

# Kingbright

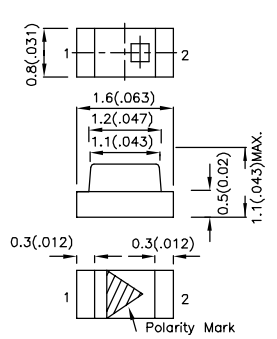



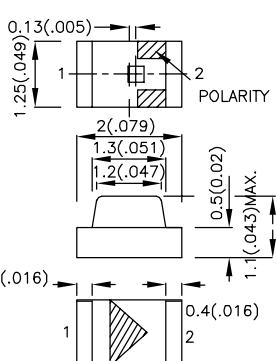



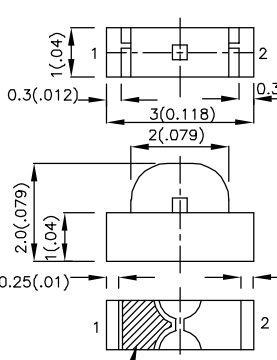


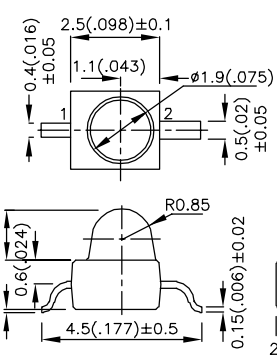



## Optoelectronic Components

### INFRARED & PHOTOTRANSISTOR

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INFRARED EMITTING DIODE

Part Number	Material	$\lambda_P$ (nm)	Lens Type	Iv (mcd) @20mA *50mA		Viewing Angle	Dimension
				Min.	Typ.		
KP-1608F3C	GaAs	940	water clear	0.8	2	120°	1.6mm x 0.8mm x 1.1mm (0603)   KP-1608F3C F3 1  2 SF4 1  2 Units : mm(inch) Tolerance : ±0.1(0.004)
KP-1608SF4C	GaAlAs	880	water clear	0.8	1.5	120°	
KP-2012F3C	GaAs	940	water clear	0.8	2	120°	2.0mm x 1.25mm x 1.1mm (0805)   KP-2012F3C F3 1  2 SF4 1  2 Units : mm(inch) Tolerance : ±0.1(0.004)
KP-2012SF4C	GaAlAs	880	water clear	0.8	1.5	120°	
KPA-3010F3C	GaAs	940	water clear	0.8	2	120°	3.0mm x 1.0mm x 2.0mm (1104 Right Angle)   KPA-3010F3C F3 1  2 Units : mm(inch) Tolerance : ±0.15(0.006)
KM2520F3C03	GaAs	940	water clear	3	8	20°	2mm Subminiature IR Emitter   KM2520F3C03 F3 1  2 SF4 1  2 Units : mm(inch) Tolerance : ±0.25(0.01)
KM2520SF4C03	GaAlAs	880	water clear	2	4	20°	



PHOTOTRANSISTOR

Part Number	Lens Type
KP-1608P1C	water clear
KP-2012P3C	water clear
KP-3216P3C	water clear
KPA-3010P3C	water clear

Electrical And Radiant Characteristics  $T_A = 25^\circ\text{C}$

Parameter	Symbol	Part Number	Min.	Typ.	Max.	Unit	Test Condition
Collector-to-Emitter Breakdown Voltage	$V_{BR\ CE0}$	-	30	-	-	V	$I_C = 100\mu\text{A}$ $E_e = 0\text{mW/cm}^2$
Emitter-to-Collector Breakdown Voltage	$V_{BR\ ECO}$	-	5	-	-	V	$I_E = 100\mu\text{A}$ $E_e = 0\text{mW/cm}^2$
Collector-to-Emitter Saturation Voltage	$V_{CE(SAT)}$	-	-	-	0.8	V	$I_C = 2\text{mA}$ $E_e = 20\text{mW/cm}^2$
Collector Dark Current	$I_{CEO}$	-	-	-	100	nA	$V_{CE} = 10\text{V}$ $E_e = 0\text{mW/cm}^2$
Rise Time (10% to 90%)	$T_R$	-	-	15	-	$\mu\text{s}$	$V_{CE} = 5\text{V}$ $I_C = 1\text{mA}$ $R_L = 1\text{K}\Omega$
Fall Time (90% to 10%)	$T_F$	-	-	15	-	$\mu\text{s}$	
On State Collector Current	$I_{(ON)}$	KP-1608P1C	0.1	0.3	-	mA	$V_{CE} = 5\text{V}$ , $E_e = 1\text{mW/cm}^2$ $\lambda = 940\text{nm}$
		KP-2012P3C	0.2	0.4	-	mA	
		KP-3216P3C	0.2	0.4	-	mA	
		KPA-3010P3C	0.2	0.4	-	mA	

Absolute Maximum Rating  $T_A = 25^\circ\text{C}$

Parameter	Maximum Ratings
Collector-to-Emitter Voltage	30V
Emitter-to-Collector Voltage	5V
Power Dissipation at (or below) $25^\circ\text{C}$ Free Air Temperature	100mW
Operating Temperature Range	$-40^\circ\text{C} \sim +85^\circ\text{C}$
Storage Temperature Range	$-40^\circ\text{C} \sim +85^\circ\text{C}$

Dimension

1.6mm x 0.8mm x 1.1mm (0603)

Units : mm(inch)  
Tolerance :  $\pm 0.1(0.004)$

Dimension

2.0mm x 1.25mm x 1.1mm (0805)

Units : mm(inch)  
Tolerance :  $\pm 0.1(0.004)$

Dimension

3.2mm x 1.6mm x 1.1mm (1206)


Units : mm(inch)  
Tolerance :  $\pm 0.2(0.008)$

Dimension

3.0mm x 1.0mm x 2.0mm (1104)

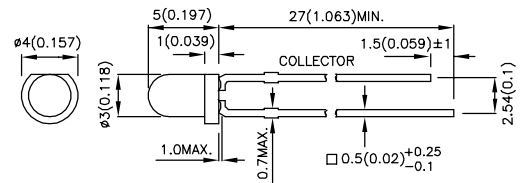
Units : mm(inch)  
Tolerance :  $\pm 0.15(0.006)$

## PHOTOTRANSISTOR

Part Number	Lens Type	Dimension
L-3DP3BT	blue transparent	T-1 (3mm) Phototransistor  L-3DP3BT
L-7113P3C	water clear	

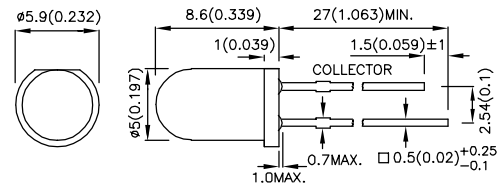
### Electrical And Radiant Characteristics TA =25°C

Parameter	Symbol	Part Number	Min.	Typ.	Max.	Unit	Test Condition
Collector-to-Emitter Breakdown Voltage	$V_{BR\ CE0}$	-	30	-	-	V	$I_C=100\mu A$ $E_e=0mW/cm^2$
Emitter-to-Collector Breakdown Voltage	$V_{BR\ ECO}$	-	5	-	-	V	$I_E=100\mu A$ $E_e=0mW/cm^2$
Collector-to-Emitter Saturation Voltage	$V_{CE(SAT)}$	-	-	-	0.8	V	$I_C=2mA$ $E_e=20mW/cm^2$
Collector Dark Current	$I_{CEO}$	-	-	-	100	nA	$V_{CE}=10V$ $E_e=0mW/cm^2$
Rise Time (10% to 90%)	$T_R$	-	-	15	-	$\mu s$	$V_{CE}=5V$ $I_C=1mA$ $R_L=1K\Omega$
Fall Time (90% to 10%)	$T_F$	-	-	15	-	$\mu s$	
On State Collector Current	$I_{(ON)}$	L-3DP3BT	0.1	0.2	-	mA	$V_{CE}=5V$ , $E_e=1mW/cm^2$ $\lambda=940nm$
		L-7113P3C	0.5	2.5	-	mA	



Units : mm(inch)  
Tolerance : ±0.25(0.01)

T-1 3/4 (5mm) Phototransistor



Units : mm(inch)  
Tolerance : ±0.25(0.01)

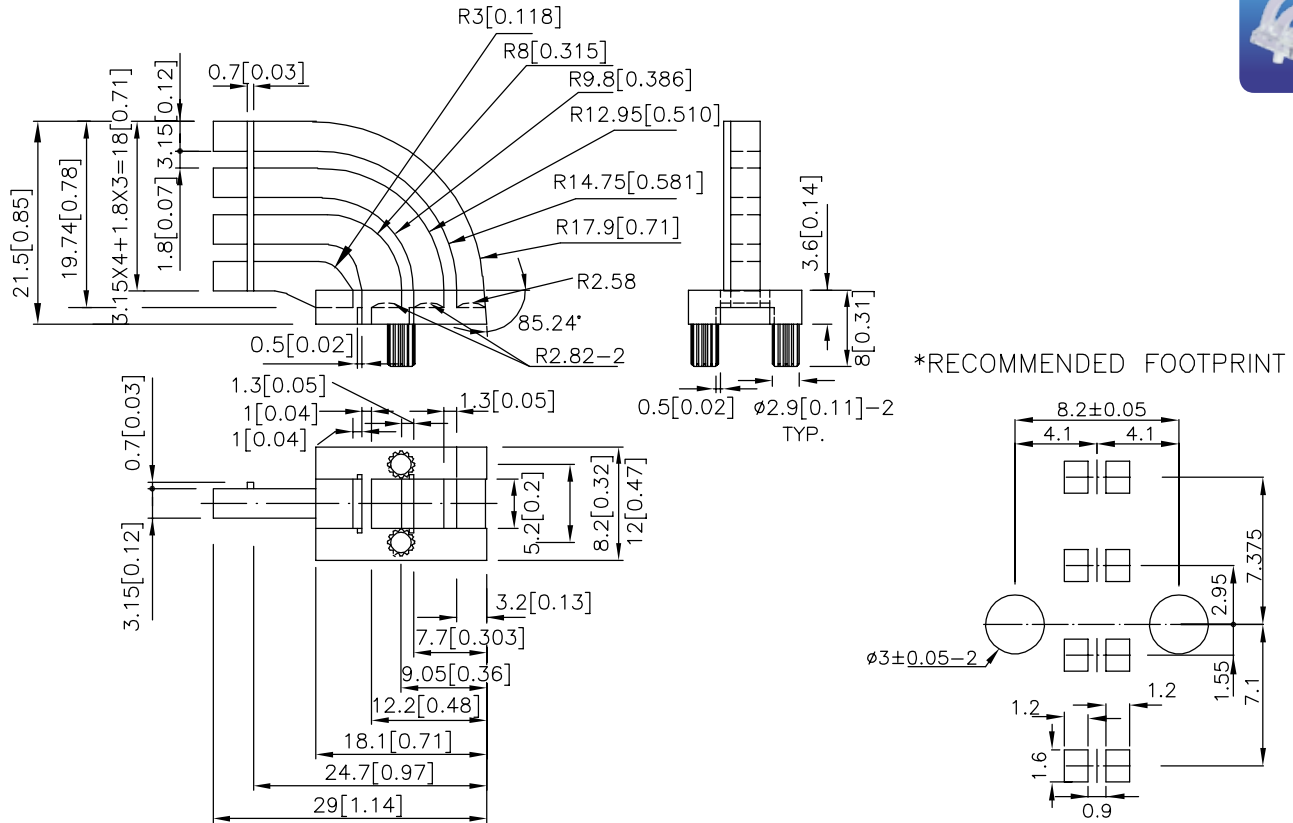
### Absolute Maximum Rating TA =25°C

Parameter	Maximum Ratings
Collector-to-Emitter Voltage	30V
Emitter-to-Collector Voltage	5V
Power Dissipation at (or below) 25°C Free Air Temperature	100mW
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature Range	-40°C ~ +85°C
Lead Soldering Temperature (>5mm For 5sec)	260°C

KL-05



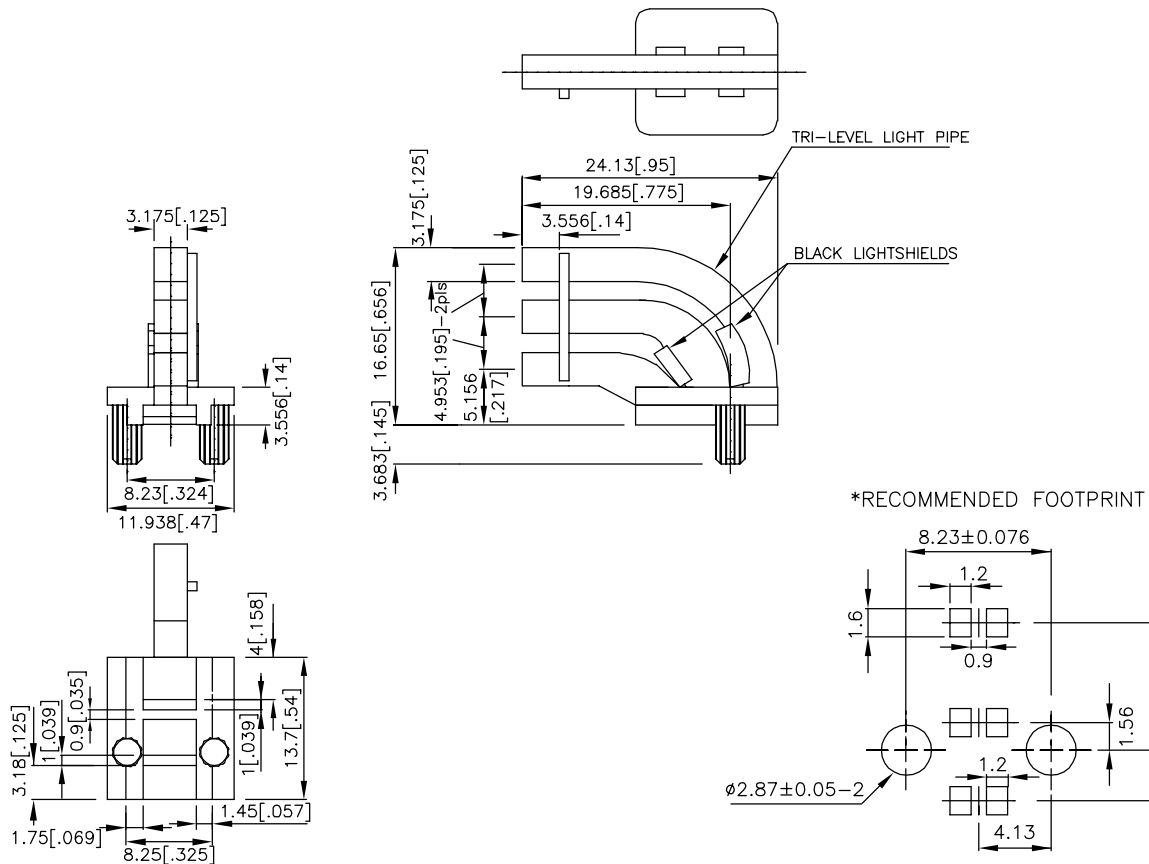
KL-05



KL-07LS



KL-07LS

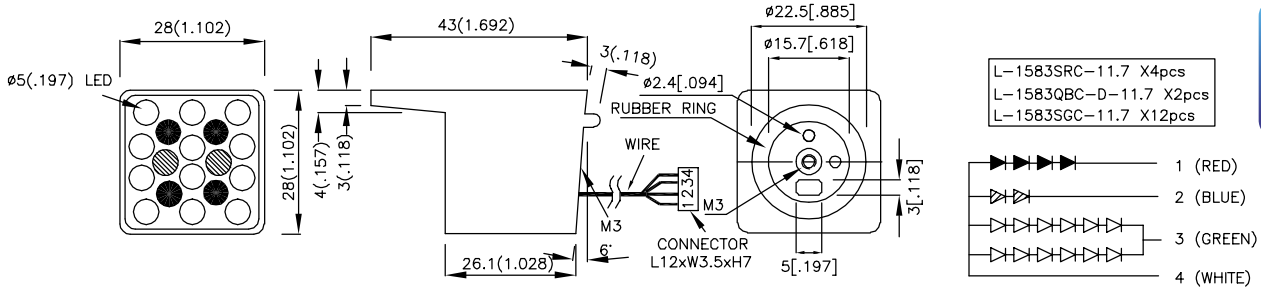


NOTES:

1. All dimensions are in millimeters(inches).
2. Tolerance is  $\pm 0.25\text{mm}(0.01\text{inch})$  unless otherwise noted.

## 28mmX28mm

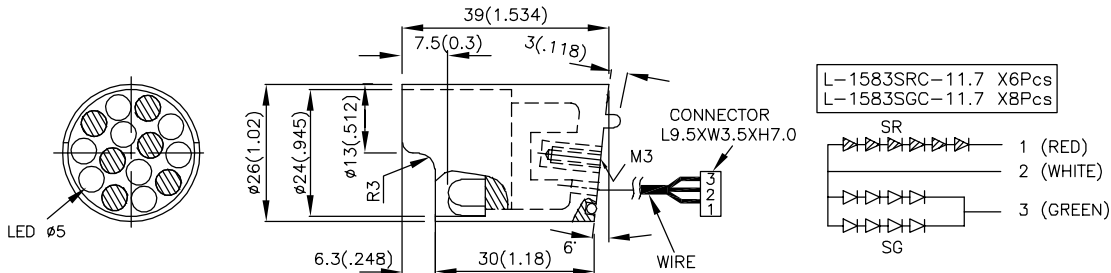
Part Number	Material	$\lambda_D$ (nm)	Lens Type	Iv (mcd)		Viewing Angle	IF(mA)
				Min.	Typ.		
BL0709-18-462	GaAlAs	640	water clear	400	800	40°	20
	InGaN	465	water clear	1600	3000	40°	20
	GaP	568	water clear	1200	2400	40°	40



BL0709-18-462

## 26mm

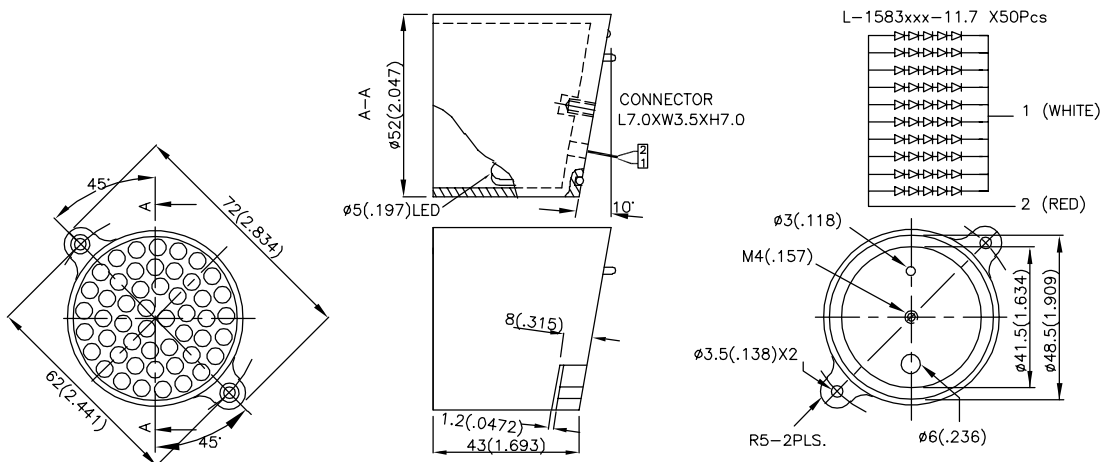
Part Number	Material	$\lambda_D$ (nm)	Lens Type	Iv (mcd)		Viewing Angle	IF(mA)
				Min.	Typ.		
BL0102-14-34	GaAlAs	640	water clear	600	1200	40°	20
	GaP	568	water clear	800	1600	40°	40



BL0102-14-34

## 52mm

Part Number	Material	$\lambda_D$ (nm)	Lens Type	Iv (mcd)		Viewing Angle	IF(mA)
				Min.	Typ.		
BL0307-50-360	AlGaInP	570	water clear	15000	25000	40°	200
BL0307-50-374	AlGaInP	590	water clear	45000	75000	40°	200
BL0307-50-433	AlGaInP	630	water clear	12300	23000	40°	200



BL0307-50-xxx