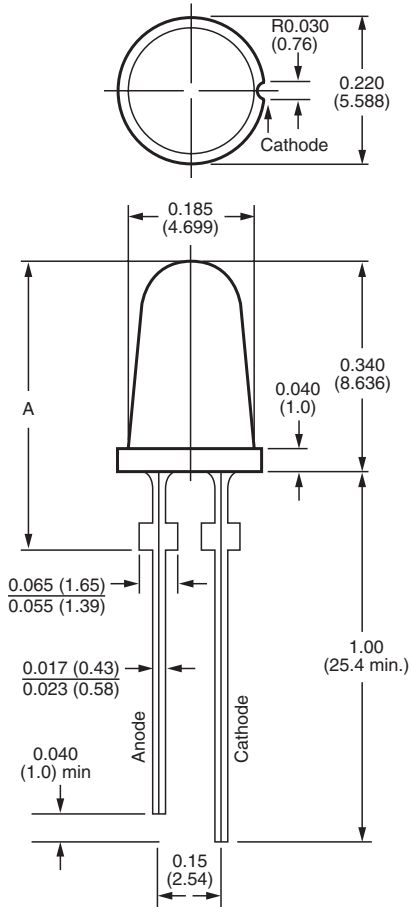


## MV502XA

## Standard Red

### PACKAGE DIMENSIONS



#### NOTES:

1. All dimensions in inches (mm).
2. Tolerances are  $\pm 0.010$ " (0.25mm) unless other specified.

### DESCRIPTION

The MV502X series of solid state indicators is made with gallium arsenide phosphide light emitting diodes. Encapsulation and lens is epoxy. Various lens effects are available for many indicators applications.

### FEATURES

- Tapered barrel T-1<sup>3</sup>/<sub>4</sub>
- Red light source with various lens colors and effects
- T-1<sup>3</sup>/<sub>4</sub> with stand-off
- Versatile mounting on PC board or panel

### PHYSICAL CHARACTERISTICS

Type	A	Lens Color	Lens Effect
MV5021A	0.430 $\pm$ 0.015 (10.92 $\pm$ 0.381)	White Diffused	Soft
MV5022A		Transparent Red	Point
MV5023A		Red Diffused	Soft
MV5024A	0.460 $\pm$ 0.015 (11.60 $\pm$ 0.381)	Red Diffused	Soft
MV5025A		Red Diffused	Flooded
MV5026A		Dark Red Diffused	Flooded

**MV502XA**

**Standard Red**

**ABSOLUTE MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

Parameter	Rating	Unit
Power dissipation at 25°C ambient	180	mW
Derate linearly from 25°C	2	mW/°C
Storage and operating temperatures	-55°C to +100	°C
Lead soldering time at 260°C (See Note 1)	5	sec
Continuous forward current at 25°C	100	mA
Peak forward current (1µsec pulse, 0.3% duty cycle)	1.0	A
Reverse voltage	5.0	V

**Notes**

- The leads of the device were immersed in molten solder at 260°C to a point 1/16 inch (1.6mm) from the body of the device per MIL-S-750, with a dwell time of 5 seconds.

**ELECTRICAL / OPTICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$ )

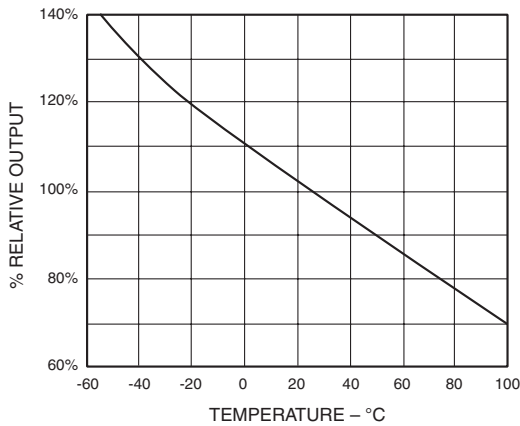
Part Number	Test Conditions	Units	5021A	5022A	5023A	5024A	5025A	5026A	
Luminous Intensity	min.	$I_F = 20 \text{ mA}$	mcd	0.5	0.6	0.4	0.9	0.1	0.1
	typ.	$I_F = 20 \text{ mA}$	mcd	1.6	1.6	1.6	3.0	0.4	0.6
Peak Wavelength	$I_F = 20 \text{ mA}$	nm	660	660	660	660	660	660	
Spectral line half width	$I_F = 20 \text{ mA}$	nm	20	20	20	20	20	20	
Forward voltage $V_F$	typ.	$I_F = 20 \text{ mA}$	V	1.65	1.65	1.65	1.65	1.65	1.65
	max.	$I_F = 20 \text{ mA}$	V	2.0	2.0	2.0	2.0	2.0	2.0
Reverse current $I_R$	max.	$V_R = 5.0\text{V}$	µA	100	100	100	100	100	100
Reverse voltage $V_R$	min.	$I_R = 100 \text{ µA}$	V	5.0	5.0	5.0	5.0	5.0	5.0
Capacitance	typ.	$V = 0$	pF	35	35	35	35	35	35
Viewing Angle	Between 50% Points	degrees	90	90	90	60	180	90	
Rise time and fall time	10%-90% 50Ω system	nsec	50	50	50	50	50	50	
	90%-10% 50Ω system	nsec	50	50	50	50	50	50	

## MV502XA

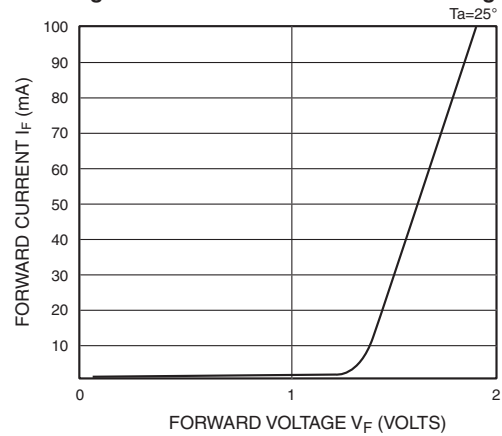
## Standard Red

### TYPICAL PERFORMANCE CURVES

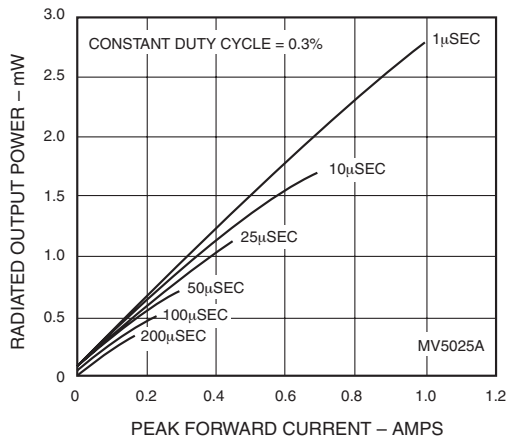
**Fig. 1 Output vs. Temperature**



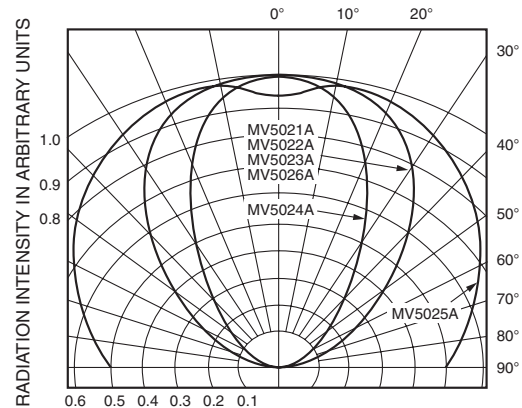
**Fig. 2 Forward Current vs. Forward Voltage**



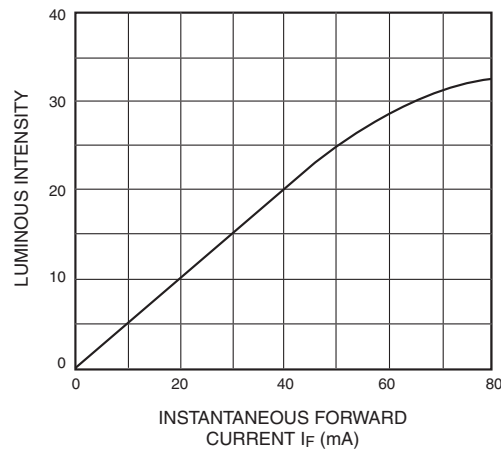
**Fig. 3 Radiated Output Power vs. Peak Forward Current**



**Fig. 4 Spatial Distribution**



**Fig. 5 Forward Intensity vs. Forward Current**



**DISCLAIMER**

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

**LIFE SUPPORT POLICY**

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.