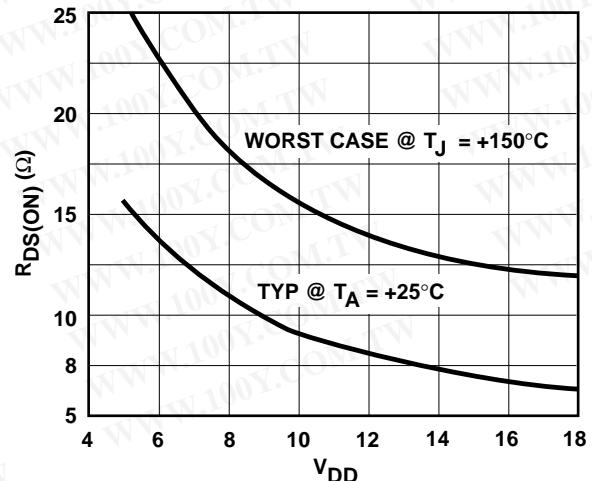
Quiescent Supply Current vs. Temperature



High-State Output Resistance



Low-State Output Resistance



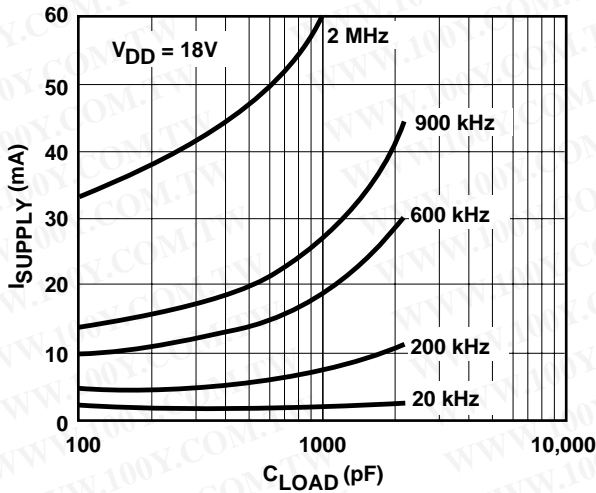
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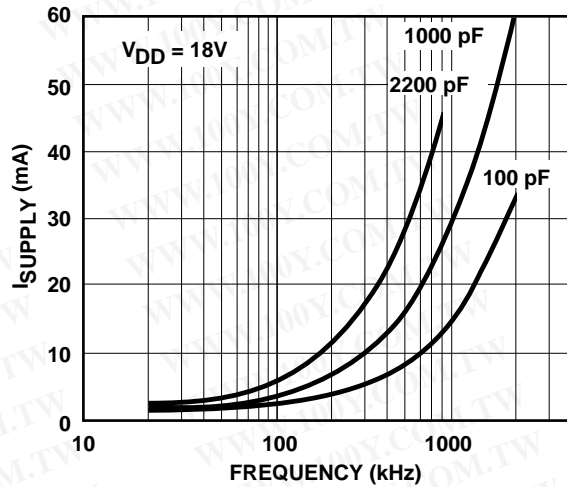
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SUPPLY CURRENT CHARACTERISTICS (Load on Single Output Only)

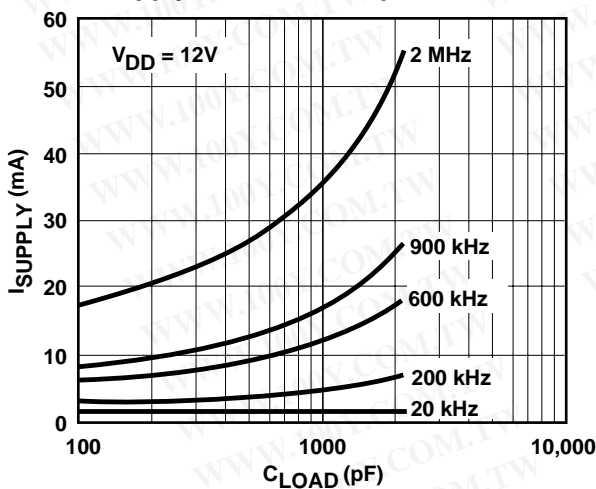
Supply Current vs. Capacitive Load



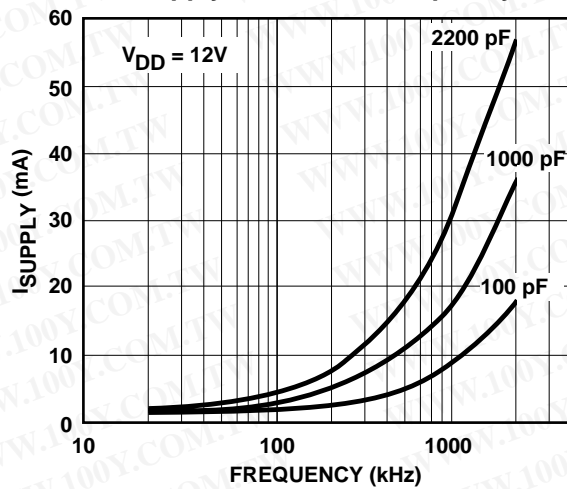
Supply Current vs. Frequency



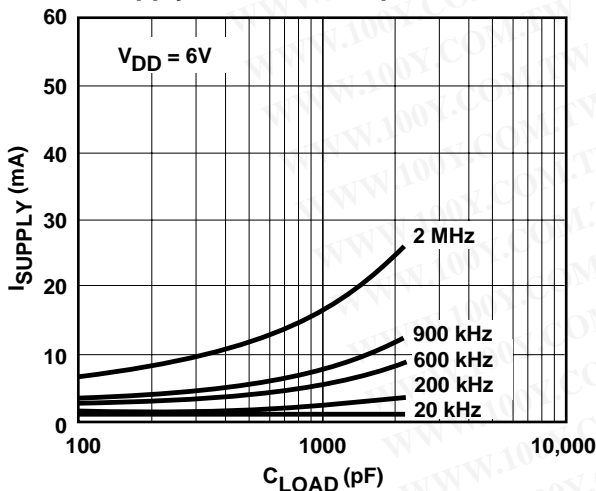
Supply Current vs. Capacitive Load



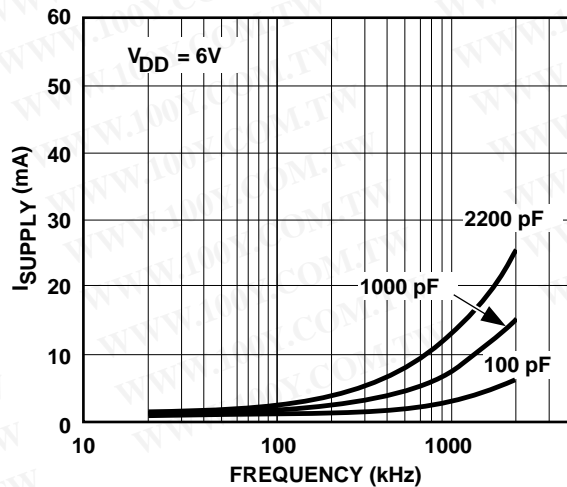
Supply Current vs. Frequency



Supply Current vs. Capacitive Load



Supply Current vs. Frequency



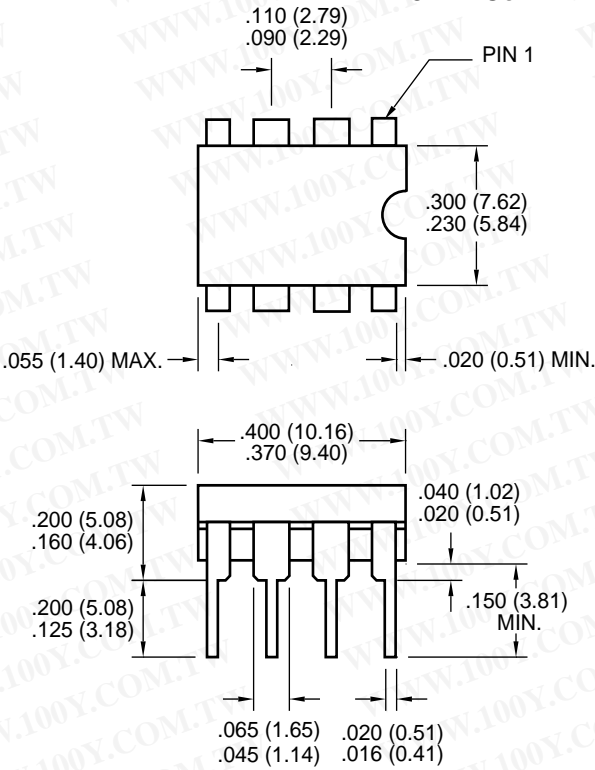
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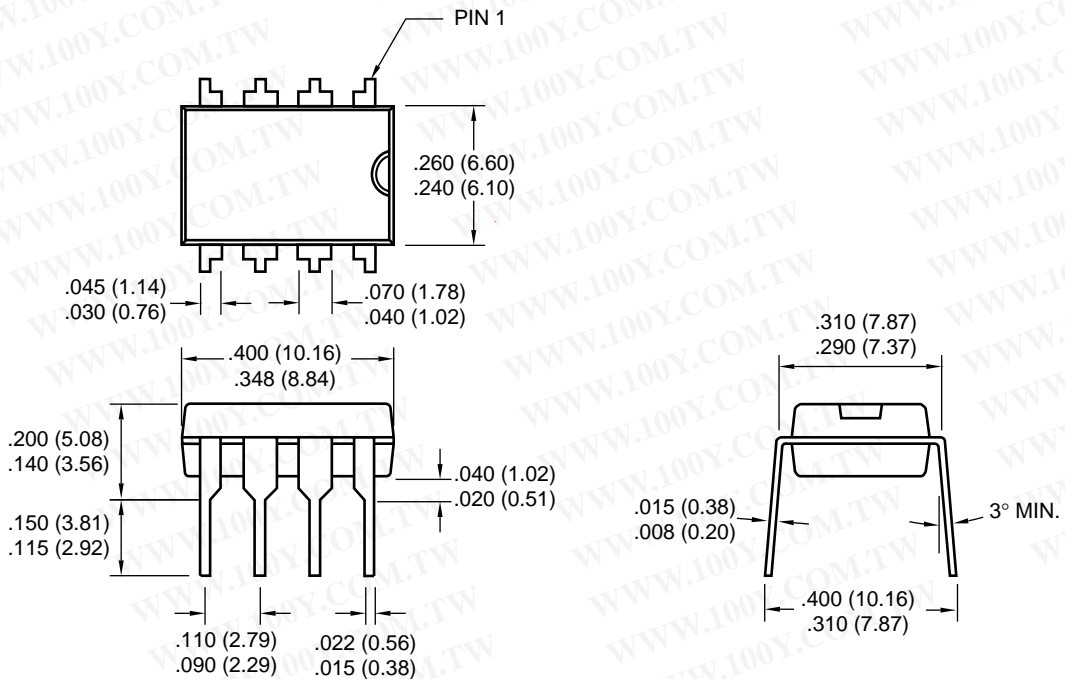
PACKAGE DIMENSIONS

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8-Pin CerDIP



8-Pin Plastic DIP

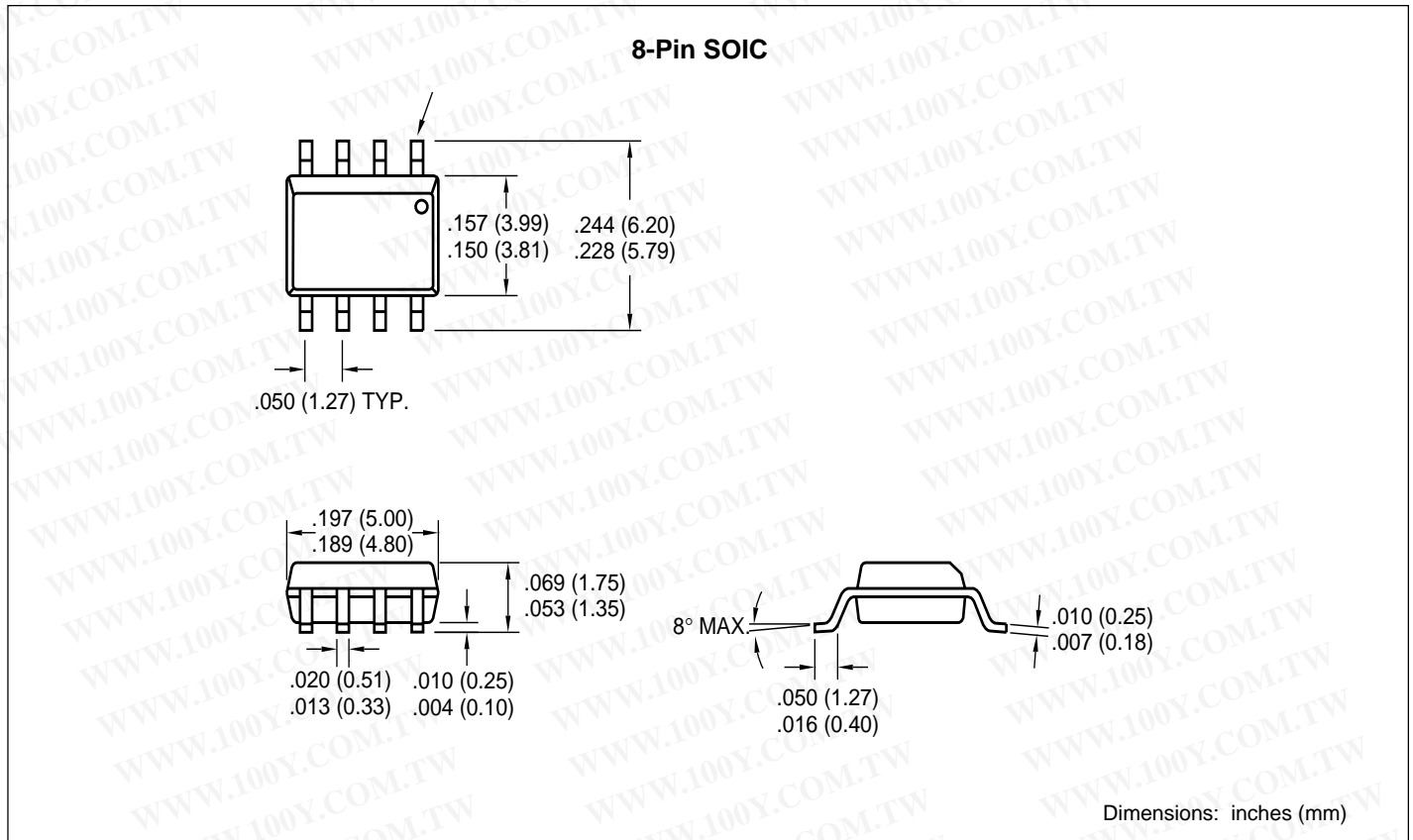


Dimensions: inches (mm)

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PACKAGE DIMENSIONS (Cont.)



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