

TC4420 TC4429

ABSOLUTE MAXIMUM RATINGS*

Supply Voltage	+20V
Input Voltage	- 5V to > V _{DD}
Input Current (V _{IN} > V _{DD})	50mA
Power Dissipation, (T _A ≤ 70°C)	
PDIP	730mW
SOIC	470mW
CerDIP	800mW
5-Pin TO-220	1.6W
Package Power Dissipation, T _C ≤ 25°C	
5-Pin TO-220 (With Heat Sink)	12.5W
Derating Factors (To Ambient)	
PDIP	8mW/°C
SOIC	4mW/°C
CerDIP	6.4mW/°C
5-Pin TO-220	12mW/°C
Thermal Impedances (To Case)	
5-Pin TO-220 R _{θJ-C}	10°C/W

Storage Temperature Range	- 65°C to +150°C
Operating Temperature (Chip)	+150°C
Operating Temperature Range (Ambient)	
C Version	0°C to +70°C
I Version	- 25°C to +85°C
E Version	- 40°C to +85°C
M Version	- 55°C to +125°C
Lead Temperature (Soldering, 10 sec)	+300°C

*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.

ELECTRICAL CHARACTERISTICS: T_A = +25°C with 4.5V ≤ V_{DD} ≤ 18V, unless otherwise specified.

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Input						
V _{IH}	Logic 1 High Input Voltage		2.4	1.8	—	V
V _{IL}	Logic 0 Low Input Voltage		—	1.3	0.8	V
V _{IN (Max)}	Input Voltage Range		- 5	—	V _{DD} + 0.3	V
I _{IN}	Input Current	0V ≤ V _{IN} ≤ V _{DD}	- 10	—	10	μA
Output						
V _{OH}	High Output Voltage	See Figure 1	V _{DD} - 0.025	—	—	V
V _{OL}	Low Output Voltage	See Figure 1	—	—	0.025	V
R _O	Output Resistance, High	I _{OUT} = 10 mA, V _{DD} = 18V	—	2.1	2.8	Ω
R _O	Output Resistance, Low	I _{OUT} = 10 mA, V _{DD} = 18V	—	1.5	2.5	Ω
I _{PK}	Peak Output Current	V _{DD} = 18V (See Figure 5)	—	6	—	A
I _{REV}	Latch-Up Protection Withstand Reverse Current	Duty Cycle ≤ 2% t ≤ 300μsec	1.5	—	—	A
Switching Time (Note 1)						
t _R	Rise Time	Figure 1, C _L = 2500pF	—	25	35	nsec
t _F	Fall Time	Figure 1, C _L = 2500pF	—	25	35	nsec
t _{D1}	Delay Time	Figure 1	—	55	75	nsec
t _{D2}	Delay Time	Figure 1	—	55	75	nsec
Power Supply						
I _S	Power Supply Current	V _{IN} = 3V V _{IN} = 0V	—	0.45 55	1.5 150	mA μA
V _{DD}	Operating Input Voltage		4.5	—	18	V

ELECTRICAL CHARACTERISTICS: 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
V_{IN} (Max)	Input Voltage Range		-5	—	$V_{DD} + 0.3$	V
I_{IN}	Input Current	$0V \leq V_{IN} \leq V_{DD}$	-10	—	10	μA
Output						
V_{OH}	High Output Voltage	See Figure 1	$V_{DD} - 0.025$	—	—	V
V_{OL}	Low Output Voltage	See Figure 1	—	—	0.025	V
R_O	Output Resistance, High	$I_{OUT} = 10mA, V_{DD} = 18V$	—	3	5	Ω
R_O	Output Resistance, Low	$I_{OUT} = 10mA, V_{DD} = 18V$	—	2.3	5	Ω
Switching Time (Note 1)						
t_R	Rise Time	Figure 1, $C_L = 2500pF$	—	32	60	nsec
t_F	Fall Time	Figure 1, $C_L = 2500pF$	—	34	60	nsec
t_{D1}	Delay Time	Figure 1	—	50	100	nsec
t_{D2}	Delay Time	Figure 1	—	65	100	nsec
Power Supply						
I_S	Power Supply Current	$V_{IN} = 3V$ $V_{IN} = 0V$	—	0.45 60	3 400	mA μA
V_{DD}	Operating Input Voltage		4.5	—	18	V

NOTE: 1. Switching times guaranteed by design.

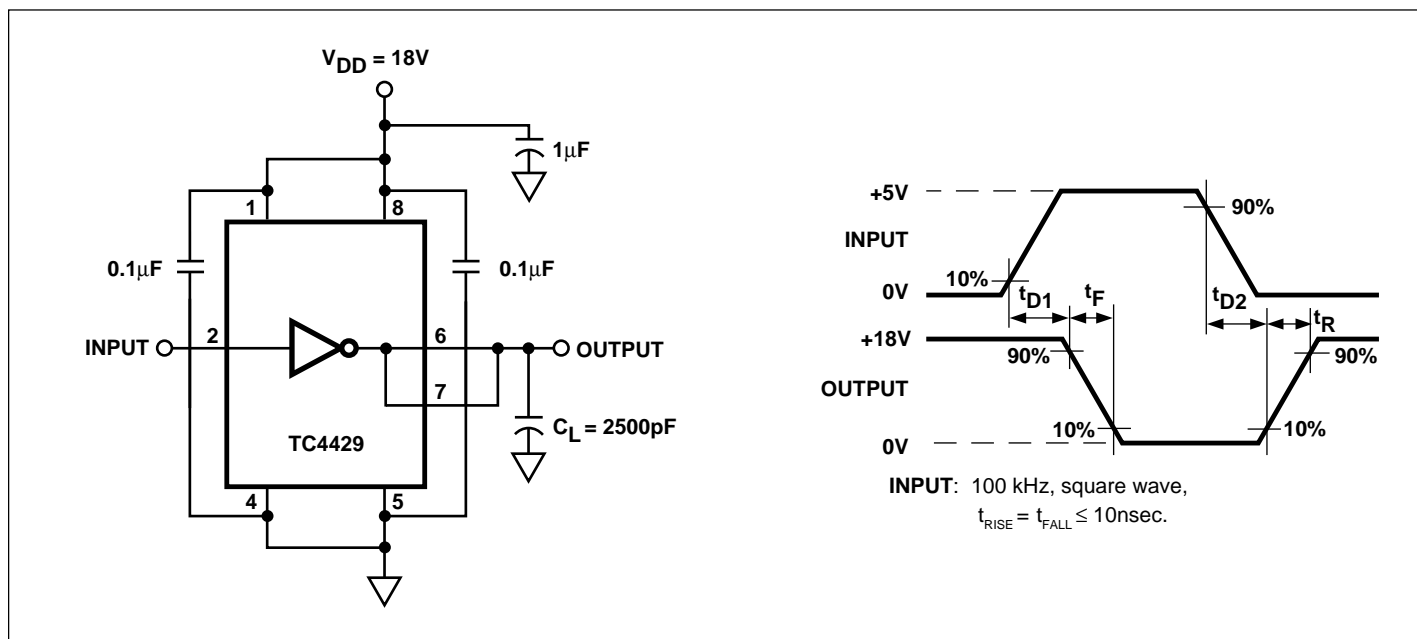
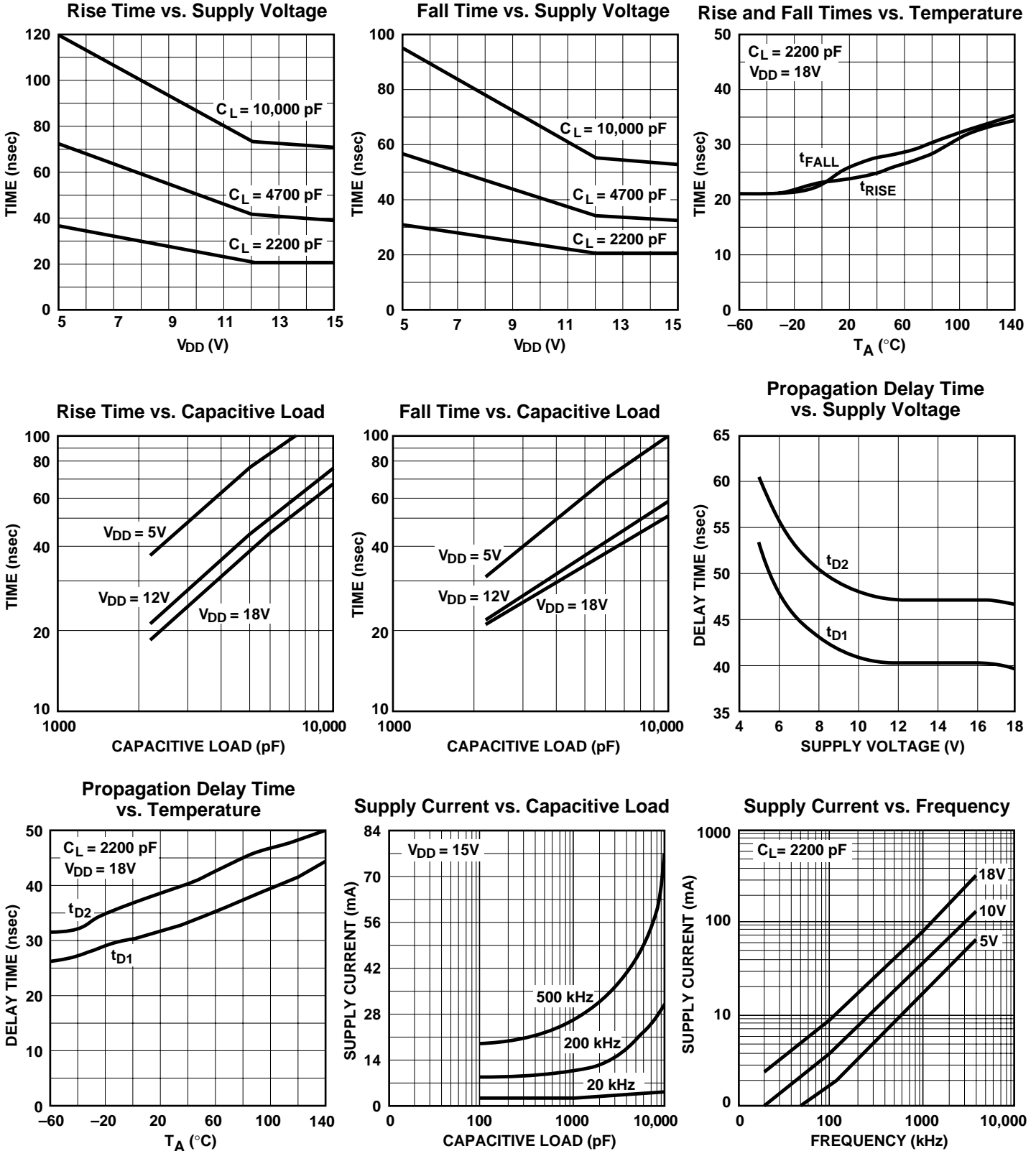


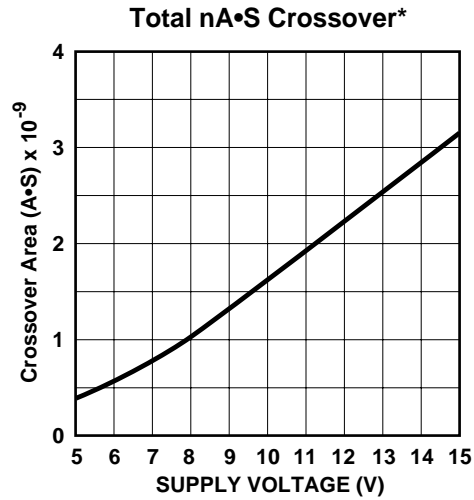
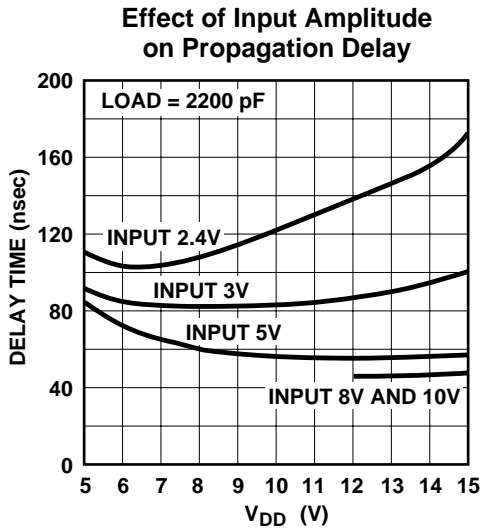
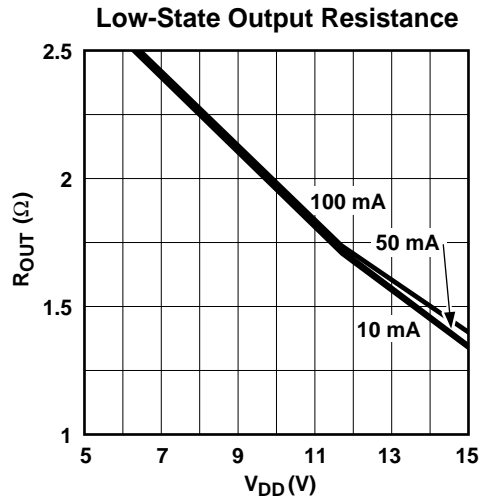
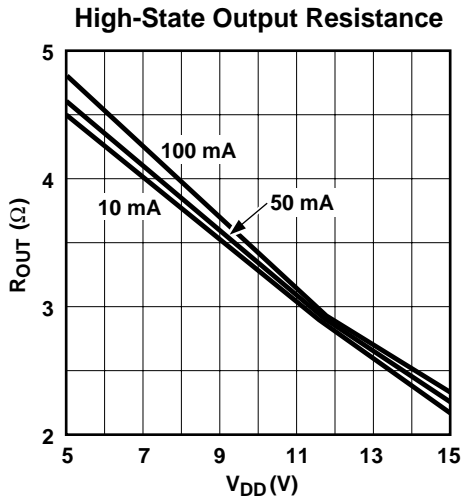
Figure 1. Switching Time Test Circuit

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TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Cont.)

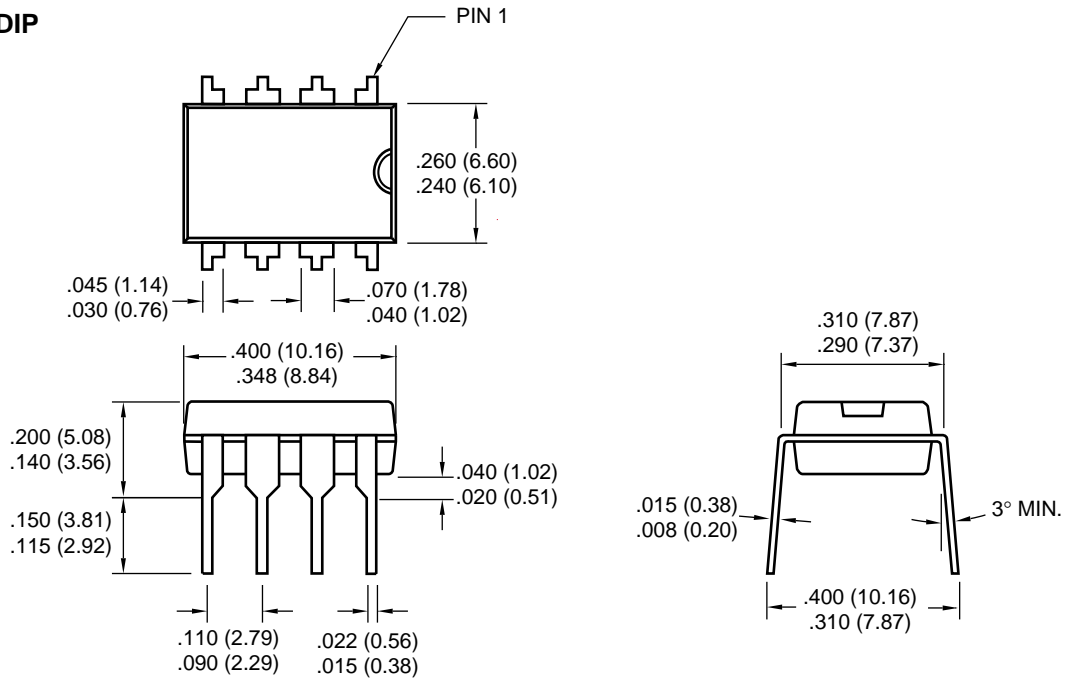


* The values on this graph represent the loss seen by the driver during one complete cycle. For a single transition, divide the value by 2.

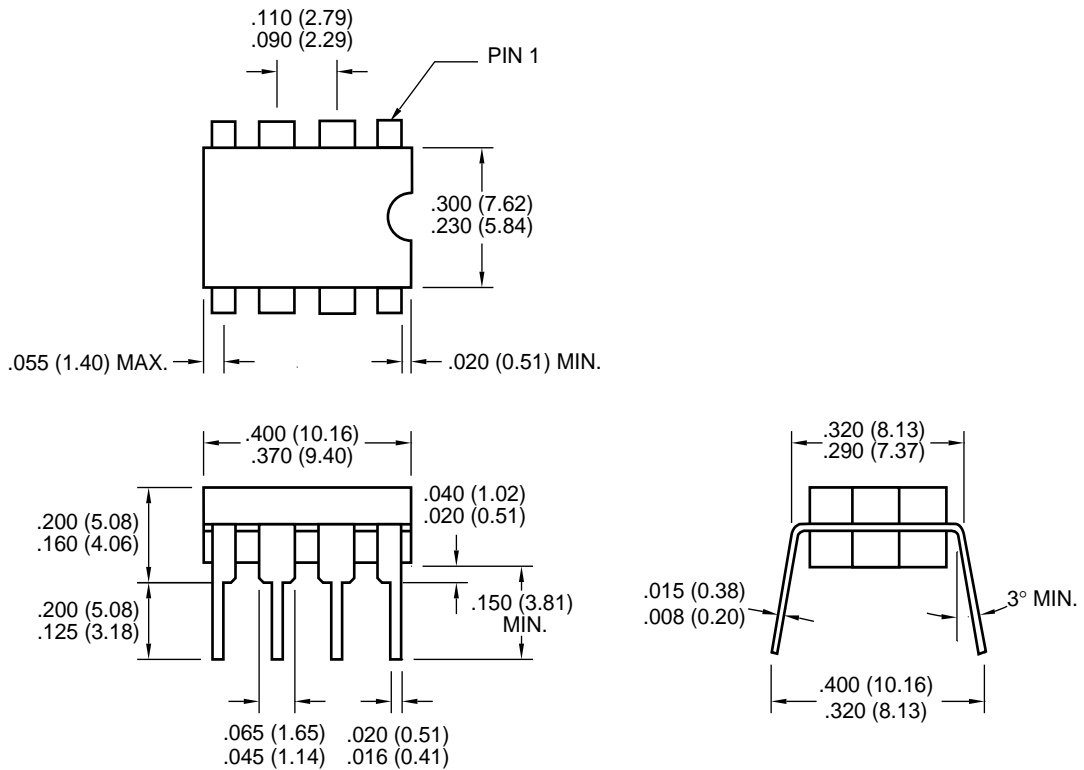
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PACKAGE DIMENSIONS

8-Pin Plastic DIP



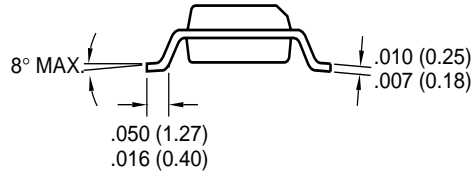
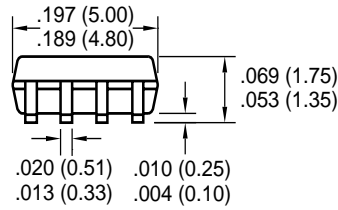
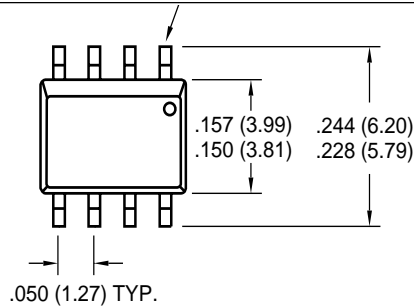
8-Pin CerDIP



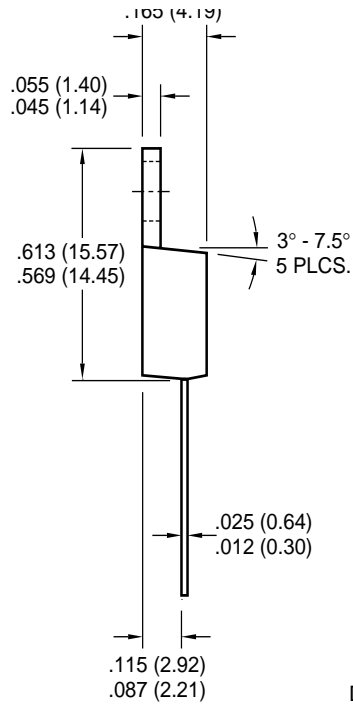
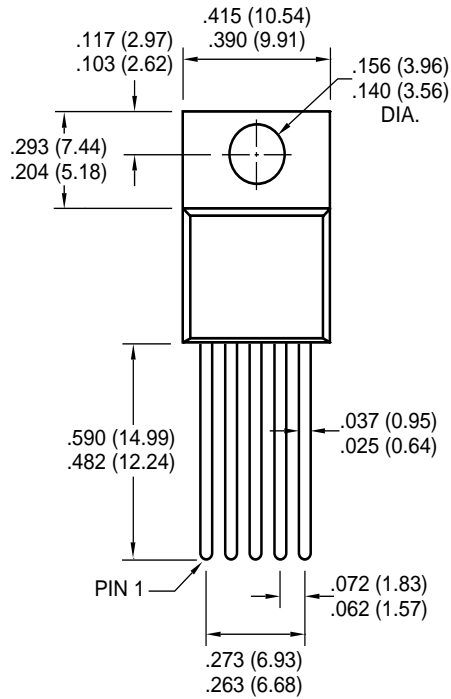
Dimensions: inches (mm)

PACKAGE DIMENSIONS (Cont.)

8-Pin SOIC



5-Pin TO-220



Dimensions: inches (mm)



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