

Kingbright

Optoelectronic Components

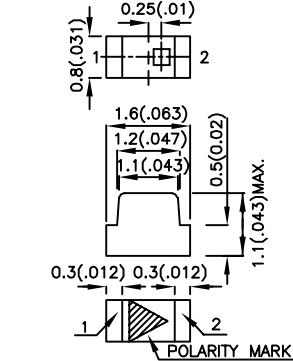
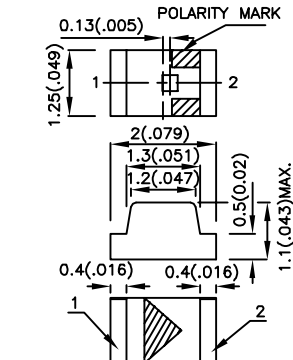
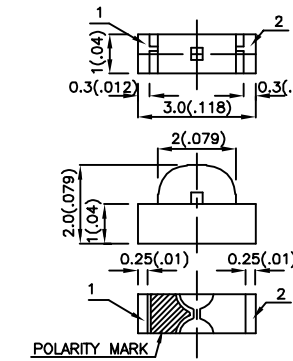
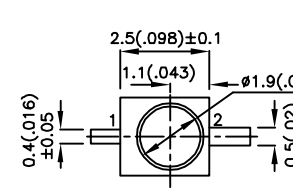
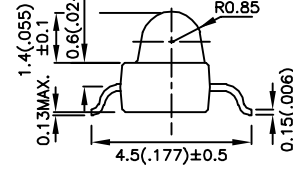


Infrared & Phototransistor **88**


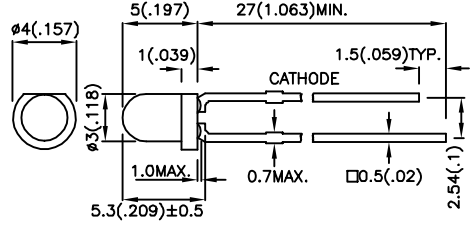

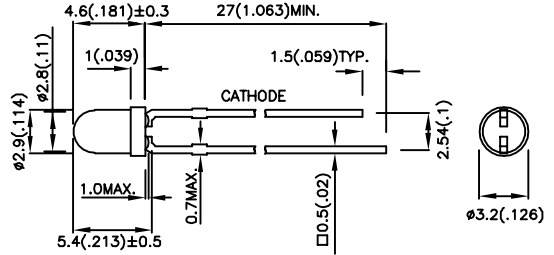


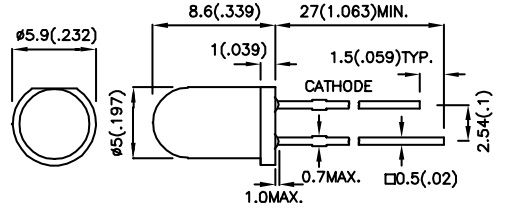
Infrared Emitting Diode 88

Phototransistor 90

INFRARED EMITTING DIODE

PART NUMBER	MATERIAL	λ_P (nm)	LENS TYPE	Po (mW/sr) @20mA *50mA		VIEWING ANGLE	DIMENSION
				MIN.	TYP.		
KP-1608F3C	GaAs	940	water clear	0.7	3	120°	1.6mm x 0.8mm x 1.1mm (0603)  Units : mm(inch) Tolerance : ±0.1(0.004)
KP-1608SF4C	GaAlAs	880	water clear	0.4	1.5	120°	
KP-2012F3C	GaAs	940	water clear	0.7	3	120°	2.0mm x 1.25mm x 1.1mm (0805)  Units : mm(inch) Tolerance : ±0.1(0.004)
KP-2012SF4C	GaAlAs	880	water clear	0.4	1.5	120°	
KPA-3010F3C	GaAs	940	water clear	0.7	2	120°	3.0mm x 1.0mm x 2.0mm (1104 Right Angle)  Units : mm(inch) Tolerance : ±0.15(0.006)
KM2520F3C03	GaAs	940	water clear	1.6	8	20°	2mm Subminiature IR Emitter  Units : mm(inch) Tolerance : ±0.25(0.01)
				*10	*15		
KM2520SF4C03	GaAlAs	880	water clear	1.6	4	20°	 Units : mm(inch) Tolerance : ±0.25(0.01)
				*2.6	*8		

INFRARED EMITTING DIODE

PART NUMBER	MATERIAL	λ_P (nm)	LENS TYPE	Po (mW/sr) @20mA *50mA		VIEWING ANGLE 2 θ 1/2	DIMENSION
				MIN.	TYP.		
L-34F3C	GaAs	940	water clear	7	40	50°	T-1 (3mm) Round  L-34F3C 
L-34F3BT	GaAs	940	blue transparent	4	40	50°	
L-34SF4C	GaAlAs	880	water clear	7	40	50°	
L-34SF4BT	GaAlAs	880	blue transparent	4	40	50°	
L-34SF6C	GaAlAs	860	water clear	7	15	50°	
L-34SF6BT	GaAlAs	860	blue transparent	7	15	50°	
L-34SF7C	GaAlAs	850	water clear	7	18	50°	
L-34SF7BT	GaAlAs	850	blue transparent	7	18	50°	
				*10	*45	50°	
				*10	*45	50°	
							Units : mm(inch) Tolerance : ±0.25(0.01)
L-7104F3C	GaAs	940	water clear	7	30	34°	T-1 (3mm) Round  L-7104F3C 
				*18	*80	34°	
L-7104F3BT	GaAs	940	blue transparent	7	28	34°	
				*18	*70	34°	
							Units : mm(inch) Tolerance : ±0.25(0.01)
L-7113F3C	GaAs	940	water clear	7	30	20°	T-1 3/4 (5mm) Round  L-7113F3C 
L-7113F3BT	GaAs	940	blue transparent	4	20	20°	
L-7113SF4C	GaAlAs	880	water clear	7	20	20°	
L-7113SF4BT	GaAlAs	880	blue transparent	4	20	20°	
L-7113SF6C	GaAlAs	860	water clear	10	40	20°	
L-7113SF6BT	GaAlAs	860	blue transparent	10	40	20°	
L-7113SF7C	GaAlAs	850	water clear	10	40	20°	
L-7113SF7BT	GaAlAs	850	blue transparent	10	40	20°	
				*50	*100	20°	
				*50	*100	20°	
							Units : mm(inch) Tolerance : ±0.25(0.01)

PHOTOTRANSISTOR

PART NUMBER	LENS TYPE	DIMENSION
KP-1608P1C	WATER CLEAR	1.6mm x 0.8mm x 1.1mm (0603)
KP-2012P3C	WATER CLEAR	2.0mm x 1.25mm x 1.1mm (0805)
KP-3216P3C	WATER CLEAR	3.2mm x 1.6mm x 1.1mm (1206)
KPA-3010P3C	WATER CLEAR	3.0mm x 1.0mm x 2.0mm (1104)

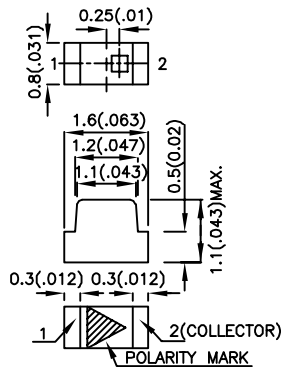
ELECTRICAL AND RADIANT CHARACTERISTICS $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	PART NUMBER	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Collector-to-Emitter Breakdown Voltage	$V_{BR\ CE0}$	-	30	-	-	V	$I_C = 100\mu\text{A}$ $E_e = 0\text{mW}/\text{cm}^2$
Emitter-to-Collector Breakdown Voltage	$V_{BR\ ECO}$	-	5	-	-	V	$I_E = 100\mu\text{A}$ $E_e = 0\text{mW}/\text{cm}^2$
Collector-to-Emitter Saturation Voltage	$V_{CE\ (SAT)}$	-	-	-	0.8	V	$I_C = 2\text{mA}$ $E_e = 20\text{mW}/\text{cm}^2$
Collector Dark Current	I_{CEO}	-	-	-	100	nA	$V_{CE} = 10\text{V}$ $E_e = 0\text{mW}/\text{cm}^2$
Rise Time (10% to 90%)	T_R	-	-	15	-	μs	$V_{CE} = 5\text{V}$ $I_C = 1\text{mA}$ $R_L = 1\text{K}\Omega$
Fall Time (90% to 10%)	T_F	-	-	15	-	μs	
On State Collector Current	$I_{(ON)}$	KP-1608P1C	0.1	0.3	-	mA	$V_{CE} = 5\text{V}$ $E_e = 1\text{mW}/\text{cm}^2$ $\lambda = 940\text{nm}$
		KP-2012P3C	0.1	0.3			
		KP-3216P3C	0.1	0.3			
		KPA-3010P3C	0.1	0.3			

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°C Free Air Temperature	100mW
Operating Temperature Range	$-40^\circ\text{C} \sim +85^\circ\text{C}$
Storage Temperature Range	$-40^\circ\text{C} \sim +85^\circ\text{C}$

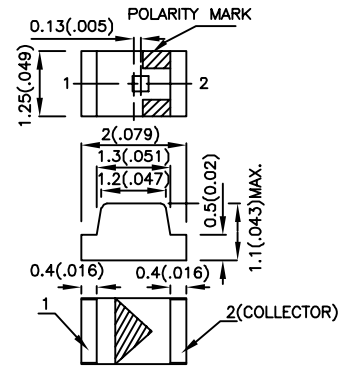
1.6mm x 0.8mm x 1.1mm (0603)



KP-1608P1C

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

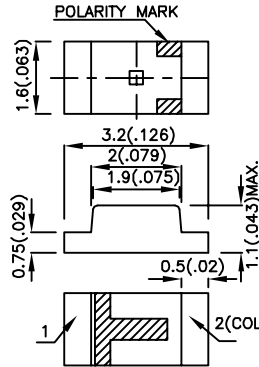
2.0mm x 1.25mm x 1.1mm (0805)



KP-2012P3C

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

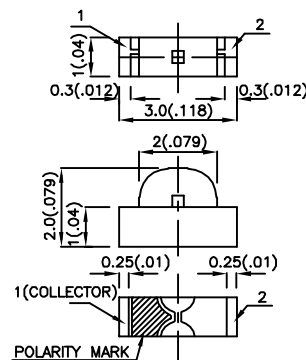
3.2mm x 1.6mm x 1.1mm (1206)



KP-3216P3C

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


3.0mm x 1.0mm x 2.0mm (1104)



KPA-3010P3C

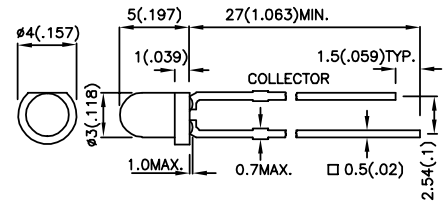
Units : mm(inch)
Tolerance : $\pm 0.15(0.006)$

PHOTOTRANSISTOR

PART NUMBER	LENS TYPE	DIMENSION
L-3DP3BT	BLUE TRANSPARENT	T-1 (3mm) PHOTOTRANSISTOR  L-3DP3BT
L-7113P3C	WATER CLEAR	

ELECTRICAL AND RADIANT CHARACTERISTICS $T_A = 25^\circ\text{C}$

PARAMETER	SYMBOL	PART NUMBER	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Collector-to-Emitter Breakdown Voltage	$V_{BR\ CE0}$	-	30	-	-	V	$I_C=100\mu\text{A}$ $E_e=0\text{mW}/\text{cm}^2$
Emitter-to-Collector Breakdown Voltage	$V_{BR\ ECO}$	-	5	-	-	V	$I_E=100\mu\text{A}$ $E_e=0\text{mW}/\text{cm}^2$
Collector-to-Emitter Saturation Voltage	$V_{CE(SAT)}$	-	-	-	0.8	V	$I_C=2\text{mA}$ $E_e=20\text{mW}/\text{cm}^2$
Collector Dark Current	I_{CEO}	-	-	-	100	nA	$V_{CE}=10\text{V}$ $E_e=0\text{mW}/\text{cm}^2$
Rise Time (10% to 90%)	T_R	-	-	15	-	μs	$V_{CE}=5\text{V}$ $I_C=1\text{mA}$ $R_L=1\text{K}\Omega$
Fall Time (90% to 10%)	T_F	-	-	15	-	μs	
On State Collector Current	$I_{(ON)}$	L-3DP3BT	0.2	0.5	-	mA	$V_{CE}=5\text{V}$, $E_e=1\text{mW}/\text{cm}^2$ $\lambda=940\text{nm}$
		L-7113P3C	0.1	0.5	-		



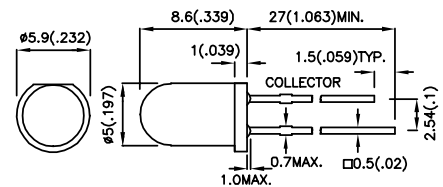
Units : mm(inch)
Tolerance : $\pm 0.25(0.01)$

T-1 3/4 (5mm) PHOTOTRANSISTOR



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°C Free Air Temperature	100mW
Operating Temperature Range	$-40^\circ\text{C} \sim +85^\circ\text{C}$
Storage Temperature Range	$-40^\circ\text{C} \sim +85^\circ\text{C}$
Lead Soldering Temperature (>5mm For 5sec)	260°C



Units : mm(inch)
Tolerance : $\pm 0.25(0.01)$