



CLARE

	PAA140	Units
Load Voltage	400	V
Load Current	250	mA
Max R _{ON}	8	Ω

Features

- Small 8 Pin DIP Package
- Low Drive Power Requirements (TTL/CMOS Compatible)
- No Moving Parts
- High Reliability
- Arc-Free With No Snubbing Circuits
- 3750V_{RMS} Input/Output Isolation
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable
- Surface Mount and Tape & Reel Versions Available

Applications

- Telecommunications
 - Telecom Switching
 - Tip/Ring Circuits
 - Modem Switching (Laptop, Notebook, Pocket Size)
 - Hookswitch
 - Dial Pulsing
 - Ground Start
 - Ringer Injection
- Instrumentation
 - Multiplexers
 - Data Acquisition
 - Electronic Switching
 - I/O Subsystems
 - Meters (Watt-Hour, Water, Gas)
- Medical Equipment-Patient/Equipment Isolation
- Security
- Aerospace
- Industrial Controls

Description

PAA140 is a 400V, 250mA, 8Ω 2-Form-A relay. This performance leader provides a high peak load voltage handling capability combined with a very low resistance for specialized applications.

Approvals

These products comply with the requirements of:

- UL 1577 (UL recognized file #E76270)
- CSA #14 (CSA certified file #LR43639)
- EN 60950
- IEC 950
- AS/NZS 3260

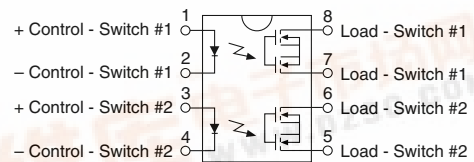
Ordering Information

Part #	Description
PAA140	8 Pin DIP (50/Tube)
PAA140P	8 Pin Flatpack (50/Tube)
PAA140PTR	8 Pin Flatpack (1000/Reel)
PAA140S	8 Pin Surface Mount (50/Tube)
PAA140STR	8 Pin Surface Mount (1000/Reel)

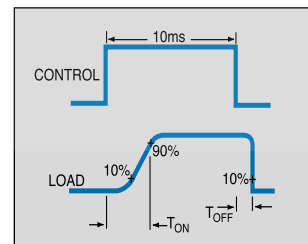
Pin Configuration

PAA140 Pinout

AC/DC Configuration



Switching Characteristics of Normally Open (Form A) Devices





PAA140

Absolute Maximum Ratings (@ 25° C)

Parameter	Min	Typ	Max	Units
Input Power Dissipation	-	-	150 ¹	mW
Input Control Current	-	-	50	mA
Peak (10ms)	-	-	1	A
Reverse Input Voltage	-	-	5	V
Total Power Dissipation	-	-	800 ²	mW
Isolation Voltage Input to Output	3750	-	-	V _{RMS}
Operational Temperature	-40	-	+85	°C
Storage Temperature	-40	-	+125	°C
Soldering Temperature DIP Package	-	-	+260	°C
Flatpack/Surface Mount Package (10 Seconds Max.)	-	-	+220	°C

¹ Derate Linearly 1.33 mw/°C

² Derate Linearly 6.67 mw/°C

Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to the absolute maximum ratings for an extended period may degrade the device and effect its reliability.

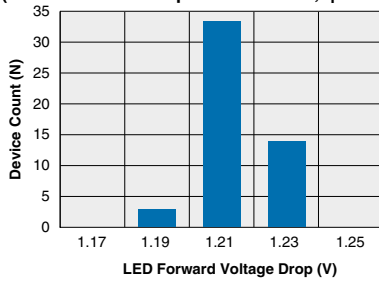
Electrical Characteristics

Parameter	Conditions	Symbol	Min	Typ	MaX	Units
Output Characteristics @ 25°C						
Load Voltage (Peak)	-	V _L	-	-	400	V
Load Current* (Continuous) AC/DC Configuration	-	I _L	-	-	250	mA
Peak Load Current	10ms	I _{LPK}	-	-	500	mA
On-Resistance AC/DC Configuration	I _L =250mA	R _{ON}	-	6	8	Ω
Off-State Leakage Current	V _L =400V	I _{LEAK}	-	-	1	μA
Switching Speeds						
Turn-On	I _F =5mA, V _L =10V	T _{ON}	-	-	3.0	ms
Turn-Off	I _F =5mA, V _L =10V	T _{OFF}	-	-	1.0	ms
Output Capacitance	50V; f=1MHz	C _{OUT}	-	65	-	pF
Capacitance Input to Output	-	-	-	3	-	pF
Input Characteristics @ 25°C						
Input Control Current	I _L = 250mA	I _F	5	-	50	mA
Input Dropout Current	-	I _F	0.4	0.7	-	mA
Input Voltage Drop	I _F = 5mA	V _F	0.9	1.2	1.4	V
Reverse Input Voltage	-	V _R	-	-	5	V
Reverse Input Current	V _R =5V	I _R	-	-	10	μA
Input to Output Capacitance	-	C _{I/O}	-	3	-	pF
Input to Output Isolation	-	V _{I/O}	3750	-	-	V _{RMS}

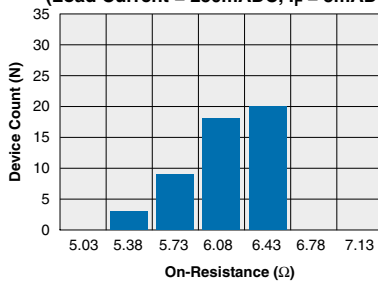
*NOTE: If both poles operate simultaneously load current must be derated so as not to exceed the package power dissipation value.

PERFORMANCE DATA*

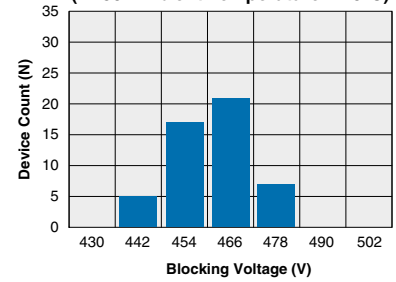
PAA140
Typical LED Forward Voltage Drop
(N=50 Ambient Temperature = 25°C; I_F = 5mADC)



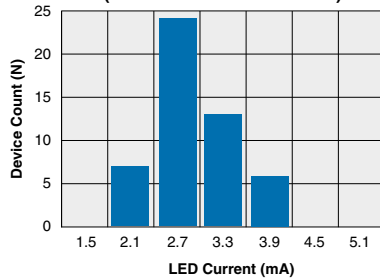
PAA140
Typical On-Resistance Distribution
(N=50 Ambient Temperature = 25°C)
(Load Current = 250mADC, I_F = 5mADC)



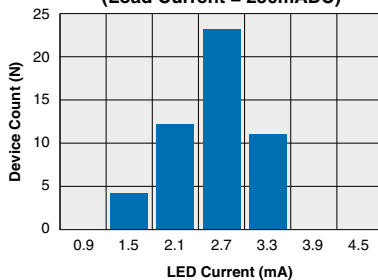
PAA140
Typical Blocking Voltage Distribution
(N=50 Ambient Temperature = 25°C)



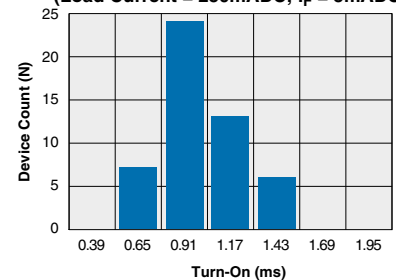
PAA140
Typical I_F for Switch Operation
(N=50 Ambient Temperature = 25°C)
(Load Current = 250mADC)



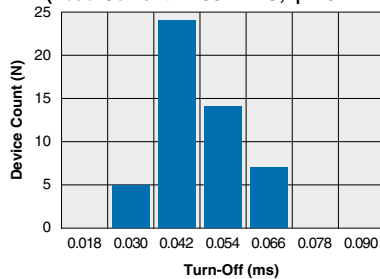
PAA140
Typical I_F for Switch Dropout
(N=50 Ambient Temperature = 25°C)
(Load Current = 250mADC)



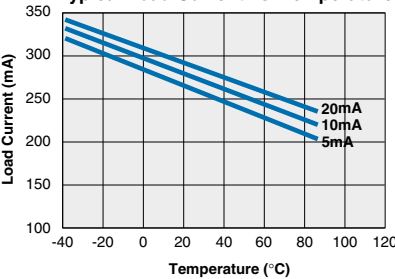
PAA140
Typical Turn-On Time
(N=50 Ambient Temperature = 25°C)
(Load Current = 250mADC; I_F = 5mADC)



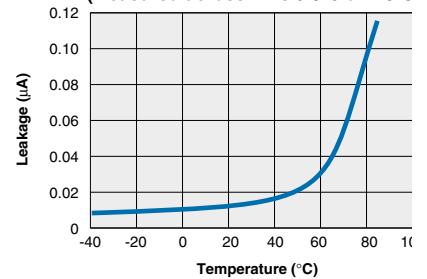
PAA140
Typical Turn-Off Time
(N=50 Ambient Temperature = 25°C)
(Load Current = 250mADC; I_F = 5mADC)



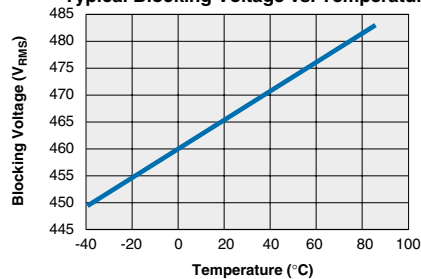
PAA140
Typical Load Current vs. Temperature



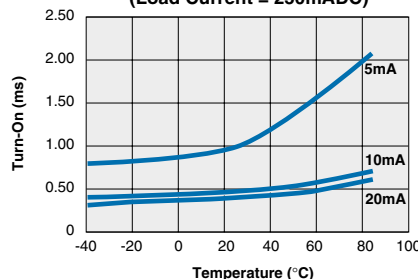
PAA140
Typical Leakage vs. Temperature
(Measured across Pins 5 & 6 or 7 & 8)



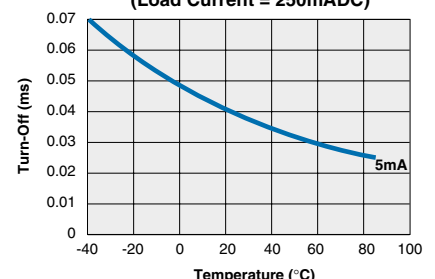
PAA140
Typical Blocking Voltage vs. Temperature



PAA140
Typical Turn-On vs. Temperature
(Load Current = 250mADC)

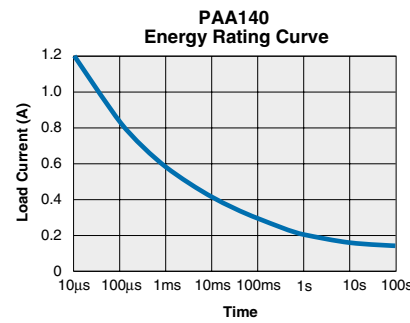
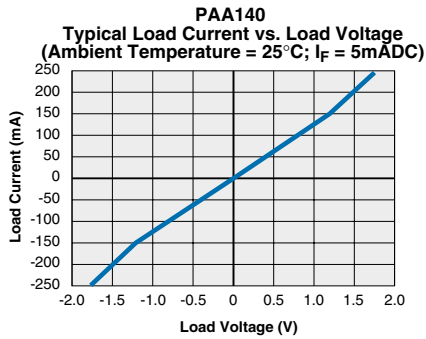
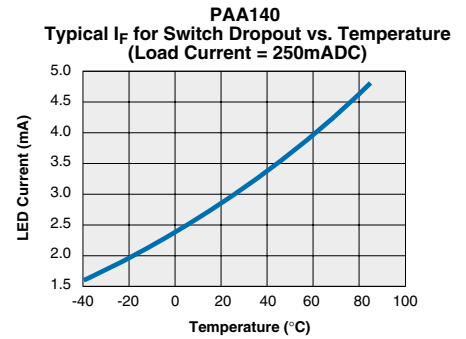
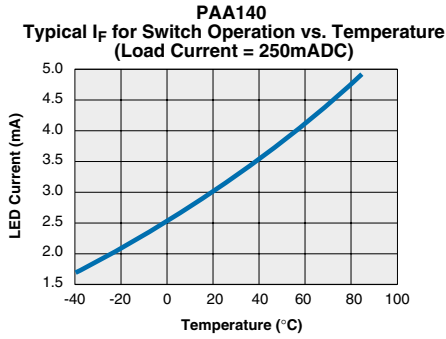
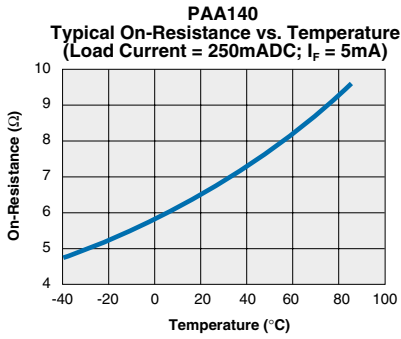
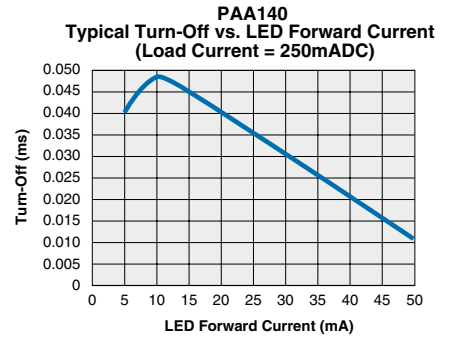
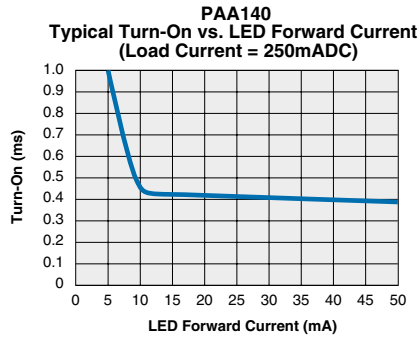
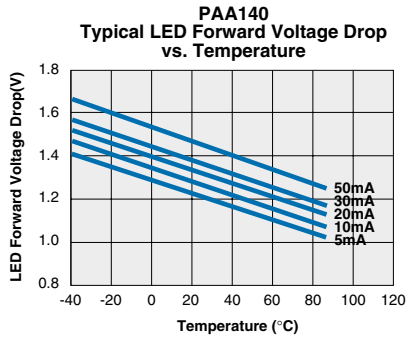


PAA140
Typical Turn-Off vs. Temperature
(Load Current = 250mADC)



*The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

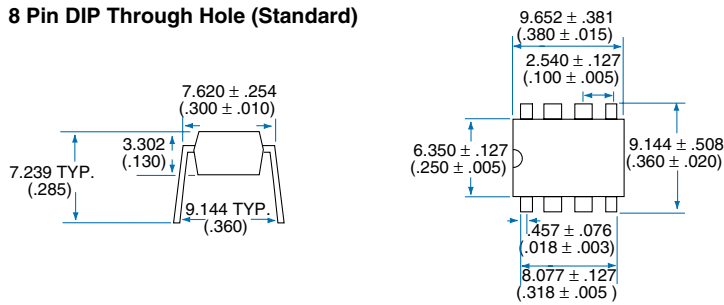
PERFORMANCE DATA*



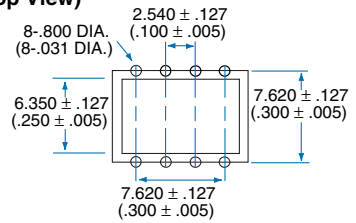
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MECHANICAL DIMENSIONS

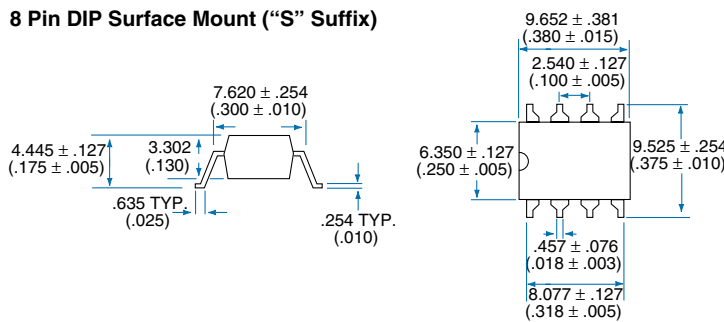
8 Pin DIP Through Hole (Standard)



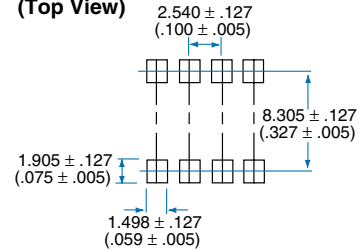
PC Board Pattern (Top View)



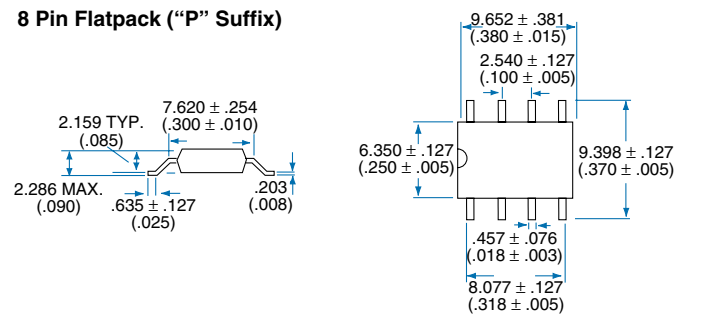
8 Pin DIP Surface Mount ("S" Suffix)



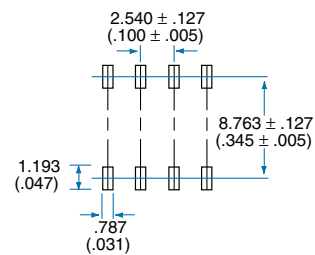
PC Board Pattern (Top View)



8 Pin Flatpack ("P" Suffix)

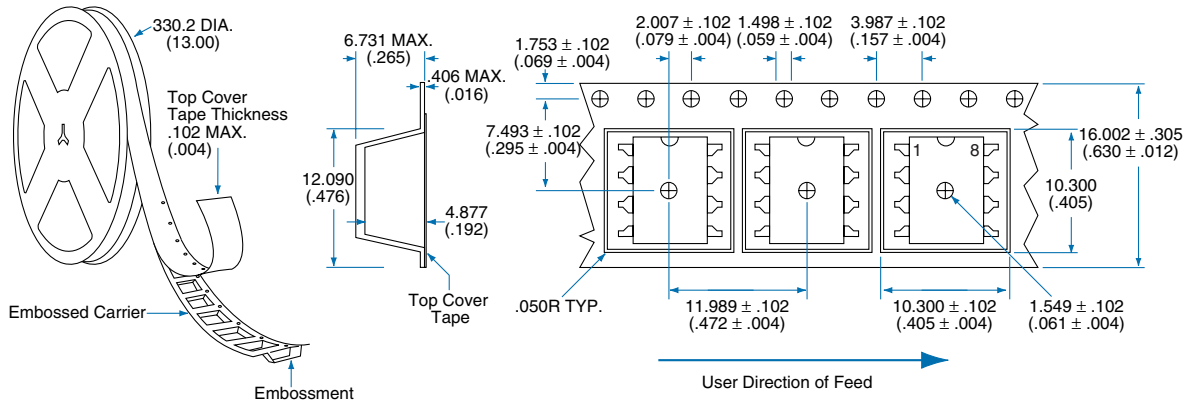


PC Board Pattern (Top View)

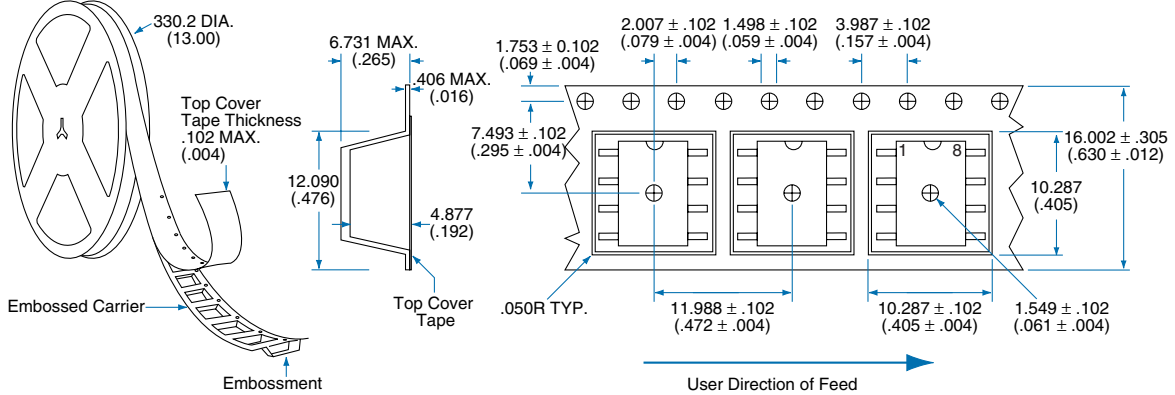


MECHANICAL DIMENSIONS

Tape and Reel Packaging for 8 Pin Surface Mount Package



Tape and Reel Packaging for 8 Pin Flatpack Package





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Specification: DS-PAA140-R5
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8/7/01