

APPLICATION NOTES

HIGH FREQUENCY RESPONSE

The DDU66F tolerances are guaranteed for input pulse widths and periods greater than those specified in the test conditions. Although the device will function properly for pulse widths as small as 40% of the total delay and periods as small as 80% of the total delay (for a symmetric input), the delays may deviate from their values at low frequency. However, for a given input condition, the deviation will be repeatable from pulse to pulse. Contact technical support at Data

Delay Devices if your application requires device testing at a specific input condition.

POWER SUPPLY BYPASSING

The DDU66F relies on a stable power supply to produce repeatable delays within the stated tolerances. A 0.1 μ f capacitor from VCC to GND, located as close as possible to the VCC pin, is recommended. A wide VCC trace and a clean ground plane should be used.

DEVICE SPECIFICATIONS

TABLE 1: ABSOLUTE MAXIMUM RATINGS

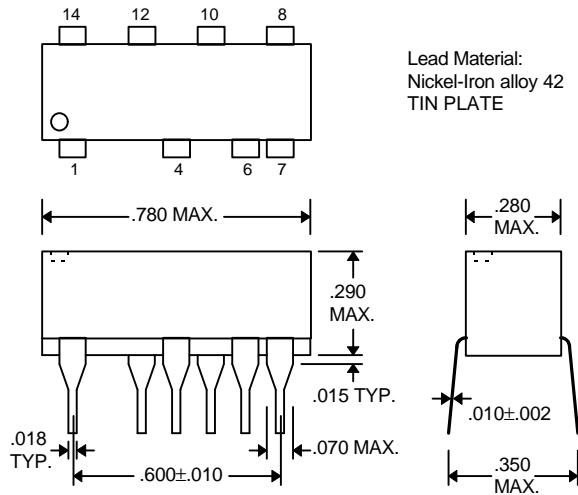
PARAMETER	SYMBOL	MIN	MAX	UNITS	NOTES
DC Supply Voltage	V _{CC}	-0.3	7.0	V	
Input Pin Voltage	V _{IN}	-0.3	V _{CC} +0.3	V	
Storage Temperature	T _{STRG}	-55	150	C	
Lead Temperature	T _{LEAD}		300	C	10 sec

TABLE 2: DC ELECTRICAL CHARACTERISTICS

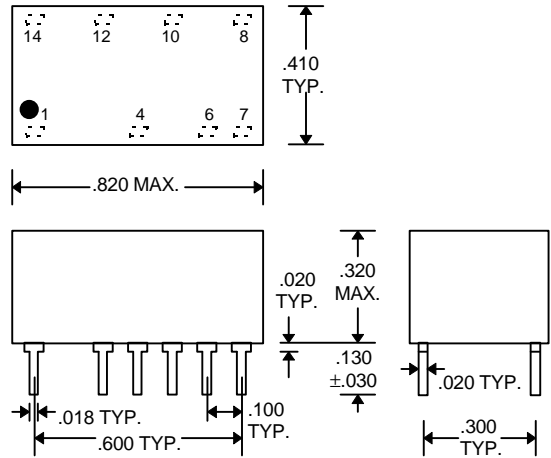
(0C to 70C, 4.75V to 5.25V)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	NOTES
High Level Output Voltage	V _{OH}	2.5	3.4		V	V _{CC} = MIN, I _{OH} = MAX V _{IH} = MIN, V _{IL} = MAX
Low Level Output Voltage	V _{OL}		0.35	0.5	V	V _{CC} = MIN, I _{OL} = MAX V _{IH} = MIN, V _{IL} = MAX
High Level Output Current	I _{OH}			-1.0	mA	
Low Level Output Current	I _{OL}			20.0	mA	
High Level Input Voltage	V _{IH}	2.0			V	
Low Level Input Voltage	V _{IL}			0.8	V	
Input Clamp Voltage	V _{IK}			-1.2	V	V _{CC} = MIN, I _I = I _{IK}
Input Current at Maximum Input Voltage	I _{IHH}			0.1	mA	V _{CC} = MAX, V _I = 7.0V
High Level Input Current	I _{IH}			20	μ A	V _{CC} = MAX, V _I = 2.7V
Low Level Input Current	I _{IL}			-0.6	mA	V _{CC} = MAX, V _I = 0.5V
Short-circuit Output Current	I _{OS}	-60		-150	mA	V _{CC} = MAX
Output High Fan-out				25	Unit	
Output Low Fan-out				12.5	Load	

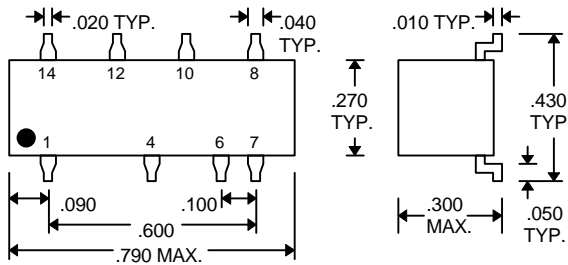
PACKAGE DIMENSIONS



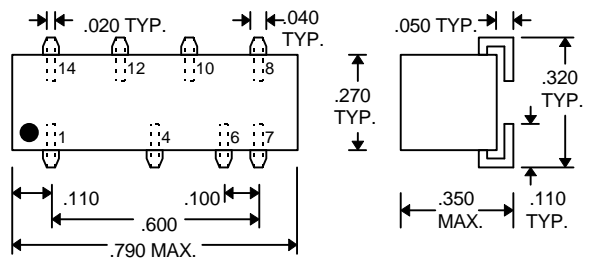
DDU66F-xx (Commercial)



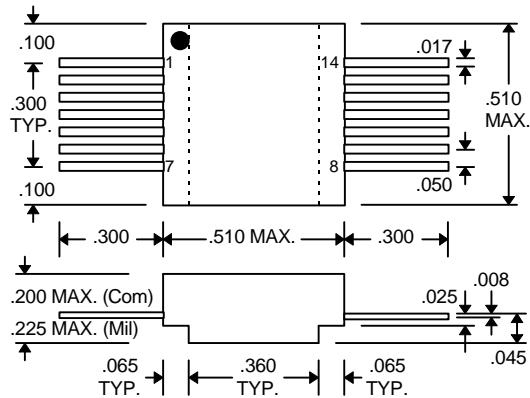
DDU66F-xxME7 (Military)



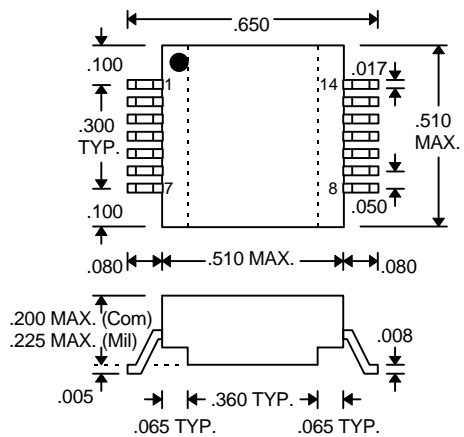
DDU66F-xxA2 (Commercial Gull-Wing)



DDU66F-xxB2 (Commercial J-Lead)



DDU66F-xxD1 (Commercial SMD)
DDU66F-xxD1 (Military SMD)



DDU66F-xxD4 (Commercial SMD)
DDU66F-xxD4 (Military SMD)

DELAY LINE AUTOMATED TESTING

TEST CONDITIONS

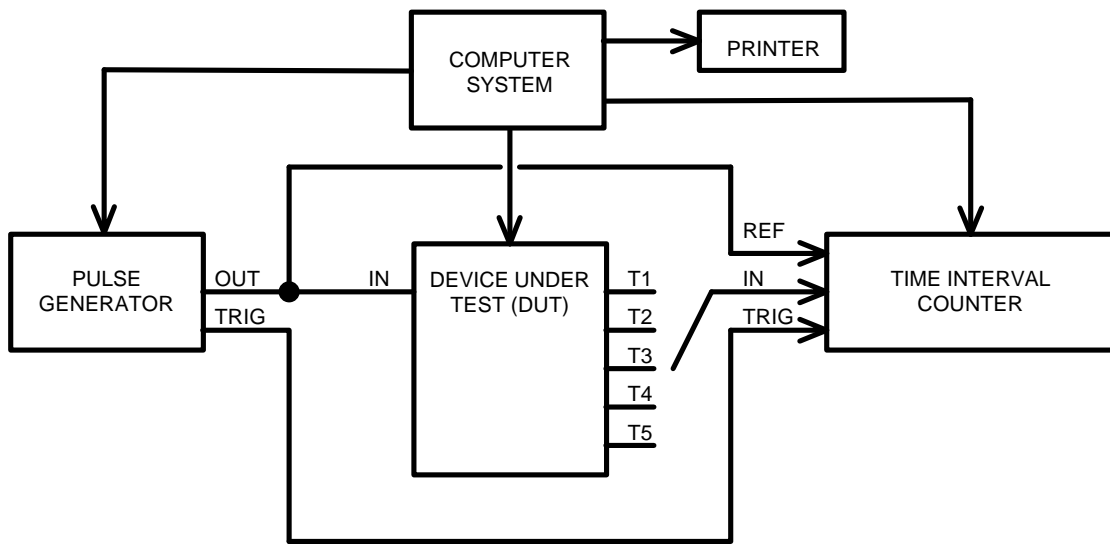
INPUT:

Ambient Temperature: $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
Supply Voltage (Vcc): $5.0\text{V} \pm 0.1\text{V}$
Input Pulse: High = $3.0\text{V} \pm 0.1\text{V}$
 Low = $0.0\text{V} \pm 0.1\text{V}$
Source Impedance: 50Ω Max.
Rise/Fall Time: 3.0 ns Max. (measured between 0.6V and 2.4V)
Pulse Width: $\text{PW}_{\text{IN}} = 1.5 \times \text{Total Delay}$
Period: $\text{PER}_{\text{IN}} = 10 \times \text{Total Delay}$

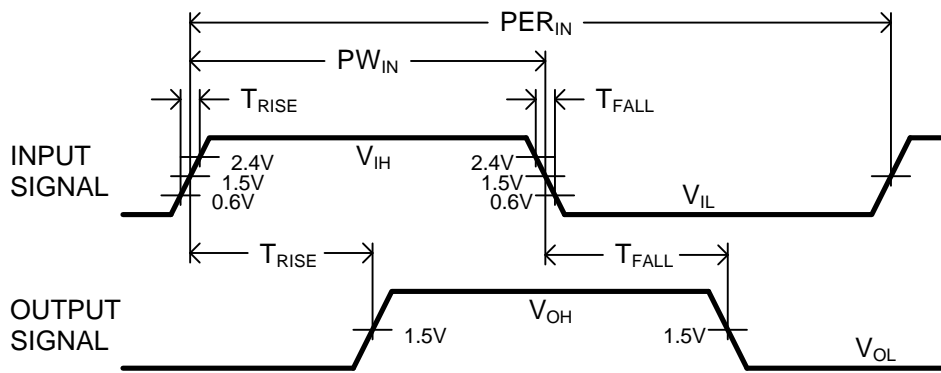
OUTPUT:

Load: 1 FAST-TTL Gate
C_{load}: $5\text{pf} \pm 10\%$
Threshold: 1.5V (Rising & Falling)

NOTE: The above conditions are for test only and do not in any way restrict the operation of the device.



Test Setup



Timing Diagram For Testing

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微波光电部专业代理经销高频、微波、光纤、光电元器件、组件、部件、模块、整机；电磁兼容元器件、材料、设备；微波 CAD、EDA 软件、开发测试仿真工具；微波、光纤仪器仪表。欢迎国外高科技微波、光纤厂商将优秀产品介绍到中国、共同开拓市场。长期大量现货专业批发高频、微波、卫星、光纤、电视、CATV 器件：晶振、VCO、连接器、PIN 开关、变容二极管、开关二极管、低噪晶体管、功率电阻及电容、放大器、功率管、MMIC、混频器、耦合器、功分器、振荡器、合成器、衰减器、滤波器、隔离器、环行器、移相器、调制解调器；光电子器件和组件：红外发射管、红外接收管、光电开关、光敏管、发光二极管和发光二极管组件、半导体激光二极管和激光器组件、光电探测器和光接收组件、光发射接收模块、光纤激光器和光放大器、光调制器、光开关、DWDM 用光发射和接收器件、用户接入系统光收发器件与模块、光纤连接器、光纤跳线/尾纤、光衰减器、光纤适配器、光隔离器、光耦合器、光环行器、光复用器/转换器；无线收发芯片和模组、蓝牙芯片和模组。

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