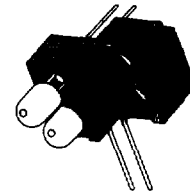
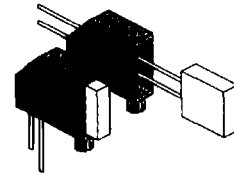


In addition to offering a full line of high quality Optoelectronic products, RGA also provides a broad range of LED mounting hardware, holders, and complete LED assemblies.



The products illustrated in the "Assembly & Hardware" section of our catalog are designed to provide a low cost, highly efficient method of assuring precise component alignment, and an increased level of assembly consistency. Proper use of these products can lead to reduced assembly costs, a lower rate of rejected assemblies, and a greatly improved level of quality.

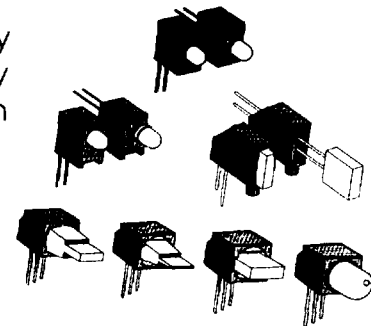


All of the products offered by RGA are manufactured using only the highest quality materials. Many of the products offered in this section of our catalog are manufactured to meet UL specification 94V-0 flammability rating.



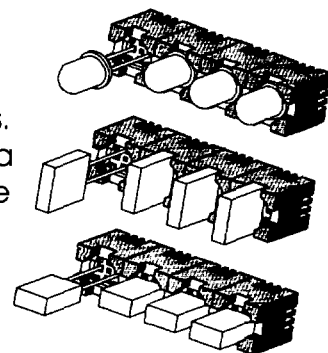
A unique feature of the RGA ASSEMBLIES AND HARDWARE product line is the availability of these products both assembled with RGA LED products, and sold separately for assembly by our customers.

RGA's high volume assembly capabilities offer a reduced assembly cost to our customers, as well as a high level of quality, consistency and convenience. RGA will assemble any of the items illustrated in the following pages to our customer's exact specifications.



When contacting RGA for quotations and samples, please specify the items you are interested in, and whether you would like these items provided separately or as a complete assembly. When a complete assembly is desired, please provide both the RGA LED hardware part number, as well as the part number(s) of the LEDs. RGA will provide you with a complete assembly part number.

In addition to the items illustrated in the following pages, RGA also stocks a wide range of products available for specific applications. If you have an application for LED hardware, and you do not see a solution in this catalog, please contact RGA. We have a hardware solution for all your LED assembly applications.



LED ASSEMBLIES & HARDWARE

94V-0
U.L. RATED MATERIAL

EXTRUDED, SELF-RETAINING LED MOUNTS

- Self-Retaining features allow pre-assembly and automatic insertion.
- Styles for T-1, T-1^{3/4}, T-1^{3/4} (3 lead) and rectangular LEDs.
- Design prevents lead shorting.
- Uniform, consistently perpendicular mounting assured.
- Standard lengths from .030" - 1.250" (.76-31.8) in .005" (.127) increments.
- Symmetrical for assembly ease.
- Made from U.L. rated 94V-0 Black PVC material.
- Low in cost and available from stock for immediate shipment.



Designed to allow assembly with industry's most popular LED styles, RGA's ELM and ERM Series Extruded Self-Retaining LED Mounts are available in distinct styles to accept T-1, T-1^{3/4}, T-1^{3/4} (3 lead) and rectangular LEDs, providing excellent ways to reduce inventories of several different style LED mounts.

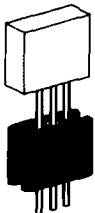
Their self-retaining design allows easy assembly without tools, while firmly retaining LEDs during handling and assembly steps. Ideal for automatic insertion and precise mounting, these mounts are virtually the same diameter as the LED, protect leads from shorting and assure uniform, consistent mounting of the LED in a truly perpendicular plane, regardless of LED type.



Capable of withstanding most environments, the ELM and ERM Series are made of Black PVC material rated 94V-0 by U.L. All standard sizes are stocked in depth for immediate shipment and are extremely low in cost. All styles are available in lengths from .030" - 1.250" (.76-31.8) in .005" (.127) increments.



MM	INCHES	PART NUMBERS	PART NUMBERS	PART NUMBERS	PART NUMBERS	PART NUMBERS
1	.039	ELM 1-1MM	ELM 2-1MM	ELM 3-1MM	ELM 4-1MM	ERM 1-1MM
2	.079	ELM 1-2MM	ELM 2-2MM	ELM 3-2MM	ELM 4-2MM	ERM 1-2MM
3	.118	ELM 1-3MM	ELM 2-3MM	ELM 3-3MM	ELM 4-3MM	ERM 1-3MM
4	.158	ELM 1-4MM	ELM 2-4MM	ELM 3-4MM	ELM 4-4MM	ERM 1-4MM
5	.197	ELM 1-5MM	ELM 2-5MM	ELM 3-5MM	ELM 4-5MM	ERM 1-5MM
6	.236	ELM 1-6MM	ELM 2-6MM	ELM 3-6MM	ELM 4-6MM	ERM 1-6MM
7	.276	ELM 1-7MM	ELM 2-7MM	ELM 3-7MM	ELM 4-7MM	ERM 1-7MM
8	.315	ELM 1-8MM	ELM 2-8MM	ELM 3-8MM	ELM 4-8MM	ERM 1-8MM
9	.354	ELM 1-9MM	ELM 2-9MM	ELM 3-9MM	ELM 4-9MM	ERM 1-9MM
10	.394	ELM 1-10MM	ELM 2-10MM	ELM 3-10MM	ELM 4-10MM	ERM 1-10MM
11	.433	ELM 1-11MM	ELM 2-11MM	ELM 3-11MM	ELM 4-11MM	ERM 1-11MM
12	.472	ELM 1-12MM	ELM 2-12MM	ELM 3-12MM	ELM 4-12MM	ERM 1-12MM
13	.512	ELM 1-13MM	ELM 2-13MM	ELM 3-13MM	ELM 4-13MM	ERM 1-13MM
14	.551	ELM 1-14MM	ELM 2-14MM	ELM 3-14MM	ELM 4-14MM	ERM 1-14MM
15	.591	ELM 1-15MM	ELM 2-15MM	ELM 3-15MM	ELM 4-15MM	ERM 1-15MM
16	.630	ELM 1-16MM	ELM 2-16MM	ELM 3-16MM	ELM 4-16MM	ERM 1-16MM
17	.669	ELM 1-17MM	ELM 2-17MM	ELM 3-17MM	ELM 4-17MM	ERM 1-17MM
18	.709	ELM 1-18MM	ELM 2-18MM	ELM 3-18MM	ELM 4-18MM	ERM 1-18MM
19	.748	ELM 1-19MM	ELM 2-19MM	ELM 3-19MM	ELM 4-19MM	ERM 1-19MM
20	.787	ELM 1-20MM	ELM 2-20MM	ELM 3-20MM	ELM 4-20MM	ERM 1-20MM
21	.827	ELM 1-21MM	ELM 2-21MM	ELM 3-21MM	ELM 4-21MM	ERM 1-21MM
22	.886	ELM 1-22MM	ELM 2-22MM	ELM 3-22MM	ELM 4-22MM	ERM 1-22MM
23	.906	ELM 1-23MM	ELM 2-23MM	ELM 3-23MM	ELM 4-23MM	ERM 1-23MM
24	.945	ELM 1-24MM	ELM 2-24MM	ELM 3-24MM	ELM 4-24MM	ERM 1-24MM
25	.984	ELM 1-25MM	ELM 2-25MM	ELM 3-25MM	ELM 4-25MM	ERM 1-25MM
26	1.024	ELM 1-26MM	ELM 2-26MM	ELM 3-26MM	ELM 4-26MM	ERM 1-26MM



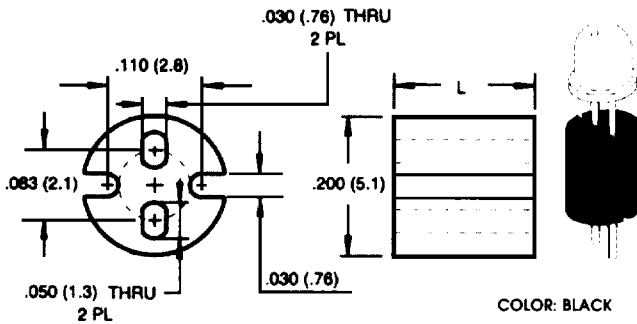
LED ASSEMBLIES & HARDWARE

94V-0
U.L. RATED MATERIAL

EXTRUDED, SELF-RETAINING LED MOUNTS

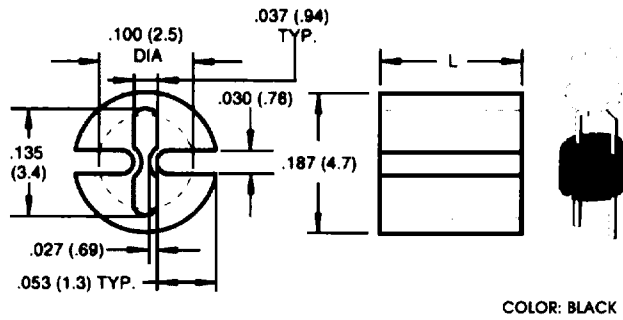
ELM 1-Series

T-1 3/4 LED MOUNT - 2 LEADS



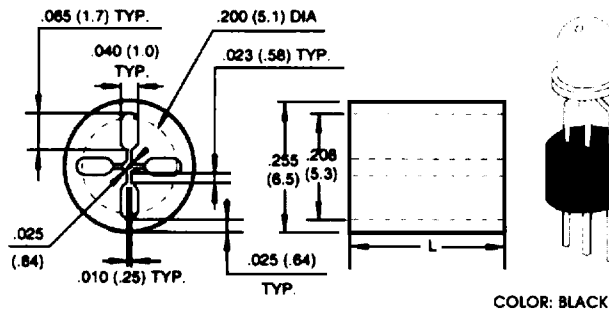
ELM 2-Series

T-1 LED MOUNT (.187 DIA)



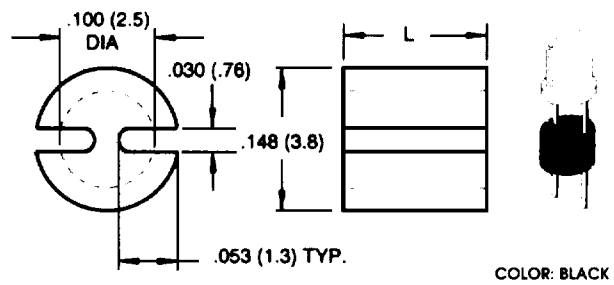
ELM 3-Series

T-1 3/4 LED MOUNT - 3 LEADS

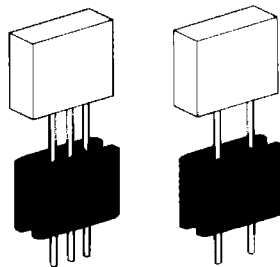
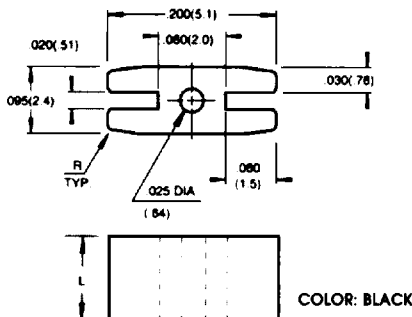


ELM 4-Series

T-1 LED MOUNT (.148 DIA)



ERM 1-Series



USE WITH RECTANGULAR LEDS

RECOMMENDED TYPE:
2x4mm OR 2x5mm,
2 OR 3 LEADED

PART NO.	LED TYPE	LEADS NO.	"L" DIMENSIONS
ELM 1-	T-1 3/4	2	.030-1.250 (.76-31.8)
ELM 2-	T-1	2	.030-1.250 (.76-31.8)
ELM 3-	T-1 3/4	3	.030-1.250 (.76-31.8)
ELM 4-	T-1	2	.030-1.250 (.76-31.8)
ERM 1-	RECTANGULAR	2 or 3	.030-1.250 (.76-31.8)

Tolerances:
O.D. ± .005 (.13)
I.D. ± .005 (.13)
"L" Dim. .030-500 (76-127) is ± .005 (.13)
"L" Dim. .505-750 (128-191) is ± .008 (.20)
"L" Dim. .755-1.250 (192-318) is ± .015 (.38)

"L" DIMENSIONS	
.030-.075 (.76-1.9)	.315-.380 (8.0-9.7)
.080-.150 (2.0-3.8)	.385-.495 (9.8-12.6)
.155-.230 (4.0-5.8)	.500-.750 (12.7-19.1)
.235-.310 (6.0-7.9)	.755-1.250 (19.2-31.8)

MOLDED, SELF-RETAINING LED MOUNTS

94V-0
U.L. RATED MATERIAL

- One universal style for both T-1 and T-1 3/4 LEDs.
- Internal tapered divider prevents leads from shorting.
- Unique design of lead exit holes allows self-retention and draining of cleaning solvents.
- 54 Standard stock lengths from .120"-.900" (3.1-22.9)
- Molded, rigid design uniformly holds LEDs in truly vertical position.
- High temperature material rated 94V-0 by U.L. suitable for high temperature applications.
- Self-retaining design makes assemblies suitable for automatic insertion.
- Feet on bottoms facilitate cleaning and inspection.
- Available from stock.

RGA's Molded, Self-Retaining LED Mounts allow easier assembly and handling, while an internal tapered divider protects leads from possible shorting. Rigidly molded, LEDs are held in place uniformly while holding them in a truly vertical position for maximum light intensity of displays where alignment is critical.

Made of high-temperature, black material rated 94V-0 by U.L., pre-assembled LEDs and mounts are suitable for SMT assembly and automatic insertion. A unique lead exit design enables firm retention of LED leads while providing drainage for board washing solvents. To assist cleansing of boards and assure solder filleting and inspection, feet are molded into the base of the LTM Series.

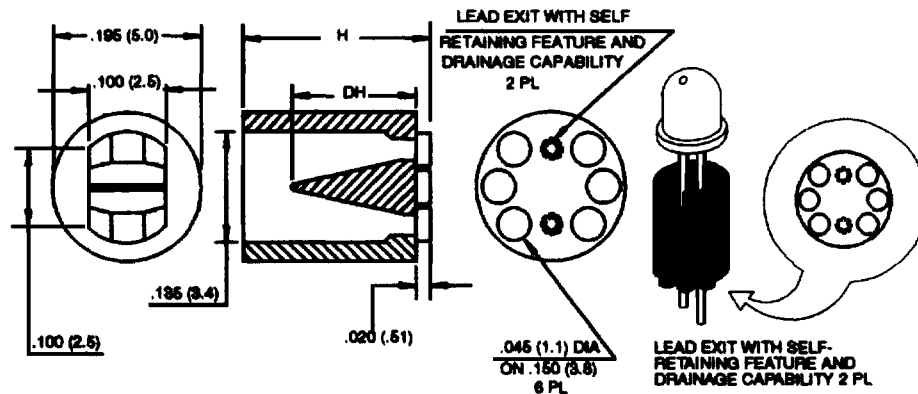
54 standard stock lengths from .120"-.900" (3.1-22.9) are available, while the .195" (5.0) outer diameter of the LTM Series is no larger than industry standard LEDs. All sizes are available for immediate shipment from stock.

MATERIAL: 33% glass reinforced, flame retardant polyphthalamide (PPA) U.L. rated 94V-0.

COLOR: Black

OXYGEN INDEX RATING: over 28%

DRAWING TOLERANCES:
Unless otherwise indicated,
FRACTIONS: $\pm 1/64$ (.40)
DECIMALS: 2 places, $\pm .010$ (.25)
ANGULAR: $\pm 1^\circ$
DRAFT: 1% maximum
GATE FLASH: .010 (.25) MAXIMUM;
.010 (.25) radii allowed on corners and edges.



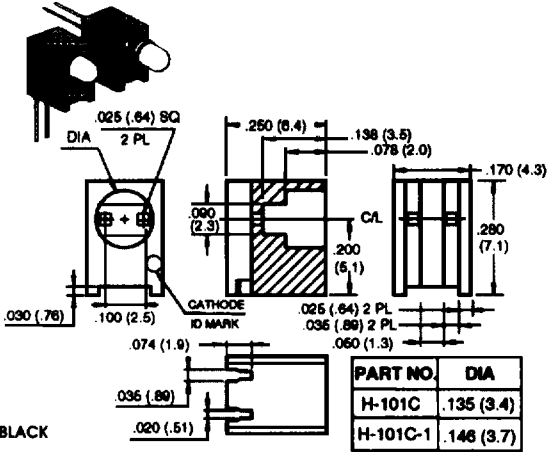
PART NO.	H	DH	PART NO.	H	DH	PART NO.	H	DH
LTM-120	.120 (3.1)	.060 (1.5)	LTM-300	.300 (7.6)	.185 (4.7)	LTM-490	.490 (12.5)	.310 (7.9)
LTM-130	.130 (3.3)	.060 (1.5)	LTM-310	.310 (7.9)	.185 (4.7)	LTM-500	.500 (12.7)	.435 (11.1)
LTM-140	.140 (3.6)	.060 (1.5)	LTM-320	.320 (8.1)	.185 (4.7)	LTM-520	.520 (13.2)	.435 (11.1)
LTM-150	.150 (3.8)	.060 (1.5)	LTM-330	.330 (8.4)	.185 (4.7)	LTM-550	.550 (14.0)	.435 (11.1)
LTM-160	.160 (4.1)	.060 (1.5)	LTM-340	.340 (8.6)	.185 (4.7)	LTM-570	.570 (14.5)	.435 (11.1)
LTM-170	.170 (4.3)	.060 (1.5)	LTM-350	.350 (8.9)	.185 (4.7)	LTM-600	.600 (15.2)	.435 (11.1)
LTM-180	.180 (4.6)	.060 (1.5)	LTM-360	.360 (9.1)	.185 (4.7)	LTM-620	.620 (15.8)	.435 (11.1)
LTM-190	.190 (4.8)	.060 (1.5)	LTM-370	.370 (9.4)	.185 (4.7)	LTM-650	.650 (16.5)	.560 (14.2)
LTM-200	.200 (5.1)	.060 (1.5)	LTM-380	.380 (9.7)	.310 (7.9)	LTM-670	.670 (17.0)	.560 (14.2)
LTM-210	.210 (5.3)	.060 (1.5)	LTM-390	.390 (9.9)	.310 (7.9)	LTM-700	.700 (17.8)	.560 (14.2)
LTM-220	.220 (5.6)	.060 (1.5)	LTM-400	.400 (10.2)	.310 (7.9)	LTM-720	.720 (18.3)	.560 (14.2)
LTM-230	.230 (5.8)	.060 (1.5)	LTM-410	.410 (10.4)	.310 (7.9)	LTM-750	.750 (19.1)	.685 (17.4)
LTM-240	.240 (6.1)	.060 (1.5)	LTM-420	.420 (10.7)	.310 (7.9)	LTM-770	.770 (19.6)	.685 (17.4)
LTM-250	.250 (6.4)	.185 (4.7)	LTM-430	.430 (10.9)	.310 (7.9)	LTM-800	.800 (20.3)	.685 (17.4)
LTM-260	.260 (6.6)	.185 (4.7)	LTM-440	.440 (11.2)	.310 (7.9)	LTM-820	.820 (20.8)	.685 (17.4)
LTM-270	.270 (6.9)	.185 (4.7)	LTM-450	.450 (11.4)	.310 (7.9)	LTM-850	.850 (21.6)	.685 (17.4)
LTM-280	.280 (7.1)	.185 (4.7)	LTM-460	.460 (11.7)	.310 (7.9)	LTM-870	.870 (22.1)	.685 (17.4)
LTM-290	.290 (7.4)	.185 (4.7)	LTM-480	.480 (12.2)	.310 (7.9)	LTM-900	.900 (22.9)	.685 (17.4)

LED HOLDERS

94V-0
U.L. RATED MATERIAL

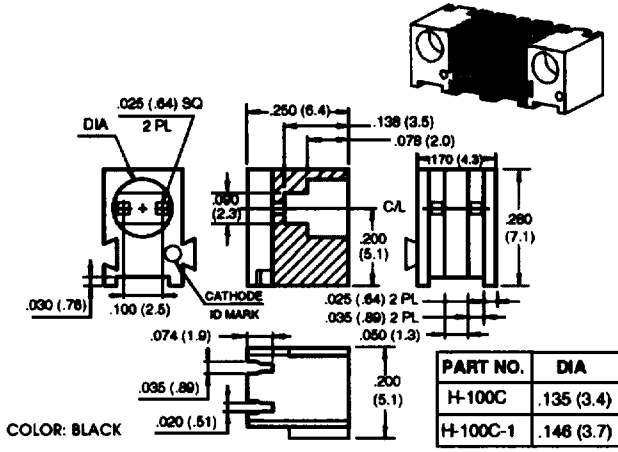
SINGLE T-1 LED HOLDERS FOR 90° DISPLAY MOUNTING

H-101C



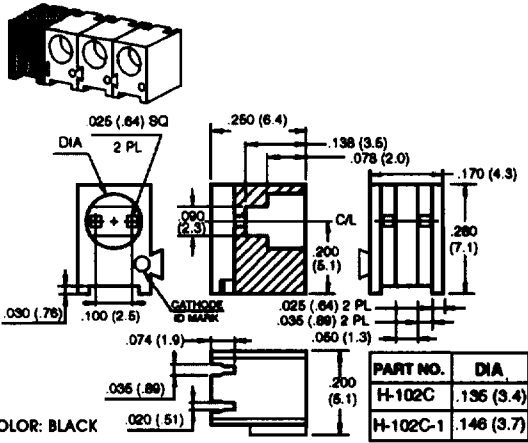
COLOR: BLACK

H-100C



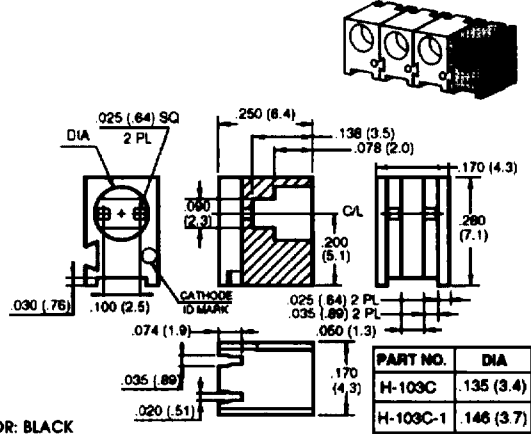
COLOR: BLACK

H-102C

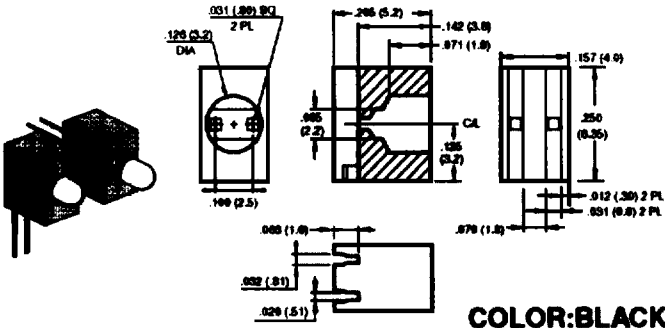


COLOR: BLACK

H-103C

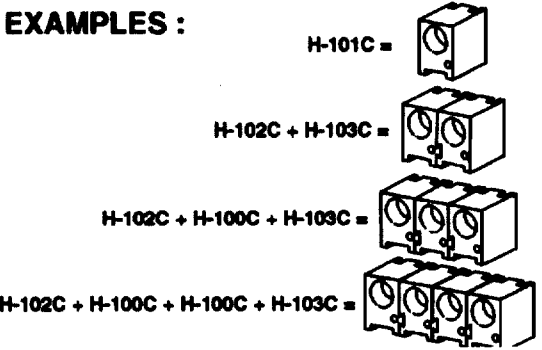


COLOR: BLACK



COLOR: BLACK

EXAMPLES :

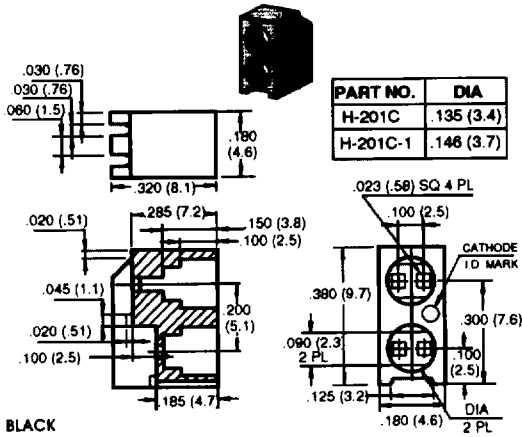


LED ASSEMBLIES & HARDWARE

94V-0
U.L. RATED MATERIAL

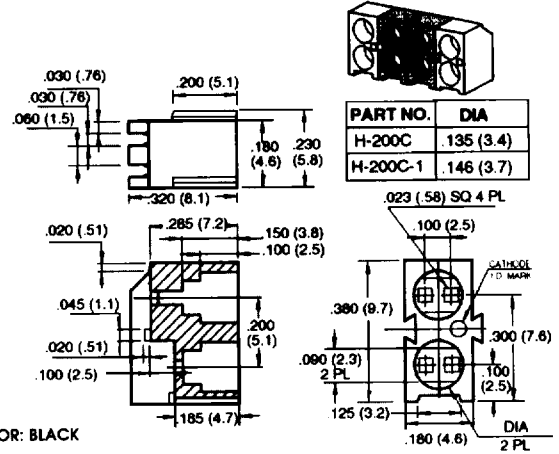
DOUBLE T-1 LED HOLDERS FOR 90° DISPLAY MOUNTING

H-201C



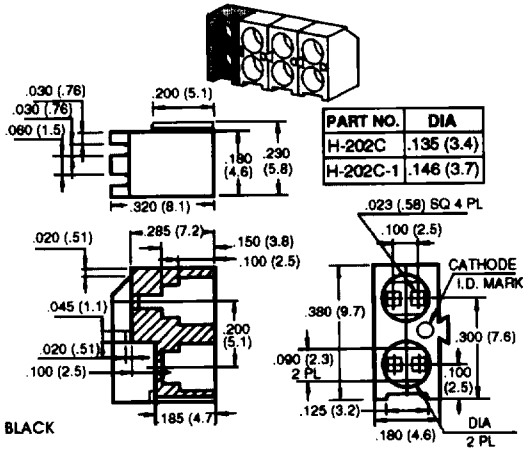
COLOR: BLACK

H-200C



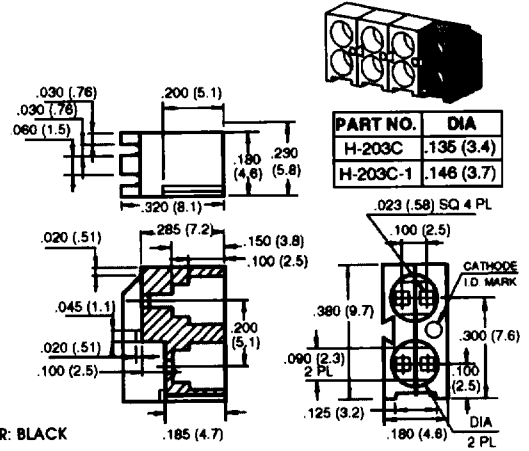
COLOR: BLACK

H-202C



COLOR: BLACK

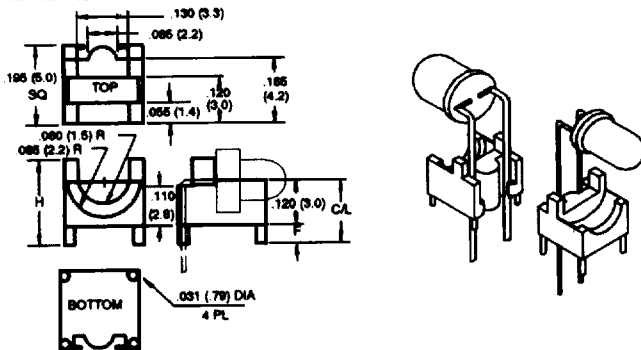
H-203C



COLOR: BLACK

T-1 LED HOLDER/SPACER FOR 90° DISPLAY MOUNTING

999-Series



94V-2
U.L. RATED MATERIAL

COLOR: NATURAL OR BLACK

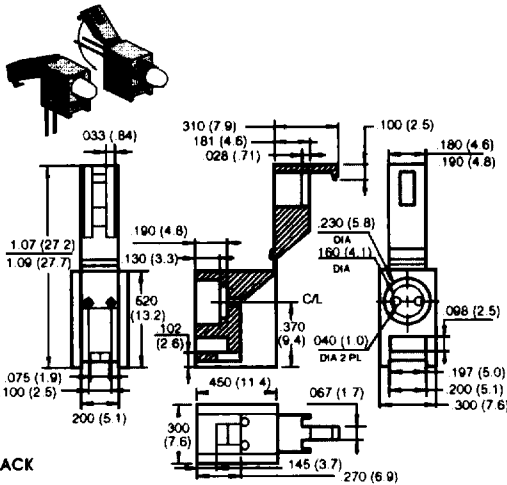
PART NO.	C/L	H	F
999-125	.125 (3.2)	.180 (4.6)	.000
999-150	.150 (3.8)	.205 (5.2)	.025 (.64)
999-175	.175 (4.4)	.230 (5.8)	.050 (1.3)
999-200	.200 (5.1)	.255 (6.5)	.075 (1.9)

LED ASSEMBLIES & HARDWARE

94V-0
U.L. RATED MATERIAL

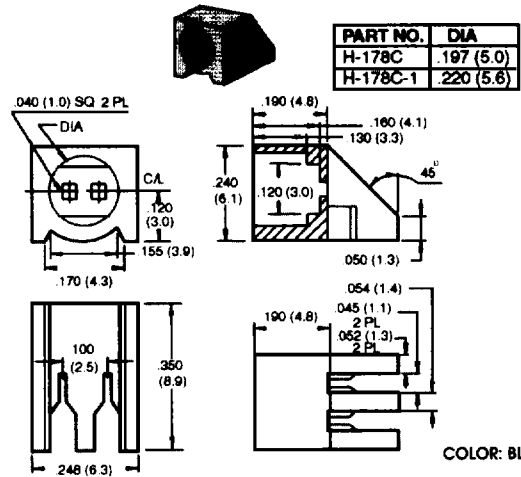
SINGLE T-1 3/4 LED HOLDERS FOR 90° DISPLAY MOUNTING

H-176



COLOR: BLACK

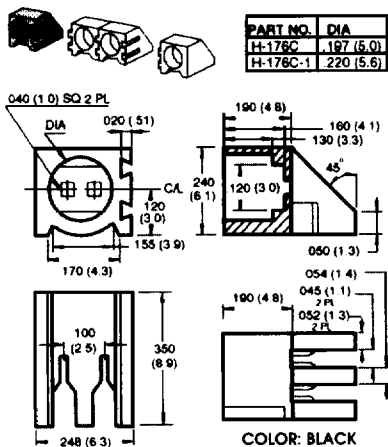
H-178C



PART NO.	DIA
H-178C	197 (5.0)
H-178C-1	220 (5.6)

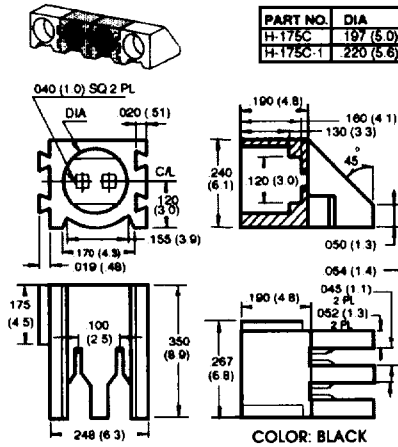
COLOR: BLACK

H-176C



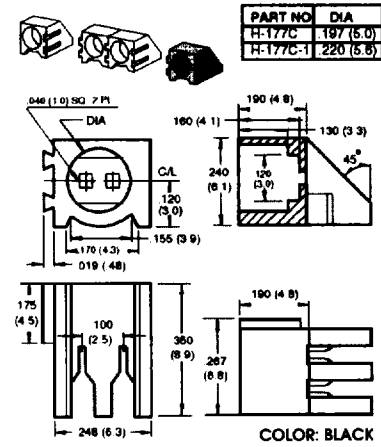
COLOR: BLACK

H-175C

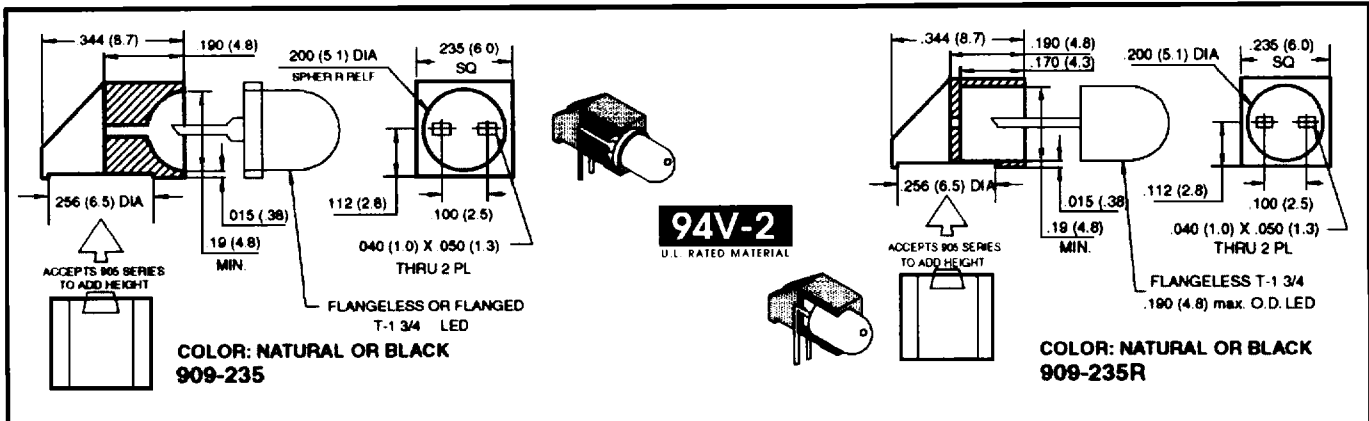


COLOR: BLACK

H-177C



COLOR: BLACK



94V-2
U.L. RATED MATERIAL

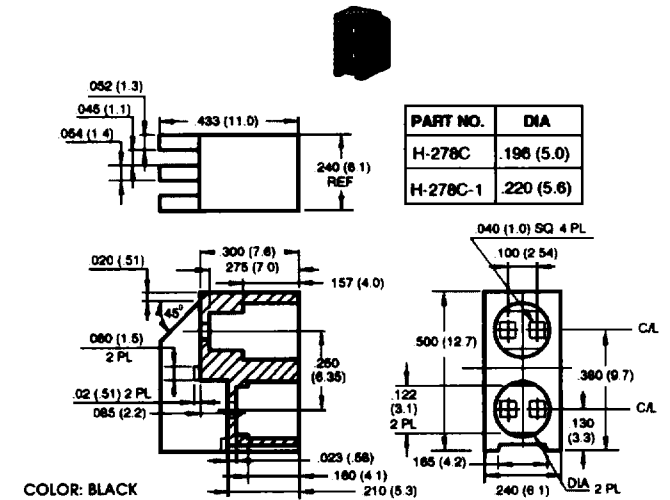
COLOR: NATURAL OR BLACK
909-235R

LED COMPONENTS & HARDWARE

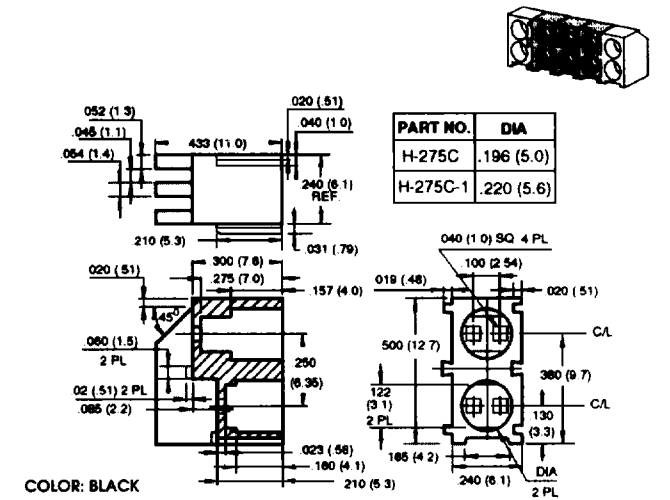
94V-0
U.L. RATED MATERIAL

DOUBLE T-1 3/4 LED HOLDERS FOR 90° DISPLAY MOUNTING

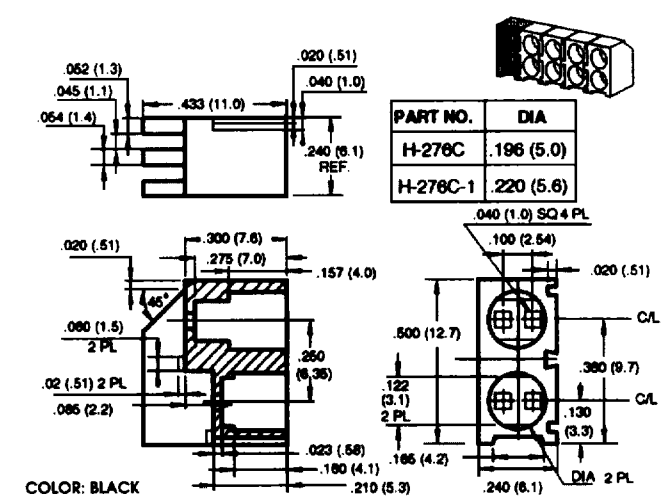
H-278C



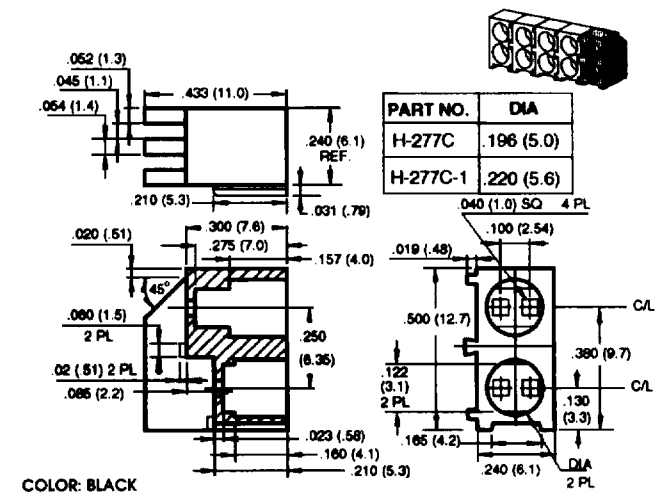
H-275C



H-276C



H-277C



EXAMPLES:

PART HAS TWO DIFFERENT DIAMETERS
ONE AT .196 (5.0) AND OTHER AT .220 (5.6)

H-278C =	
H-276C + H-277C =	
H-276C + H-275C + H-277C =	

VERSATILITY/Immediate Availability

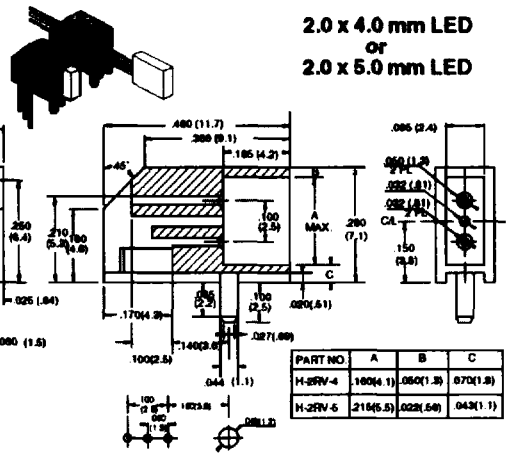
The use of coupling LED Holders assures accurate, rigid and uniform right angle LED mounting with immediate availability in any color combination, chosen intensities and unlimited array patterns, while reducing stocking requirements and lead times.

LED SERIES & HARDWARE

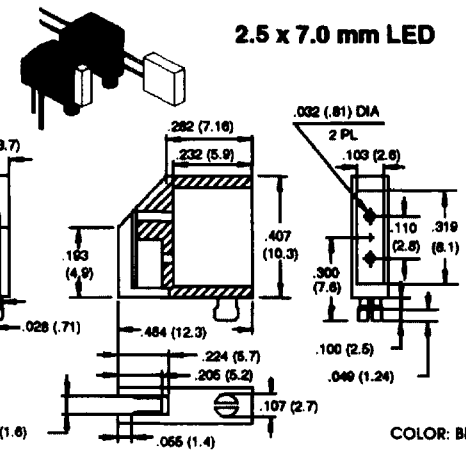
94V-0
U.L. RATED MATERIAL

SINGLE RECTANGULAR LED HOLDERS FOR 90° DISPLAY MOUNTING

H-1RV



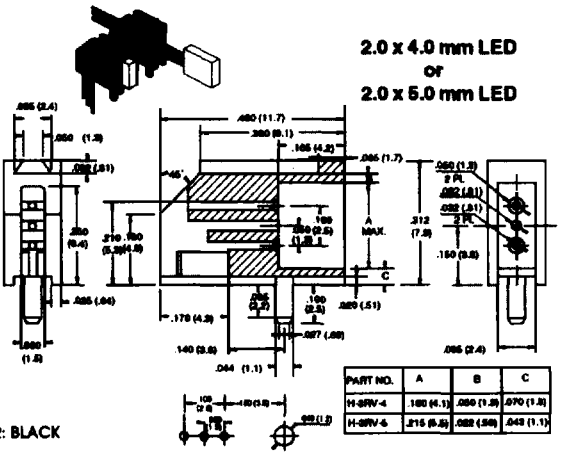
COLOR: BLACK



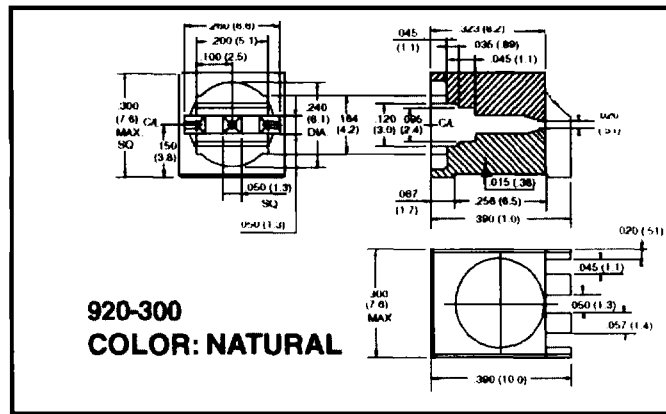
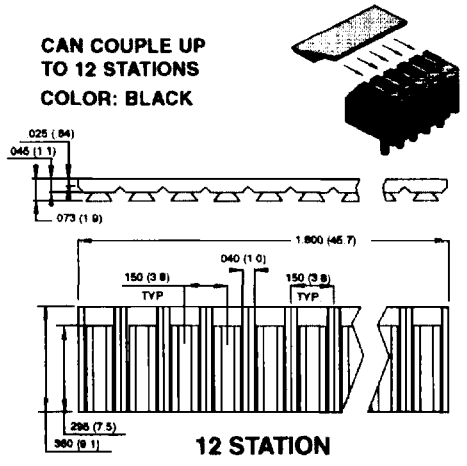
COLOR: BLACK

MULTIPLE RECTANGULAR LED HOLDERS FOR 90° DISPLAY MOUNTING

H-3RV-C

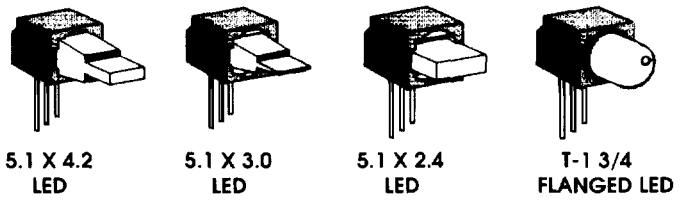


COLOR: BLACK



MULTI FUNCTIONAL 3 LEADED LED HOLDER

94V-2
U.L. RATED MATERIAL



LED ASSEMBLIES & HARDWARE

SNAP-IN MOUNTING HARDWARE FOR PANEL MOUNTED LEDs

MATERIAL SPECIFICATIONS:
 Nylon per ASTM D 4066 PA 111
 U.L. Rated 94V-2, 94V-0 OR
 Polypropylene as designated
COLOR: Black

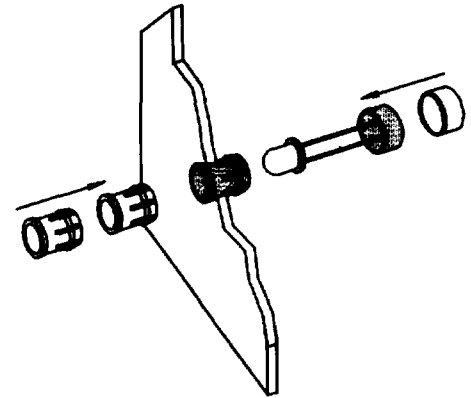
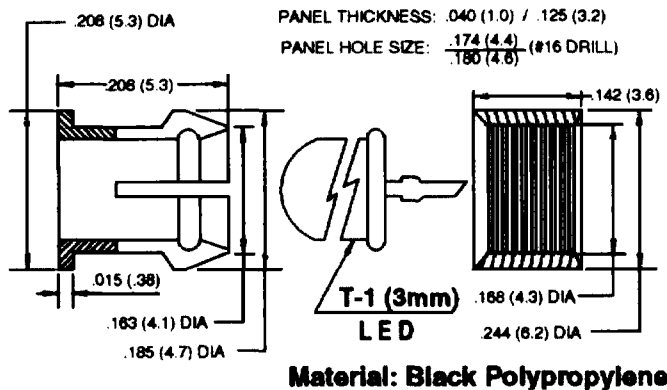
- Securely and uniformly positions panel-mounted LEDs
- Available styles for T-1, T-1 3/4 and Rectangular LEDs, these easy to use devices also protect and enhance panel mounted lighted displays, all at a low per station cost.
- Precision molded
- Improves and enhances display appearance
- Available in sets (Clip & Ring), from stock

Designed to provide an improved method of securely and uniformly mounting T-1 (3mm), T-1 3/4 (5mm), and Rectangular (.245"x.145") LEDs, these easy to use devices also protect and enhance panel mounted lighted displays, all at a low per station cost.

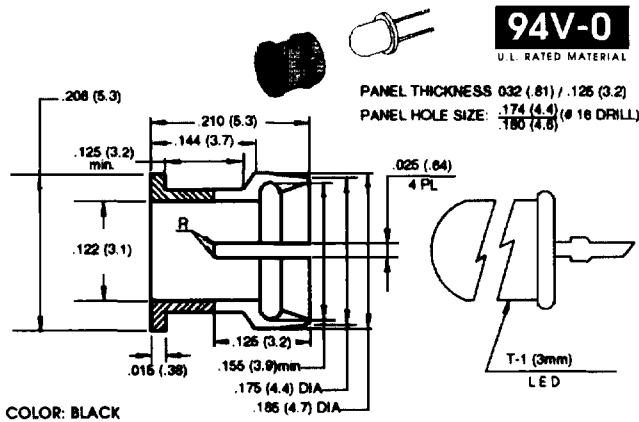
Precision molded to close tolerances, the devices mate together by simply inserting the "clip" from the front of the panel, then assembling the LED into the "clip" from the rear of the panel. The "ring" is pressed onto the engaging rear part of the "clip" from the rear of the panel for firm retention.

CLIPS AND RINGS FOR T-1 LEDs

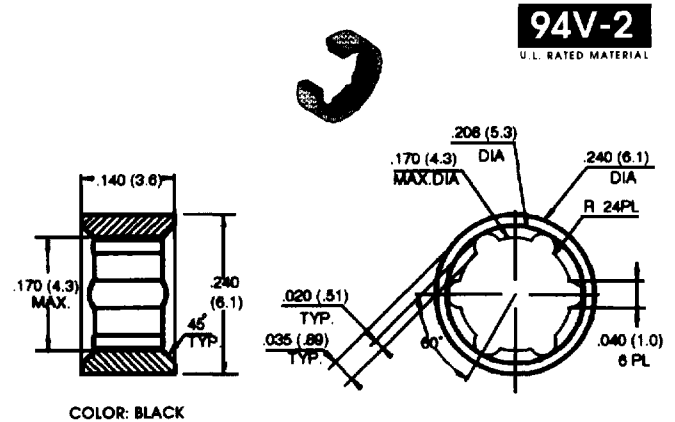
CR-100 (Clips & Ring) SET



C-104 (Clip Only)

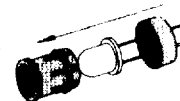


R-104 (Ring Only)



***NOTE:**

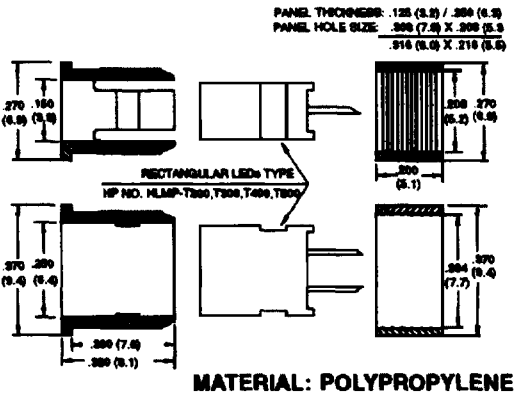
To order a **SET** of **C-104** (Clip) & **R-104** (Ring), use part number **CR-104**



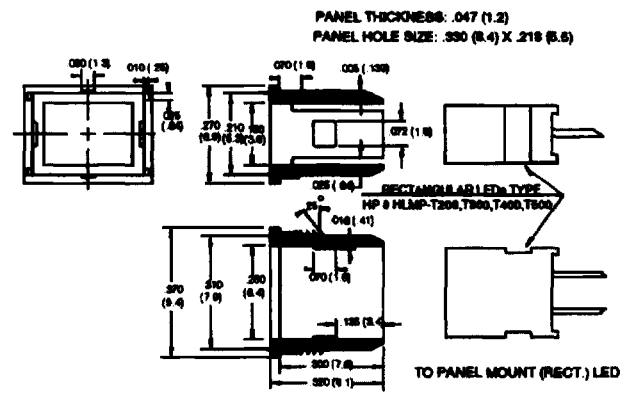
LED ASSEMBLIES & HARDWARE

CLIPS AND RINGS FOR RECTANGULAR LEDs

CR-300 (Clip & Ring) SET

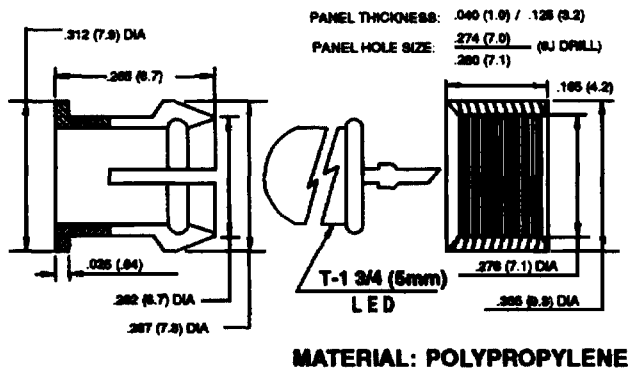


C-301-1 (Clip Only) (R&M) PARTING

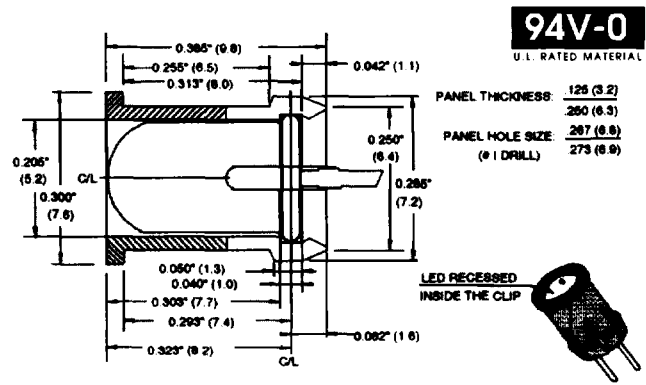


CLIPS AND RINGS FOR T-1 3/4 LEDs

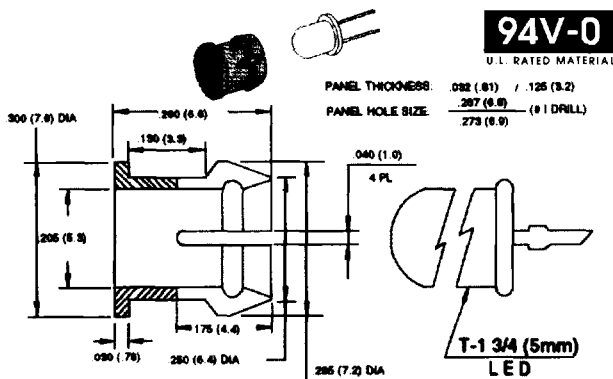
CR-175 (Clip & Ring) SET



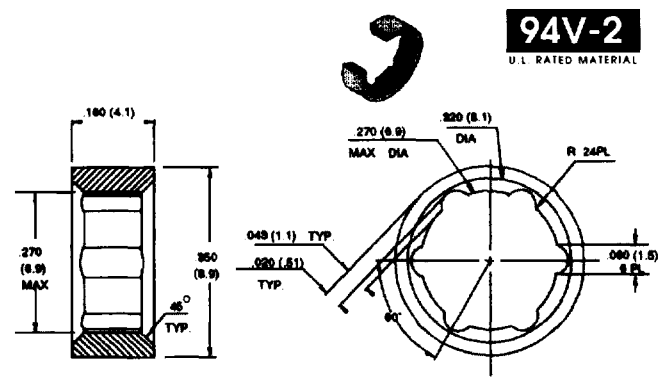
C-174L (Clip Only)



CR-175 (Clip Only)



C-174 (Ring Only)



*NOTE: To order SETS of C-174 (Clip) & R-174 (Ring), use part number CR-174
 To order C-174L (Clip) & R-174 (Ring), use part number CR-174L

