



Parameter	Rating	Units
Blocking Voltage	250	V _P
Load Current	50	mA
Max On-resistance	100	Ω

Features

- 100% Solid State
- Small 6-Pin Package
- Low Drive Power Requirements (TTL/CMOS Compatible)
- Arc-Free With No Snubbing Circuits
- 3750V_{rms} Input/Output Isolation
- FCC Compatible
- VDE Compatible
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable
- Tape & Reel Version Available

Applications

- Telecommunications
 - Telecom Switching
 - Tip/Ring Circuits
 - Modem Switching (Laptop, Notebook, Pocket Size)
 - Hook Switch
 - Dial Pulsing
 - Ground Start
 - Ringing 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

The OMA160 is a 250V, 50mA, 100Ω, 1-Form-A relay featuring high speed switching capability.

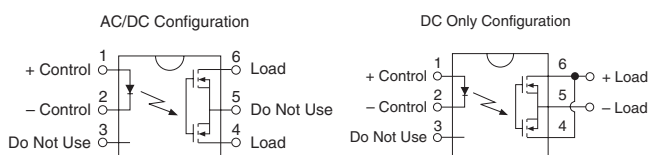
Approvals

- UL Recognized: File Number E76270
- CSA Certified: File Number LR 43639-10
- EN/IEC 60950-1:2001 Compliant

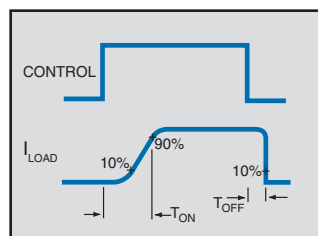
Ordering Information

Part Number	Description
OMA160	6-Pin DIP (50/Tube)
OMA160S	6-Pin Surface Mount (50/Tube)
OMA160STR	6-Pin Surface Mount (1000/Reel)

Pin Configuration



Switching Characteristics of Normally Open (Form A) Devices



Absolute Maximum Ratings

Parameter	Ratings	Units
Blocking Voltage	250	V_P
Reverse Input Voltage	5	V
Input Control Current Peak (10ms)	50	mA
	1	A
Input Power Dissipation ¹	150	mW
Total Power Dissipation ²	800	mW
Isolation Voltage, Input to Output	3750	V_{rms}
Operational Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C

¹ Derate Linearly 1.33 mW/°C

² Derate Linearly 6.67 mW/°C

Electrical absolute maximum ratings are at 25°C

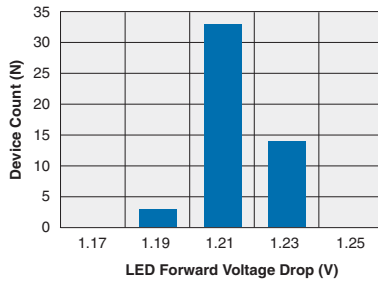
Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at conditions beyond those indicated in the operational sections of this data sheet is not implied.

Electrical Characteristics

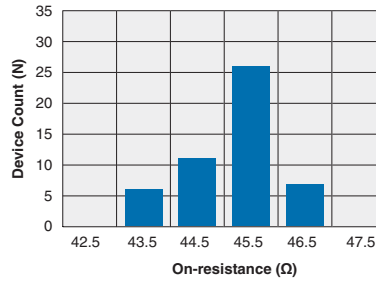
Parameter	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics @ 25°C						
Load Current, Continuous	-	I_L	-	-	50	mA
AC/DC Configuration					80	
DC Configuration						
Peak Load Current	t=10ms	I_{LPK}	-	-	100	mA
On-Resistance	$I_L=50mA$	R_{ON}	-	50	100	Ω
AC/DC Configuration				15	30	
DC Configuration	$I_L=80mA$					
Off-State Leakage Current	$V_L=250V$	I_{LEAK}	-	-	25	nA
Switching Speeds	$I_F=10mA, V_L=10V$	T_{ON}	-	-	0.125	ms
Turn-On		T_{OFF}				
Turn-Off	$I_F=10mA, V_L=10V$					
Output Capacitance	50V; f=1MHz	C_{OUT}	-	5	-	pF
Input Characteristics @ 25°C						
Input Control Current	$I_L=50mA$	I_F	-	-	10	mA
Input Dropout Current	-	I_F	0.4	-	-	mA
Input Voltage Drop	$I_F=10mA$	V_F	0.9	1.2	1.4	V
Reverse Input Current	$V_R=5V$	I_R	-	-	10	μA
Common Characteristics @ 25°C						
Input to Output Capacitance	-	$C_{I/O}$	-	3	-	pF

PERFORMANCE DATA*

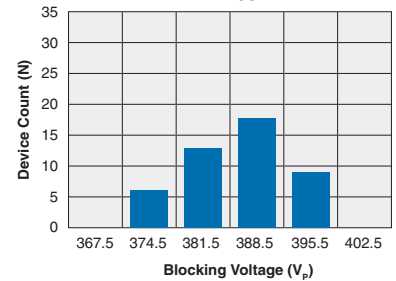
OMA160
Typical LED Forward Voltage Drop
($T_A = 25^\circ\text{C}$; $I_F = 10\text{mA}_{\text{DC}}$)
N=50



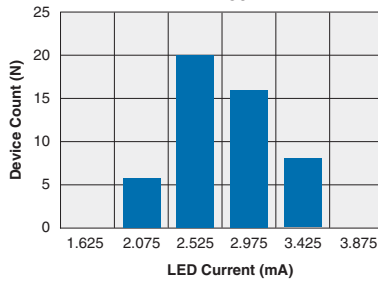
OMA160
Typical On-resistance Distribution
($T_A = 25^\circ\text{C}$; $I_L = 50\text{mA}_{\text{DC}}$; $I_F = 10\text{mA}_{\text{DC}}$)
N=50



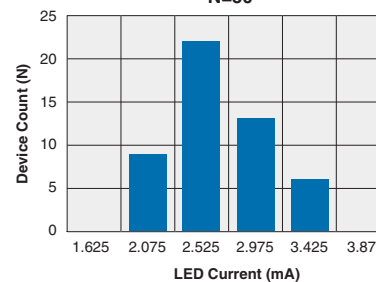
OMA160
Typical Blocking Voltage Distribution
($T_A = 25^\circ\text{C}$)
N=50



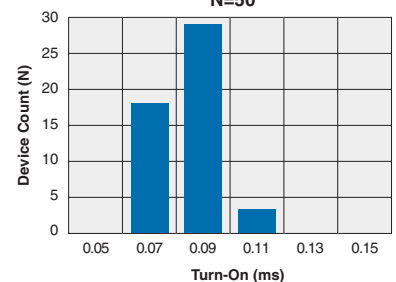
OMA160
Typical I_F for Switch Operation
($T_A = 25^\circ\text{C}$; $I_L = 50\text{mA}_{\text{DC}}$)
N=50



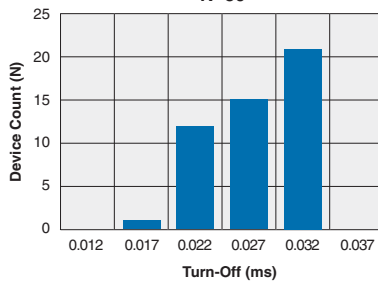
OMA160
Typical I_F for Switch Dropout
($T_A = 25^\circ\text{C}$; $I_L = 50\text{mA}_{\text{DC}}$)
N=50



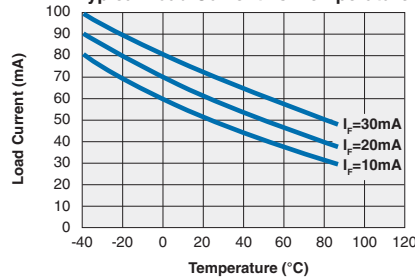
OMA160
Typical Turn-On Time
($T_A = 25^\circ\text{C}$; $I_L = 50\text{mA}_{\text{DC}}$; $I_F = 10\text{mA}_{\text{DC}}$)
N=50



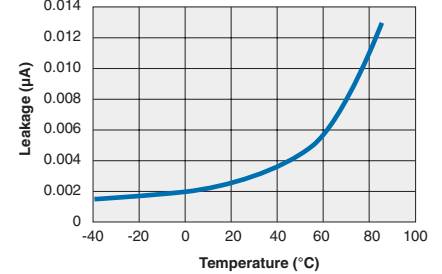
OMA160
Typical Turn-Off Time
($T_A = 25^\circ\text{C}$; $I_L = 50\text{mA}_{\text{DC}}$; $I_F = 10\text{mA}_{\text{DC}}$)
N=50



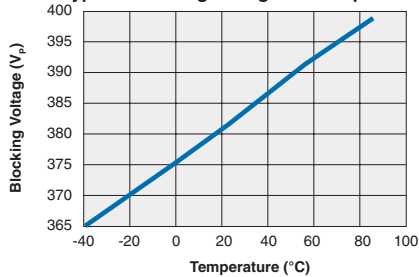
OMA160
Typical Load Current vs. Temperature



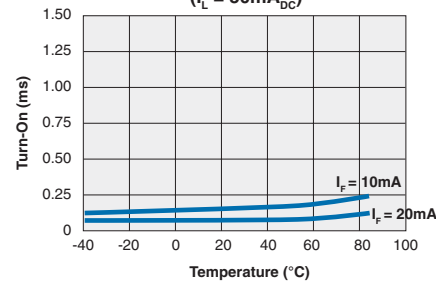
OMA160
Typical Leakage vs. Temperature
(Measured across Pins 4 & 6)



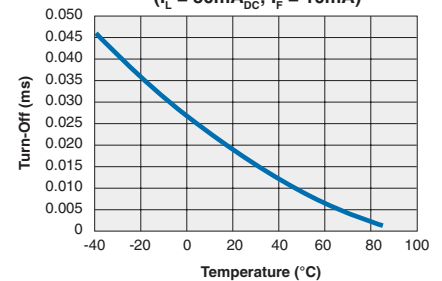
OMA160
Typical Blocking Voltage vs. Temperature



OMA160
Typical Turn-On vs. Temperature
($I_L = 50\text{mA}_{\text{DC}}$)

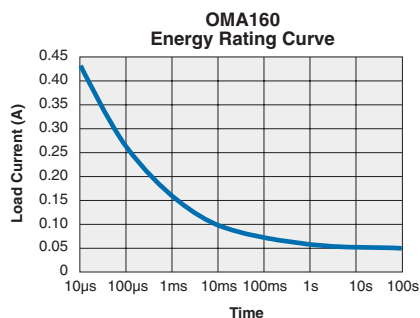
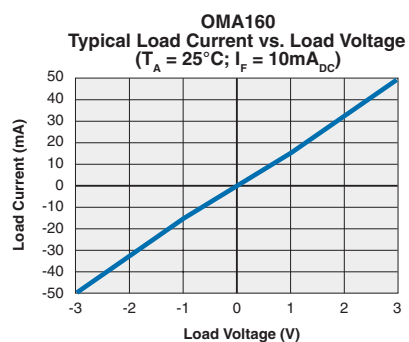
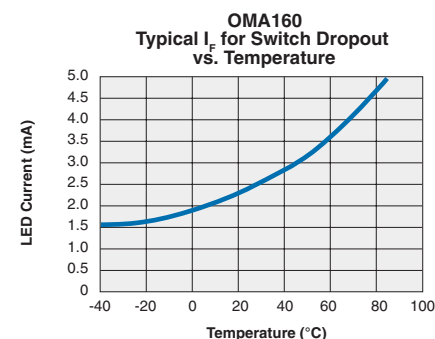
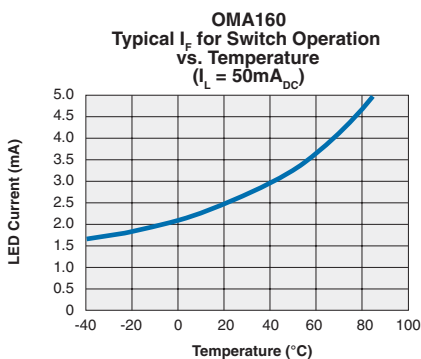
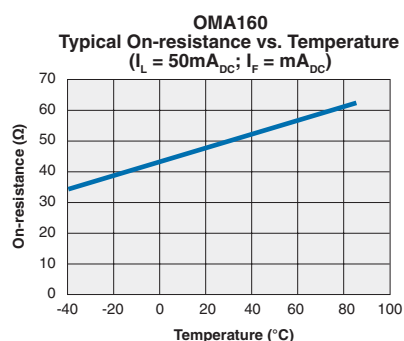
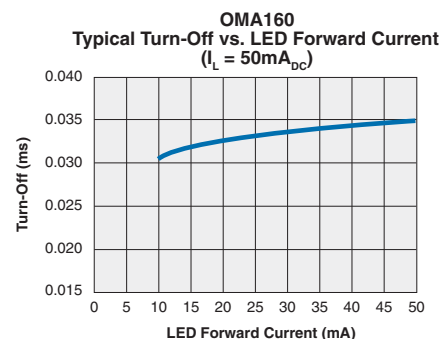
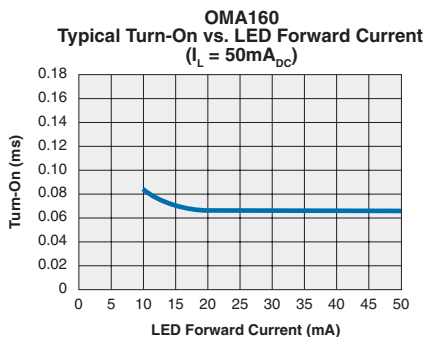
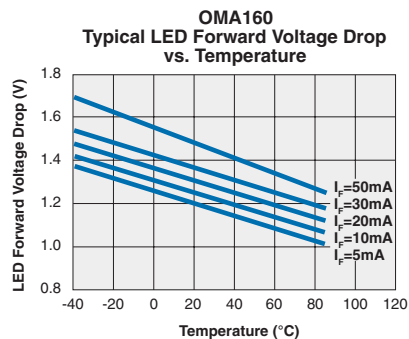


OMA160
Typical Turn-Off vs. Temperature
($I_L = 50\text{mA}_{\text{DC}}$; $I_F = 10\text{mA}$)



*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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Manufacturing Information

Soldering

For proper assembly, the component must be processed in accordance with the current revision of IPC/JEDEC standard J-STD-020. Failure to follow the recommended guidelines may cause permanent damage to the device resulting in impaired performance and/or a reduced lifetime expectancy.

Recommended soldering processes are limited to 260°C component body temperature for 10 seconds.

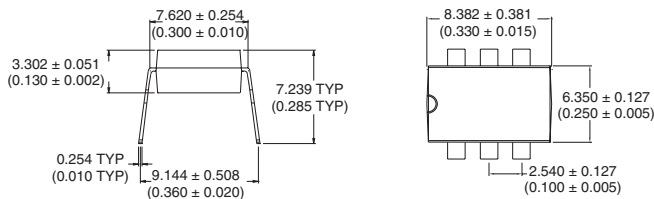
Washing

Clare does not recommend ultrasonic cleaning or the use of chlorinated solvents.

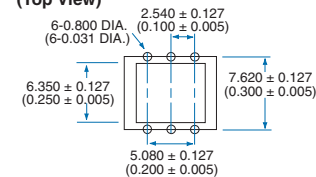


MECHANICAL DIMENSIONS

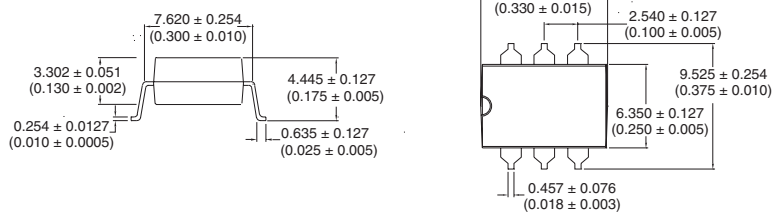
6-Pin DIP Through Hole (Standard)



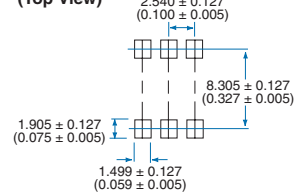
PC Board Pattern (Top View)



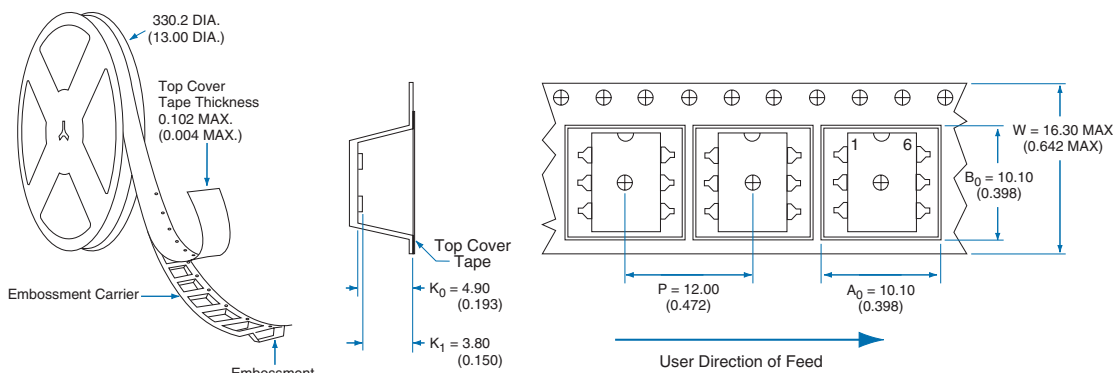
6-Pin Surface Mount ("S" Suffix)



PC Board Pattern (Top View)



Tape and Reel Packaging for Surface Mount Package



Dimensions:
mm
(inches)

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