



QTB

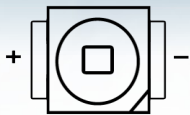
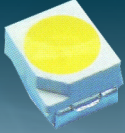
# OPTOELECTRONIC SHORTFORM CATALOGUE

**QT BRIGHTTEK**

2011- V1.0

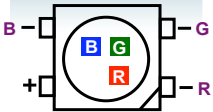
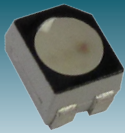
# SMD — PLCC Series

## ■ PLCC2, Top View, 3.5 x 2.8 x 1.9 mm



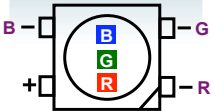
Product	Color	If (mA)	$\lambda_D$ (nm)		$V_F$ (V)		Iv (mcd)		Viewing Angle
			Min.	Max.	Typ.	Max.	Min.	Typ.	2 $\theta$ 1/2
QBLP670-IB	Blue	20	460	480	3.2	3.8	160	300	120
QBLP670-IG	True Green	20	520	540	3.2	3.8	780	1125	120
QBLP670-R	Red	20	620	635	1.9	2.4	120	210	120
QBLP670-AG	Yellow Green	20	564	576	1.9	2.4	70	100	120
QBLP670-Y	Yellow	20	582	595	1.9	2.4	120	180	120
QBLP670-O	Orange	20	600	612	1.9	2.4	140	320	120
			<b>CCT (K)</b>						
			Min.	Max.					
QBLP670-IW	White	20	5250	7500	3.2	3.8	1800	2250	120

## ■ PLCC4, Top View, 3.5 x 2.8 x 1.9 mm

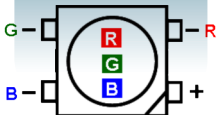


Product	Type	Color	If (mA)	$\lambda_D$ (nm)		$V_F$ (V)		Iv (mcd)		Viewing Angle
				Min.	Max.	Typ.	Max.	Min.	Typ.	2 $\theta$ 1/2
QBLP677-RGB1	Black Face	Red	20	620	635	1.9	2.4	360	500	120
		True Green	20	520	540	3.2	3.8	715	1400	120
		Blue	20	460	480	3.2	3.8	140	210	120

Product	Type	Color	If (mA)	$\lambda_D$ (nm)		$V_F$ (V)		Iv (mcd)		Viewing Angle
				Min.	Max.	Typ.	Max.	Min.	Typ.	2 $\theta$ 1/2
QBLP677-RGB2	Black Face	Red	20	620	635	1.9	2.4	140	230	120
		True Green	20	520	540	3.2	3.8	550	700	120
		Blue	20	460	480	3.2	3.8	110	140	120
QBLP677-RGB3	Black Housing	Red	20	620	635	1.9	2.4	220	330	120
		True Green	20	520	540	3.2	3.8	350	500	120
		Blue	20	460	480	3.2	3.8	75	100	120



## ■ Top View, 2.1 x 2.1 x 1.0 mm

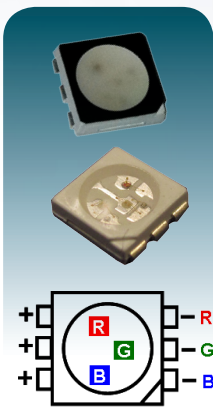


Product	Type	Color	If (mA)	$\lambda_D$ (nm)		$V_F$ (V)		Iv (mcd)		Viewing Angle
				Min.	Max.	Typ.	Max.	Min.	Typ.	2 $\theta$ 1/2
QBLP675-RGB2	Black Housing	Red	20	620	635	1.9	2.4	-	230	120
		True Green	20	520	540	3.2	3.8	-	450	120
		Blue	20	460	480	3.2	3.8	-	100	120



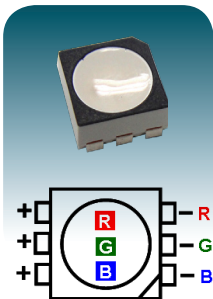
## ■ PLCC6, Top View, 5.0 x 5.0 x 1.6 mm

Product	Type	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle
				Min.	Max.	Typ.	Max.	Min.	Typ.	2θ1/2
QBLP679-RGB	White Face	Red	20	620	635	1.9	2.4	340	530	120
		True Green	20	520	540	3.2	3.8	900	1300	120
		Blue	20	460	480	3.2	3.8	210	280	120
QBLP679-RGB1	Black Face	Red	20	620	635	1.9	2.4	320	630	120
		True Green	20	520	540	3.2	3.8	900	1600	120
		Blue	20	460	480	3.2	3.8	200	260	120



Product	Type	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle
				Min.	Max.	Typ.	Max.	Min.	Typ.	2θ1/2
QBLP679-RGB4	Black Face	Red	20	620	635	1.9	2.4	460	570	120
		True Green	20	520	540	3.2	3.8	780	1500	120
		Blue	20	460	480	3.2	3.8	120	260	120
QBLP679-RGB5	White Face	Red	20	620	635	1.9	2.4	270	600	120
		True Green	20	520	540	3.2	3.8	600	1000	120
		Blue	20	460	480	3.2	3.8	120	210	120
				CCT (K)						
				Min.	Max.					
QBLP679-IWK	White Face	White	60*	5250	7500	3.2	3.8	3600	5500	120

\*Total forward current for three dies



## ■ PLCC6, Top View, 5.0 x 5.0 x 2.6 mm

Product	Type	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle
				Min.	Max.	Typ.	Max.	Min.	Typ.	2θ1/2
QBLP679-RGB3	Black Face	Red	20	620	635	1.9	2.4	340	530	120
		True Green	20	520	540	3.2	3.8	900	1300	120
		Blue	20	460	480	3.2	3.8	210	280	120



## ■ U LED, Top View, 3.0 x 2.0 x 1.3 mm

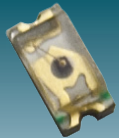
Product	Type	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle
				Min.	Max.	Typ.	Max.	Min.	Typ.	2θ1/2
QBLP676-IB	White Face	Blue	20	460	480	3.2	3.8	160	300	120
QBLP676-IG	White Face	True Green	20	520	540	3.2	3.8	460	900	120
QBLP676-R	White Face	Red	20	620	635	1.9	2.4	160	210	120
QBLP676-AG	White Face	Yellow Green	20	564	576	1.9	2.4	70	110	120
QBLP676-Y	White Face	Yellow	20	582	595	1.9	2.4	90	170	120
				CCT (K)						
				Min.	Max.					
QBLP676-IW	White Face	White	20	5250	7500	3.2	3.8	1900	2250	120

# SMD – Chip Led Series



## ■ SMD 0603, Top View, 1.6mm x 0.8mm x 0.6mm

Part Number	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle 2θ <sub>1/2</sub>
			Min.	Max.	Typ.	Max.	Min.	Typ.	
QBLP601-IB	Blue	20	460	480	3.2	3.8	50	80	120
QBLP601-IG	True Green	20	515	530	3.2	3.8	250	400	120
QBLP601-R	Red	20	620	635	2.1	2.4	80	160	120
QBLP601-AG	Yellow Green	20	565	576	2.1	2.4	25	40	120
QBLP601-Y	Yellow	20	585	595	2.1	2.4	80	125	120
			CCT (K)						
			Min.	Max.					
QBLP601-IW	White	20	5000	9000	3.2	3.8	200	320	120



## ■ SMD 0603, Top View, 1.6mm x 0.8mm x 0.4mm

Part Number	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle 2θ <sub>1/2</sub>
			Min.	Max.	Typ.	Max.	Min.	Typ.	
QBLP602-IB	Blue	20	460	480	3.2	3.8	40	80	120
QBLP602-IG	True Green	20	515	530	3.2	3.8	160	250	120
QBLP602-R	Red	20	620	635	2.1	2.4	50	80	120
QBLP602-AG	Yellow Green	20	565	576	2.1	2.4	20	32	120
QBLP602-Y	Yellow	20	585	595	2.1	2.4	50	125	120
			CCT (K)						
			Min.	Max.					
QBLP602-IW	White	20	5000	9000	3.2	3.8	320	400	120



## ■ SMD 0805, Top View, 2.0mm x 1.25mm x 1.1mm

Part Number	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle 2θ <sub>1/2</sub>
			Min.	Max.	Typ.	Max.	Min.	Typ.	
QBLP630-IB	Blue	20	460	480	3.2	3.8	25	45	120
QBLP630-IG	True Green	20	515	530	3.2	3.8	250	400	120
QBLP630-R	Red	20	620	635	2.1	2.4	63	80	120
QBLP630-O	Orange	20	600	612	2.1	2.4	125	200	120
QBLP630-AG	Yellow Green	20	565	576	2.1	2.4	50	80	120
QBLP630-Y	Yellow	20	585	595	2.1	2.4	80	125	120
			CCT (K)						
			Min.	Max.					
QBLP630-IW	White	20	5000	9000	3.2	2.8	160	250	120



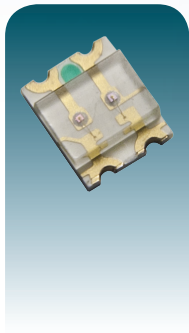
## ■ SMD 1206, Top View, 3.2mm x 1.6mm x 1.1mm

Part Number	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle 2θ <sub>1/2</sub>
			Min.	Max.	Typ.	Max.	Min.	Typ.	
QBLP650-IB	Blue	20	460	480	3.2	3.8	25	45	140
QBLP650-IG	True Green	20	515	530	3.2	3.8	250	400	140
QBLP650-R	Red	20	620	635	2.1	2.4	80	110	140
QBLP650-O	Orange	20	600	612	2.1	2.4	125	180	140
QBLP650-AG	Yellow Green	20	565	576	2.1	2.4	20	45	140
QBLP650-Y	Yellow	20	585	595	2.1	2.4	63	125	140
			CCT (K)						
			Min.	Max.					
QBLP650-IW	White	20	5000	9000	3.2	3.8	160	250	140



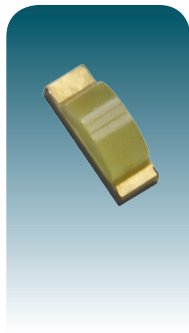
### ■ SMD 0606, Top View, 1.6mm x 1.5mm x 0.8mm

Part Number	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle 2θ1/2
			Min.	Max.	Typ.	Max.	Min.	Typ.	
QBLP600-YYG	Yellow	20	585	595	2.0	2.6	7	10	140
	Yellow Green	20	565	576	2.0	2.6	9	12	
QBLP600-RIB	Red	20	620	635	2.0	2.4	40	50	140
	Blue	20	460	480	3.2	3.8	25	32	
QBLP600-RAG	Red	20	620	630	2.0	2.4	63	80	140
	Yellow Green	20	565	576	2.0	2.4	20	32	
QBLP600-RIG	Red	20	620	635	2.0	2.4	40	50	140
	True Green	20	520	540	3.2	3.8	100	200	
QBLP600-RGB	Red	20	620	635	2.0	2.4	63	125	140
	True Green	20	520	540	3.2	3.8	160	320	
	Blue	20	465	475	3.2	3.8	40	75	



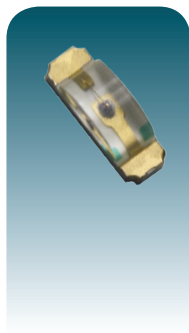
### ■ SMD 1210, Top View, 3.2mm x 2.7mm x 1.1mm

Part Number	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle 2θ1/2
			Min.	Max.	Typ.	Max.	Min.	Typ.	
QBLP650-RAG	Red	20	620	635	2.0	2.4	63	85	140
	Yellow Green	20	564	576	2.0	2.4	40	63	
QBLP650-RGB	Red	20	620	635	2.0	2.4	80	125	140
	Green	20	520	535	3.2	3.8	160	250	
	Blue	20	465	475	3.2	3.8	60	100	



### ■ SMD 1204, Side View, 3.0mm x 1.4mm x 1.0mm

Part Number	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle 2θ1/2
			Min.	Max.	Typ.	Max.	Min.	Typ.	
QBLP610-IB	Blue	20	465	475	3.1	3.8	63	100	140
QBLP610-IG	True Green	20	515	530	3.1	3.8	320	400	140
QBLP610-R	Red	20	620	635	2.1	2.4	50	80	140
QBLP610-AG	Yellow Green	20	565	576	2.1	2.4	25	50	140
QBLP610-Y	Yellow	20	585	595	2.1	2.4	80	160	140
			CCT (K)						
			Min.	Max.					
QBLP610-IW	White	20	5450	9000	3.1	3.8	125	200	140



### ■ SMD 1206, Side View, 3.2mm x 1.5mm x 1.0mm

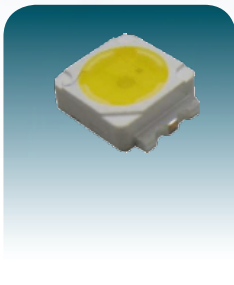
Part Number	Color	I <sub>F</sub> (mA)	λ <sub>D</sub> (nm)		V <sub>F</sub> (V)		I <sub>v</sub> (mcd)		Viewing Angle 2θ1/2
			Min.	Max.	Typ.	Max.	Min.	Typ.	
QBLP615-IB	Blue	20	465	475	3.1	3.8	50	100	150
QBLP615-IG	True Green	20	515	530	3.1	3.8	140	320	150
QBLP615-R	Red	20	620	635	2.1	2.4	63	125	150
QBLP615-AG	Yellow Green	20	565	576	2.1	2.4	25	63	150
QBLP615-Y	Yellow	20	585	595	2.1	2.4	80	120	150
			CCT (K)						
			Min.	Max.					
QBLP615-IW	White	20	5450	9000	3.1	3.8	125	250	150

# High Power LEDs



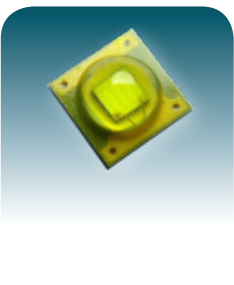
## ■ QBHP686 Series

Part Number	L x W x H (mm)	Color	Material	Power (W)	I <sub>F</sub> (mA)	V <sub>F</sub> (V)	Color Temperature	Viewing Angle	Φ <sub>v</sub> (lm)
						Typ.			
QBHP686-IWH	3.5 x 2.8 x 0.8	Warm white	InGaN	0.5	150	3.5	2760-3160	120	36
QBHP686-IWH	3.5 x 2.8 x 0.8	Pure White	InGaN	0.5	150	3.5	3640-4600	120	38
QBHP686-IWH	3.5 x 2.8 x 0.8	Cool White	InGaN	0.5	150	3.5	5450-7400	120	41



## ■ QBHP685 Series

Part Number	L x W x H (mm)	Color	Material	Power (W)	I <sub>F</sub> (mA)	V <sub>F</sub> (V)	Color Temperature	Viewing Angle	Φ <sub>v</sub> (lm)
						Typ.			
QBHP685-IWH	6.4 x 5.0 x 1.35	Pure White	InGaN	0.5	150	3.5	3640-4600	120	40
QBHP685-IWU	6.4 x 5.0 x 1.35	Warm white	InGaN	1	350	3.5	2760-3160	120	65
QBHP685-IWU	6.4 x 5.0 x 1.35	Pure White	InGaN	1	350	3.5	3640-4600	120	80
QBHP685-IWU	6.4 x 5.0 x 1.35	Cool White	InGaN	1	350	3.5	5450-7400	120	90



## ■ QBHP684 Series

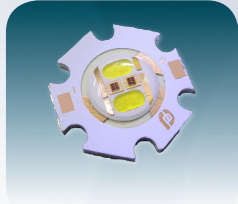
Part Number	L x W x H (mm)	Color	Material	Power (W)	I <sub>F</sub> (mA)	V <sub>F</sub> (V)	Wavelength (nm)		Color Temperature	Viewing Angle	Φ <sub>v</sub> (lm)
						Typ.	Min.	Max.			
QBHP684-RU	3.37 x 3.37 x 1.83	Red	AllnGaP	1	350	2.2	620	635	-	120	55
QBHP684-YU	3.37 x 3.37 x 1.83	Yellow	AllnGaP	1	350	2.2	582	595	-	120	55
QBHP684-IWU	3.37 x 3.37 x 1.83	White	InGaN	1	350	3.5	-	-	2760-7400	120	115
QBHP684-IBU	3.37 x 3.37 x 1.83	Blue	InGaN	1	350	3.5	460	480	-	120	25



## ■ QBHP682 Series

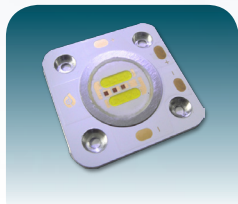
Part Number	L x W x H (mm)	Color	Material	Power (W)	I <sub>F</sub> (mA)	V <sub>F</sub> (V)	Wavelength (nm)		Color Temperature	Viewing Angle	Φ <sub>v</sub> (lm)
						Typ.	Min.	Max.			
QBHP682-IBU	14.5 x 8 x 5	Blue	InGaN	1	350	3.5	460	480	-	120	18
QBHP682-IGU	14.5 x 8 x 5	Green	InGaN	1	350	3.5	520	540	-	120	70
QBHP682-IWU	14.5 x 8 x 5	White	InGaN	1	350	3.5	-	-	2760-7400	120	100
QBHP682-RU	14.5 x 8 x 5	Red	AllnGaP	1	350	2.2	620	635	-	120	40
QBHP682-YU	14.5 x 8 x 5	Yellow	AllnGaP	1	350	2.2	582	595	-	120	37
QBHP682-RGBU	14.5 x 8 x 5	Blue	InGaN	3	350	3.5	460	480	-	120	12
		Green	InGaN		350	3.5	520	540	-	120	60
		Red	AllnGaP		350	2.2	620	635	-	120	27

# COB Modules



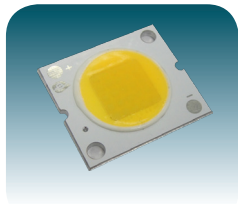
## ■ QBLB1915-IWU

Part Number	L x W x H (mm)	Color	Power (W)	I <sub>F</sub> (mA)	V <sub>F</sub> (V)	Color Temperature (K)	Viewing Angle	Φ <sub>v</sub> (lm)
					Typ.			
QBLB1915-IWU	19.9 x 19 x 1.54	White	6	350	16.5	4000	201/2	370



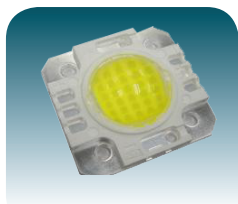
## ■ QBLB3535-IWU

Part Number	L x W x H (mm)	Color	Power (W)	I <sub>F</sub> (mA)	V <sub>F</sub> (V)	Color Temperature (K)	Viewing Angle	Φ <sub>v</sub> (lm)
					Typ.			
QBLB3535-IWU	35 x 35 x 2.1	White	11	350	31.5	4000	120	700



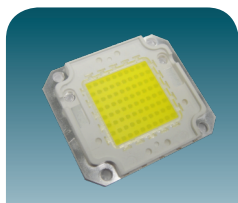
## ■ QBLB2522-IWF

Part Number	L x W x H (mm)	Color	Power (W)	I <sub>F</sub> (mA)	V <sub>F</sub> (V)	Color Temperature (K)	Viewing Angle	Φ <sub>v</sub> (lm)
					Typ.			
QBLB2522-IWF	25.6 x 22.6 x 2.5	White	23	1500	15.5	4000	120	1200



## ■ QBLB3634-IWF

Part Number	L x W x H (mm)	Color	Power (W)	I <sub>F</sub> (mA)	V <sub>F</sub> (V)	Color Temperature (K)	Viewing Angle	Φ <sub>v</sub> (lm)
					Typ.			
QBLB3634-IWF	36 x 34 x 9.3	White	30	1500	20	6000	120	2400



## ■ QBLB4640 Series

Part Number	L x W x H (mm)	Color	Power (W)	I <sub>F</sub> (mA)	V <sub>F</sub> (V)	Wavelength (nm)		Color Temperature CCT (K)	Viewing Angle 201/2	Φ <sub>v</sub> (lm)
					Typ.	Min.	Max.			
QBLB4640-IWF	46 x 40 x 4.3	White	50	1500	33	-	-	6500	120	4000
QBLB4640-IWG	46 x 40 x 4.3	White	80	2400	33	-	-	6500	120	6400
QBLB4640-IWJ	46 x 40 x 4.3	White	100	3000	33	-	-	6500	120	7500
QBLB4640-IGJ	46 x 40 x 4.3	Green	100	3000	33	520	540	-	120	5500
QBLB4640-IBJ	46 x 40 x 4.3	Blue	100	3000	33	620	635	-	120	2300

# Lamp and Superflux Series



## ■ 3mm Round Lamp, 3.0mm x 5.3mm

Part Number	Color	$\lambda_D$ (nm)		$I_F$ (mA)	$V_F$ (V) Typ.	$I_v$ (mcd) Typ.	Viewing Angle 2 $\theta$ 1/2	Lens Type
		Min.	Max.					
QBL7IB15C	Blue	460	480	20	3.2	2500	15	Water Clear
QBL7IG15C	Green	520	540	20	3.2	11500	15	Water Clear
QBL7R15C	Red	620	635	20	2.0	5200	15	Water Clear
QBL7O15C	Orange	600	612	20	2.0	3800	15	Water Clear
QBL7Y15C	Yellow	582	595	20	2.0	4800	15	Water Clear
QBL7IB30C	Blue	460	480	20	3.2	2200	30	Water Clear
QBL7IG30C	Green	520	540	20	3.2	20000	30	Water Clear
QBL7IB40D	Blue	460	480	20	3.2	900	40	Color Diffused
QBL7IG40D	Green	520	540	20	3.2	5000	40	Color Diffused
QBL7R40D	Red	620	635	20	2.0	700	40	Color Diffused
QBL7AG40D	Yellow Green	564	576	20	2.0	380	40	Color Diffused
QBL7O40D	Orange	600	612	20	2.0	1000	40	Color Diffused
QBL7Y40D	Yellow	582	595	20	2.0	620	40	Color Diffused
		CCT (K)						
		Min.	Max.					
QBL7IW30C	White	7400	12000	20	3.2	6200	30	Water Clear
QBL7IW40D	White	6000	9000	20	3.2	5000	40	Color Diffused



## ■ 5mm Round Lamp, 5.0mm x 8.7mm

Part Number	Color	$\lambda_D$ (nm)		$I_F$ (mA)	$V_F$ (V) Typ.	$I_v$ (mcd) Typ.	Viewing Angle 2 $\theta$ 1/2	Lens Type
		Min.	Max.					
QBL8IB15C	Blue	460	480	20	3.2	5200	15	Water Clear
QBL8IG15C	Green	520	540	20	3.2	20000	15	Water Clear
QBL8R15C	Red	620	635	20	2.0	7200	15	Water Clear
QBL8AG15C	Yellow Green	564	576	20	2.0	2100	15	Water Clear
QBL8O15C	Orange	600	612	20	2.0	10000	15	Water Clear
QBL8Y15C	Yellow	582	595	20	2.0	9000	15	Water Clear
QBL8IB30C	Blue	460	480	20	3.2	3700	30	Water Clear
QBL8IG30C	Green	520	540	20	3.2	8600	30	Water Clear
QBL8R30C	Red	620	635	20	2.0	3000	30	Water Clear
QBL8Y30C	Yellow	582	595	20	2.0	4100	30	Water Clear
QBL8IB35D	Blue	460	480	20	3.2	700	35	Color Diffused
QBL8IG35D	Green	520	540	20	3.2	5500	35	Color Diffused
QBL8R35D	Red	620	635	20	2.0	550	35	Color Diffused
QBL8AG35D	Yellow Green	564	576	20	2.0	260	35	Color Diffused
QBL8O35D	Orange	600	612	20	2.0	1000	35	Color Diffused
QBL8Y35D	Yellow	582	595	20	2.0	700	35	Color Diffused
		CCT (K)						
		Min.	Max.					
QBL8IW15C	White	6000	9000	20	3.2	20000	15	Water Clear
QBL8IW30C	White	6000	9000	20	3.2	12000	30	Water Clear
QBL8IW40D	White	7400	9000	20	3.2	4100	40	Color Diffused





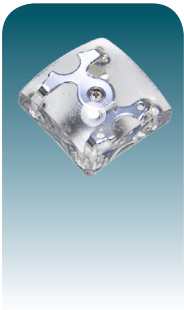
### ■ 4mm Oval Lamp, 4.0mm x 6.2mm

Part Number	Color	$\lambda_D$ (nm)		$I_F$ (mA)	$V_F$ (V) Typ.	$I_v$ (mcd) Typ.	Viewing Angle 2 $\theta$ 1/2
		Min.	Max.				
QBOL4IB60D	Blue	460	480	20	3.2	620	100/60
QBOL4IG60D	Green	520	540	20	3.2	1950	100/60
QBOL4R60D	Red	620	635	20	2.0	1000	100/60



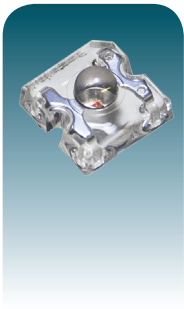
### ■ 5mm Oval Lamp, 5.0mm x 7.0mm

Part Number	Color	$\lambda_D$ (nm)		$I_F$ (mA)	$V_F$ (V) Typ.	$I_v$ (mcd) Typ.	Viewing Angle 2 $\theta$ 1/2
		Min.	Max.				
QBOL5IB50D	Blue	460	480	20	3.2	480	110/50
QBOL5IG50D	Green	520	540	20	3.2	2200	110/50
QBOL5R50D	Red	620	635	20	2.0	900	110/50



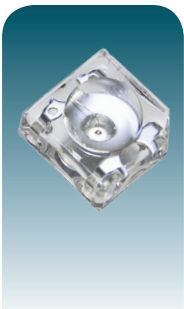
### ■ Flat Top Superflux, 7.6mm x 7.6mm x 2.5mm

Part Number	Color	$\lambda_D$ (nm)		$I_F$ (mA)	$V_F$ (V) Typ.	$I_v$ (mcd) Typ.	Viewing Angle 2 $\theta$ 1/2
		Min.	Max.				
QBPP0130C-R	Red	620	635	20	2.2	3000	130
QBPP0130C-Y	Yellow	582	595	20	2.2	2500	130
QBPP0130C-IBM	Blue	460	480	30	3.2	1500	130
		CCT (K)					
		Min.	Max.				
QBPP0120C-IW	White	7400	16000	20	3.2	4400	120



### ■ 3mm Lens Superflux, 7.6mm x 7.6mm x 4mm

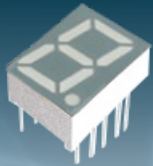
Part Number	Color	$\lambda_D$ (nm)		$I_F$ (mA)	$V_F$ (V) Typ.	$I_v$ (mcd) Typ.	Viewing Angle 2 $\theta$ 1/2
		Min.	Max.				
QBPP390C-RD	Red	620	635	50	2.2	6000	90
QBPP390C-YD	Yellow	582	595	50	2.2	6000	90
QBPP350C-IB	Blue	460	480	20	3.2	1600	50
		CCT (K)					
		Min.	Max.				
QBPP350C-IWM	White	7400	16000	30	3.2	6800	50



### ■ 5mm Lens Superflux, 7.6mm x 7.6mm x 5mm

Part Number	Color	$\lambda_D$ (nm)		$I_F$ (mA)	$V_F$ (V) Typ.	$I_v$ (mcd) Typ.	Viewing Angle 2 $\theta$ 1/2
		Min.	Max.				
QBPP530C-RD	Red	620	635	50	2.2	4200	30
QBPP530C-YD	Yellow	582	595	50	2.2	4500	30
QBPP530C-IBM	Blue	460	480	30	3.2	1600	30
		CCT (K)					
		Min.	Max.				
QBPP530C-IWM	White	6000	9000	30	3.2	7800	30

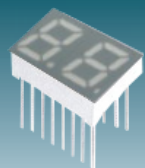
# Display Series



## Single Digit Through Hole Display

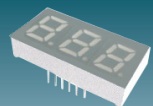
z=	0	1
	common anode	common cathode

Digit Height	Part Number	Dimension (mm) (LxWxH)	Color	$\lambda_D$ (nm)		I <sub>v</sub> (mcd) Typ.	I <sub>F</sub> (mA)	V <sub>F</sub> (V) Typ.
				Min.	Max.			
0.39"	QBS39IBZ	13 x 10 x 7	Blue	460	480	160	20	3.2
	QBS39IGZ		Green	520	540	200	20	3.2
	QBS39RZ		Red	620	635	60	20	2.0
	QBS39AGZ		Yellow Green	564	576	25	20	2.0
	QBS39YZ		Yellow	582	595	35	20	2.0
0.56"	QBS56IBZ	19 x 12.6 x 8	Blue	460	480	160	20	3.2
	QBS56IGZ		Green	520	540	200	20	3.2
	QBS56RZ		Red	620	635	60	20	2.0
	QBS56AGZ		Yellow Green	564	576	25	20	2.0
	QBS56YZ		Yellow	582	595	35	20	2.0



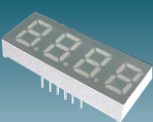
## Dual Digit Through Hole Display

Digit Height	Part Number	Dimension (mm) (LxWxH)	Color	$\lambda_D$ (nm)		I <sub>v</sub> (mcd) Typ.	I <sub>F</sub> (mA)	V <sub>F</sub> (V) Typ.
				Min.	Max.			
0.40"	QBD40IBZ	16 x 20.1 x 7	Blue	460	480	160	20	3.2
	QBD40IGZ		Green	520	540	200	20	3.2
	QBD40RZ		Red	620	635	60	20	2.0
	QBD40AGZ		Yellow Green	564	576	25	20	2.0
	QBD40YZ		Yellow	582	595	35	20	2.0
0.56"	QBD56IBZ	19 x 25 x 8	Blue	460	480	160	20	3.2
	QBD56IGZ		Green	520	540	200	20	3.2
	QBD56RZ		Red	620	635	60	20	2.0
	QBD56AGZ		Yellow Green	564	576	25	20	2.0
	QBD56YZ		Yellow	582	595	35	20	2.0



## Three Digit Through Hole Display

Digit Height	Part Number	Dimension (mm) (LxWxH)	Color	$\lambda_D$ (nm)		I <sub>v</sub> (mcd) Typ.	I <sub>F</sub> (mA)	V <sub>F</sub> (V) Typ.
				Min.	Max.			
0.40"	QBT40IBZ	16 x 30.1 x 7	Blue	460	480	160	20	3.2
	QBT40IGZ		Green	520	540	200	20	3.2
	QBT40RZ		Red	620	635	60	20	2.0
	QBT40AGZ		Yellow Green	564	576	25	20	2.0
	QBT40YZ		Yellow	582	595	35	20	2.0
0.56"	QBT56IBZ	19 x 37.6 x 8	Blue	460	480	160	20	3.2
	QBT56IGZ		Green	520	540	200	20	3.2
	QBT56RZ		Red	620	635	60	20	2.0
	QBT56AGZ		Yellow Green	564	576	25	20	2.0
	QBT56YZ		Yellow	582	595	35	20	2.0



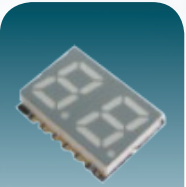
## Four Digit Through Hole Display

Digit Height	Part Number	Dimension (mm) (LxWxH)	Color	$\lambda_D$ (nm)		I <sub>v</sub> (mcd) Typ.	I <sub>F</sub> (mA)	V <sub>F</sub> (V) Typ.
				Min.	Max.			
0.28"	QBQ28IBZ	10 x 32.1 x 5.8	Blue	460	480	160	20	3.2
	QBQ28IGZ		Green	520	540	200	20	3.2
	QBQ28RZ		Red	620	635	60	20	2.0
	QBQ28AGZ		Yellow Green	564	576	25	20	2.0
	QBQ28YZ		Yellow	582	595	35	20	2.0



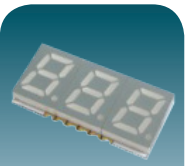
## Single Digit Surface Mount Display

Digit Height	Part Number	Dimension (mm) (LxWxH)	Color	$\lambda_D$ (nm)		I <sub>v</sub> (mcd) Typ.	I <sub>F</sub> (mA)	V <sub>F</sub> (V) Typ.
				Min.	Max.			
0.39"	QBSS39ZIB	15 x 9.8 x 3.8	Blue	460	480	160	20	3.2
	QBSS39ZIG		Green	520	540	200	20	3.2
	QBSS39ZR		Red	620	635	60	20	2.0
	QBSS39ZAG		Yellow Green	564	576	25	20	2.0
	QBSS39ZY		Yellow	582	595	35	20	2.0
0.56"	QBSS56ZIB	19 x 12.5 x 3.85	Blue	460	480	160	20	3.2
	QBSS56ZIG		Green	520	540	200	20	3.2
	QBSS56ZR		Red	620	635	60	20	2.0
	QBSS56ZAG		Yellow Green	564	576	25	20	2.0
	QBSS56ZY		Yellow	582	595	35	20	2.0



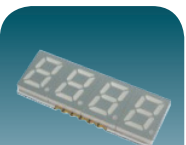
## Two Digit Surface Mount Display

Digit Height	Part Number	Dimension (mm) (LxWxH)	Color	$\lambda_D$ (nm)		I <sub>v</sub> (mcd) Typ.	I <sub>F</sub> (mA)	V <sub>F</sub> (V) Typ.
				Min.	Max.			
0.39"	QBDS39ZIB	15 x 19.6 x 3.8	Blue	460	480	160	20	3.2
	QBDS39ZIG		Green	520	540	200	20	3.2
	QBDS39ZR		Red	620	635	60	20	2.0
	QBDS39ZAG		Yellow Green	564	576	25	20	2.0
	QBDS39ZY		Yellow	582	595	35	20	2.0
0.56"	QBDS56ZIB	19 x 25 x 3.85	Blue	460	480	160	20	3.2
	QBDS56ZIG		Green	520	540	200	20	3.2
	QBDS56ZR		Red	620	635	60	20	2.0
	QBDS56ZAG		Yellow Green	564	576	25	20	2.0
	QBDS56ZY		Yellow	582	595	35	20	2.0



## Three Digit Surface Mount Display

Digit Height	Part Number	Dimension (mm) (LxWxH)	Color	$\lambda_D$ (nm)		I <sub>v</sub> (mcd) Typ.	I <sub>F</sub> (mA)	V <sub>F</sub> (V) Typ.
				Min.	Max.			
0.39"	QBTS39ZIB	15 x 29.4 x 3.8	Blue	460	480	160	20	3.2
	QBTS39ZIG		Green	520	540	200	20	3.2
	QBTS39ZR		Red	620	635	60	20	2.0
	QBTS39ZAG		Yellow Green	564	576	25	20	2.0
	QBTS39ZY		Yellow	582	595	35	20	2.0
0.56"	QBTS56ZIB	19 x 37.5 x 3.85	Blue	460	480	160	20	3.2
	QBTS56ZIG		Green	520	540	200	20	3.2
	QBTS56ZR		Red	620	635	60	20	2.0
	QBTS56ZAG		Yellow Green	564	576	25	20	2.0
	QBTS56ZY		Yellow	582	595	35	20	2.0



## Four Digit Surface Mount Display

Digit Height	Part Number	Dimension (mm) (LxWxH)	Color	$\lambda_D$ (nm)		I <sub>v</sub> (mcd) Typ.	I <sub>F</sub> (mA)	V <sub>F</sub> (V) Typ.
				Min.	Max.			
0.39"	QBQS39ZIB	15 x 39.2 x 3.8	Blue	460	480	160	20	3.2
	QBQS39ZIG		Green	520	540	200	20	3.2
	QBQS39ZR		Red	620	635	60	20	2.0
	QBQS39ZAG		Yellow Green	564	576	25	20	2.0
	QBQS39ZY		Yellow	582	595	35	20	2.0

**NOTE:** Customized displays are available upon special request.

**email:** sales@qt-brightek.com

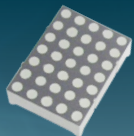
**telephone:** 1-408-514-1522

**fax:** 1-408-514-1523

**QT BRIGHTTEK**

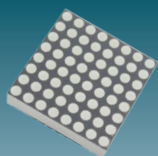
# Dot Matrix

## ■ 5 x 7



Part Number		Dimension (mm) (LxWxH)	Color	λD (nm)		IF (mA)	VF (V) Typ.	IV (mcd) Typ.
Common Cathode	Common Anode			Min.	Max.			
GMC07IB75	GMA07IB75	17.8 x 12.7 x 6.3	Blue	460	480	20	3.2	160
GMC07IG75	GMA07IG75		Green	520	540	20	3.2	200
GMC07R75	GMA07R75		Red	620	635	20	2.0	60
GMC07AG75	GMA07AG75		Yellow Green	564	576	20	2.0	25
GMC07Y75	GMA07Y75		Yellow	582	595	20	2.0	35
GMC12IB75	GMA12IB75	31.8 x 22.15 x 8.5	Blue	460	480	20	3.2	160
GMC12IG75	GMA12IG75		Green	520	540	20	3.2	200
GMC12R75	GMA12R75		Red	620	635	20	2.0	60
GMC12AG75	GMA12AG75		Yellow Green	564	576	20	2.0	25
GMC12Y75	GMA12Y75		Yellow	582	595	20	2.0	35
GMC21IB75	GMA21IB75	53.1 x 37.8 x 8.4	Blue	460	480	20	3.2	160
GMC21IG75	GMA21IG75		Green	520	540	20	3.2	200
GMC21R75	GMA21R75		Red	620	635	20	2.0	60
GMC21AG75	GMA21AG75		Yellow Green	564	576	20	2.0	25
GMC21Y75	GMA21Y75		Yellow	582	595	20	2.0	35

## ■ 8 x 8



Part Number		Dimension (mm) (LxWxH)	Color	λD (nm)		IF (mA)	VF (V) Typ.	IV (mcd) Typ.
Common Cathode	Common Anode			Min.	Max.			
GMC12IB88	GMA12IB88	32.0 x 32.0 x 8.0	Blue	460	480	20	3.2	160
GMC12IG88	GMA12IG88		Green	520	540	20	3.2	200
GMC12R88	GMA12R88		Red	620	635	20	2.0	60
GMC12AG88	GMA12AG88		Yellow Green	564	576	20	2.0	25
GMC12Y88	GMA12Y88		Yellow	582	595	20	2.0	35
GMC15IB88	GMA15IB88	37.9 x 37.9 x 10.3	Blue	460	480	20	3.2	160
GMC15IG88	GMA15IG88		Green	520	540	20	3.2	200
GMC15R88	GMA15R88		Red	620	635	20	2.0	60
GMC15AG88	GMA15AG88		Yellow Green	564	576	20	2.0	25
GMC15Y88	GMA15Y88		Yellow	582	595	20	2.0	35
GMC24IB88	GMA24IB88	60.2 x 60.2 x 9.2	Blue	460	480	20	3.2	160
GMC24IG88	GMA24IG88		Green	520	540	20	3.2	200
GMC24R88	GMA24R88		Red	620	635	20	2.0	60
GMC24AG88	GMA24AG88		Yellow Green	564	576	20	2.0	25
GMC24Y88	GMA24Y88		Yellow	582	595	20	2.0	35

# Infrared and Phototransistor

## ■ Infrared



3mm Lamp						
Part Number	Dimension (mm)	$\lambda_p$ (nm)	$I_F$ (mA) Typ.	$I_E$ (mW/sr) Typ.	$V_F$ (V) Typ.	Viewing Angle 2 $\theta$ 1/2
QBEC5135	3.0 x 5.3	940	50	17	1.3	35
QBEC5140		940	50	15	1.3	40
QBEC5150		940	50	18	1.3	50
QBEC5345		850	50	26.55	1.5	45



5mm Lamp						
Part Number	Dimension (mm)	$\lambda_p$ (nm)	$I_F$ (mA) Typ.	$I_E$ (mW/sr) Typ.	$V_F$ (V) Typ.	Viewing Angle 2 $\theta$ 1/2
QBED8120	5.0 x 8.7	940	50	72	1.3	20
QBED8145		940	50	30	1.3	45
QBED8120A		940	50	50	1.3	20
QBED8130		940	50	15	1.3	30
QBED8220		880	50	12	1.6	20
QBED8220A		880	50	50	1.3	20
QBED8325		850	50	68	1.5	20
QBED8330		850	50	70	1.5	30



8mm Lamp						
Part Number	Dimension (mm)	$\lambda_p$ (nm)	$I_F$ (mA) Typ.	$I_E$ (mW/sr) Typ.	$V_F$ (V) Typ.	Viewing Angle 2 $\theta$ 1/2
QBED9330	8.0 x 11.0	850	50	100	1.5	30

## ■ Phototransistor

A= Water Transparent; B= Black Lens



3mm Lamp						
Part Number	Dimension (mm)	$\lambda_p$ (nm)	Rise/Fall Time ( $\mu$ s)	$V_{CE(SAT)}$ (V)Max.	$I_{C(ON)}$ (mA)Min.	$I_{C(ON)}$ (mA)Typ.
QSC5T120A	3.0 x 5.3	940	15/15	0.4	0.7	2
QSC5T120B		940	15/15	0.4	0.7	2



5mm Lamp						
Part Number	Dimension (mm)	$\lambda_p$ (nm)	Rise/Fall Time ( $\mu$ s)	$V_{CE(SAT)}$ (V)Max.	$I_{C(ON)}$ (mA)Min.	$I_{C(ON)}$ (mA)Typ.
QSD8T120A	5.0 x 8.7	940	15/15	0.4	2.5	3.0
QSD8T120B		940	15/15	0.4	2.5	3.0

**NOTE:** Customized specs are available upon special request.

# Optocouplers



## 4-PIN DIP Optocoupler

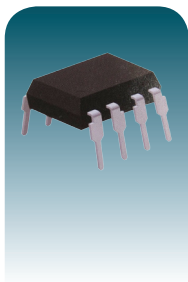
Photodarlington Output, DC Input							
Product	V <sub>F</sub> (V) Typ.	CTR (%) @ I <sub>F</sub> =1mA, V <sub>CE</sub> =2V		BV <sub>CEO</sub> (V) Min.	V <sub>CE(SAT)</sub> (V) Max.	T <sub>R</sub> /T <sub>F</sub> (μs) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.
		Min.	Max.				
Q815	1.2	600	7500	35	1.0	300 / 250	5000
Phototransistor Output, AC Input							
Product	V <sub>F</sub> (V) Typ.	CTR (%) @ I <sub>F</sub> =1mA, V <sub>CE</sub> =5V		BV <sub>CEO</sub> (V) Min.	V <sub>CE(SAT)</sub> (V) Max.	T <sub>R</sub> /T <sub>F</sub> (μs) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.
		Min.	Max.				
Q814	1.2	20	300	80	0.2	18 / 18	5000
Phototransistor Output, DC Input							
Product	V <sub>F</sub> (V) Typ.	CTR (%) @ I <sub>F</sub> =5mA, V <sub>CE</sub> =5V		BV <sub>CEO</sub> (V) Min.	V <sub>CE(SAT)</sub> (V) Max.	T <sub>R</sub> /T <sub>F</sub> (μs) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.
		Min.	Max.				
Q817	1.2	50	600	80	0.2	18 / 18	5000



## 6-PIN DIP Optocoupler

Phototransistor Output, DC Input							
Product	V <sub>F</sub> (V) Typ.	CTR (%) @ I <sub>F</sub> =10mA, V <sub>CE</sub> =10V		BV <sub>CEO</sub> (V) Min.	V <sub>CE(SAT)</sub> (V) Max.	T <sub>R</sub> /T <sub>F</sub> (μs) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.
		Min.	Max.				
4N25	1.2	20	-	80	0.5	10 / 10	5000
4N26	1.2	20	-	80	0.5	10 / 10	5000
4N27	1.2	10	-	80	0.5	10 / 10	5000
4N28	1.2	10	-	80	0.5	10 / 10	5000
4N35	1.2	100	-	80	0.3	12 / 12	5000
4N36	1.2	100	-	80	0.3	12 / 12	5000
4N37	1.2	100	-	80	0.3	12 / 12	5000
4N38	1.2	20	-	80	1.0	12 / 12	5000
H11A1	1.2	50	-	80	0.4	10 / 10	5000
H11A2	1.2	20	-	80	0.4	10 / 10	5000
H11A3	1.2	20	-	80	0.4	10 / 10	5000
H11A4	1.2	10	-	80	0.4	10 / 10	5000
MCT2	1.2	20	-	80	0.4	10 / 10	5000
MCT2E	1.2	20	-	80	0.4	10 / 10	5000
TIL111	1.2	-	-	80	0.4	-	5000
TIL117	1.2	50	-	80	0.4	12 / 12	5000
		CTR (%) @ I <sub>F</sub> =10mA, V <sub>CE</sub> =5V					
CNY17-1	-	40	80	80	0.3	12 / 12	5000
CNY17-2	-	63	125	80	0.3	12 / 12	5000
CNY17-3	-	100	200	80	0.3	12 / 12	5000
CNY17-4	-	160	320	80	0.3	12 / 12	5000
Phototransistor Output, DC Input (No external base connection)							
Product	V <sub>F</sub> (V) Typ.	CTR (%) @ I <sub>F</sub> =10mA, V <sub>CE</sub> =5V		BV <sub>CEO</sub> (V) Min.	V <sub>CE(SAT)</sub> (V) Max.	T <sub>R</sub> /T <sub>F</sub> (μs) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.
		Min.	Max.				
CNY17F-1	-	40	80	80	0.3	12 / 12	5000
CNY17F-2	-	63	125	80	0.3	12 / 12	5000
CNY17F-3	-	100	200	80	0.3	12 / 12	5000
CNY17F-4	-	160	320	80	0.3	12 / 12	5000

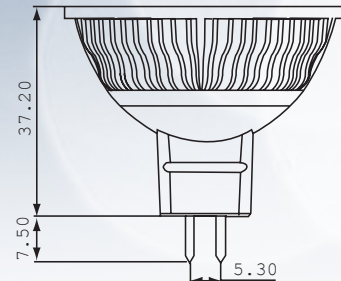
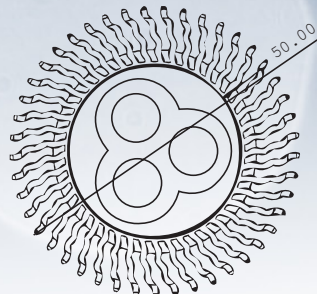
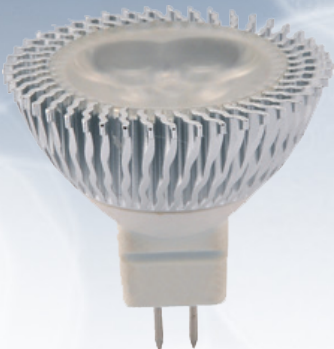
Phototransistor Output, AC Input							
Product	V <sub>F</sub> (V) Typ.	CTR (%) @ I <sub>F</sub> =10mA, V <sub>CE</sub> =10V		BV <sub>CEO</sub> (V) Min.	V <sub>CE(SAT)</sub> (V) Max.	T <sub>R</sub> /T <sub>F</sub> (μs) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.
		Min.	Max.				
H11AA1	1.2	20	-	80	0.4	10 / 10	5000
H11AA2	1.2	10	-	80	0.4	10 / 10	5000
H11AA3	1.2	50	-	80	0.4	10 / 10	5000
H11AA4	1.2	100	-	80	0.4	10 / 10	5000
Photodarlington Output, DC Input							
Product	V <sub>F</sub> (V) Typ.	CTR (%) @ I <sub>F</sub> =10mA, V <sub>CE</sub> =10V		BV <sub>CEO</sub> (V) Min.	V <sub>CE(SAT)</sub> (V) Max.	T <sub>ON</sub> /T <sub>OFF</sub> (μs) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.
		Min.	Max.				
4N29	1.2	100	-	55	1.0	5.0 / 40.0	5000
4N30	1.2	100	-	55	1.0	5.0 / 40.0	5000
4N31	1.2	50	-	55	1.2	5.0 / 40.0	5000
4N32	1.2	500	-	55	1.0	5.0 / 100.0	5000
4N33	1.2	500	-	55	1.0	5.0 / 100.0	5000
CTR (%) @ I <sub>F</sub> =10mA, V <sub>CE</sub> =1V							
TIL113	1.2	300	-	55	1.2	5.0 / 100.0	5000
CTR (%) @ I <sub>F</sub> =1mA, V <sub>CE</sub> =5V							
H11B1	1.2	500	-	55	1.0	- / -	5000
H11B2	1.2	200	-	55	1.0	- / -	5000
H11B3	1.2	100	-	55	1.0	- / -	5000
Random Phase Triac Output, DC Input							
Product	V <sub>TM</sub> (V) Max.	V <sub>INH</sub> (V) Max.	V <sub>DRM</sub> (V) Max.	V <sub>F</sub> (V) Typ.	I <sub>FT</sub> (mA) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.	
Q3010	2.5	-	250	1.18	15	5000	
Q3011	2.5	-	250	1.18	10	5000	
Q3012	2.5	-	250	1.18	5	5000	
Q3021	2.5	-	400	1.18	15	5000	
Q3022	2.5	-	400	1.18	10	5000	
Q3023	2.5	-	400	1.18	5	5000	
Q3051	2.5	-	600	1.18	15	5000	
Q3052	2.5	-	600	1.18	10	5000	
Q3053	2.5	-	600	1.18	5	5000	
Zero Crossing Triac Output, DC Input							
Product	V <sub>TM</sub> (V) Max.	V <sub>INH</sub> (V) Max.	V <sub>DRM</sub> (V) Max.	V <sub>F</sub> (V) Typ.	I <sub>FT</sub> (mA) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.	
Q3031	3.0	20	250	1.5	15	5000	
Q3032	3.0	20	250	1.5	10	5000	
Q3033	3.0	20	250	1.5	5	5000	
Q3041	3.0	20	400	1.5	15	5000	
Q3042	3.0	20	400	1.5	10	5000	
Q3043	3.0	20	400	1.5	5	5000	
Q3061	3.0	20	600	1.5	15	5000	
Q3062	3.0	20	600	1.5	10	5000	
Q3063	3.0	20	600	1.5	5	5000	
Q3081	3.0	20	800	1.5	15	5000	
Q3082	3.0	20	800	1.5	10	5000	
Q3083	3.0	20	800	1.5	5	5000	
Schmitt Trigger Output, DC Input							
Product	I <sub>F(ON)</sub> (mA) Max.	I <sub>F(OFF)</sub> (mA) Min.	V <sub>CC</sub> (V) Max.	V <sub>OL</sub> (V) Max.	I <sub>CC(ON)</sub> (mA) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.	
H11L1	1.6	0.3	16	0.4	5	5300	
H11L2	10	0.3	16	0.4	5	5300	
H11L3	5	0.3	16	0.4	5	5300	



## 8-PIN DIP Optocoupler

Dual Channel Photodarlington Output, DC Input							
Product	V <sub>F</sub> (V) Typ.	CTR (%) @ I <sub>F</sub> =10mA, V <sub>CE</sub> =10V		BV <sub>CEO</sub> (V) Min.	V <sub>CE(SAT)</sub> Max.	T <sub>R</sub> /T <sub>F</sub> (μs) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.
		Min.	Max.				
Q825	1.2	600	7500	40	1.0	300 / 250	5000
Dual Channel Phototransistor Output, DC Input							
Product	V <sub>F</sub> (V) Typ.	CTR (%) @ I <sub>F</sub> =10mA, V <sub>CE</sub> =10V		BV <sub>CEO</sub> (V) Min.	V <sub>CE(SAT)</sub> Max.	T <sub>R</sub> /T <sub>F</sub> (μs) Max.	V <sub>ISO</sub> (V <sub>RMS</sub> ) Min.
		Min.	Max.				
Q827	1.2	50	600	80	0.2	18 / 18	5000

# Led Spot Light Series



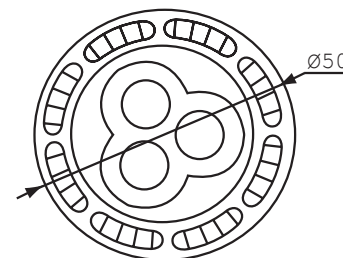
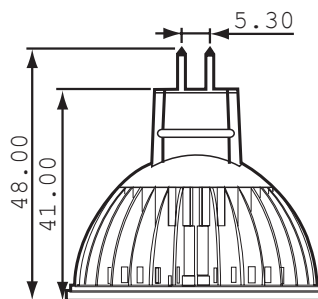
## ■ Main Features

- Input Voltage: 12 VAC/VDC
- Operating Temperature: -20° to 40°C
- Long Lifetime: 40,000 hours (L70)
- Beam Angle Options: 15° and 45°

## Technical Parameters

CE RoHS

Part Number	Color Temp (K)	Holder	Power (W)	Working Voltage (V)	Beam Angle (°)	LM	CRI	Life (hour)
SPTMR16003CF03	6000	GU5.3	3.5	AC/DC12	15/45	210	75	40000
SPTMR16003NF03	4200	GU5.3	3.5	AC/DC12	15/45	200	75	40000
SPTMR16003WF03	2700	GU5.3	3.5	AC/DC12	15/45	150	80	40000



## ■ Main Features

- Input Voltage: 12VAC/VDC
- Operating Temperature: -20° to 40°C
- Long Lifetime: 40,000 hours (L70)
- Beam Angle Options: 45°

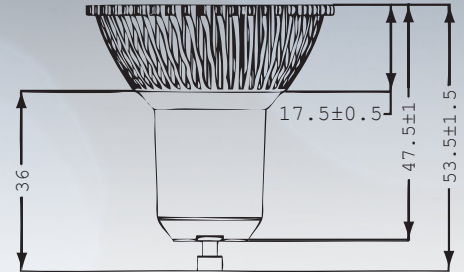
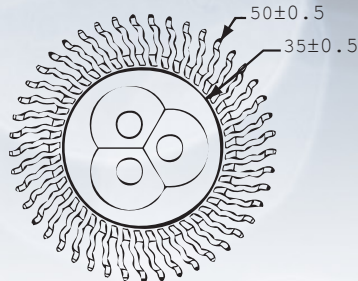
## Technical Parameters

CE RoHS

Part Number	Color Temp (K)	Holder	Power (W)	Working Voltage (V)	Beam Angle (°)	LM	CRI	Life (hour)
SPTMR16005CE05	6000	GU5.3	5.5	AC/DC12	45	320	75	40000
SPTMR16005NE05	4200	GU5.3	5.5	AC/DC12	45	310	75	40000
SPTMR16005WE05	2700	GU5.3	5.5	AC/DC12	45	250	80	40000



# Led Spot Light Series



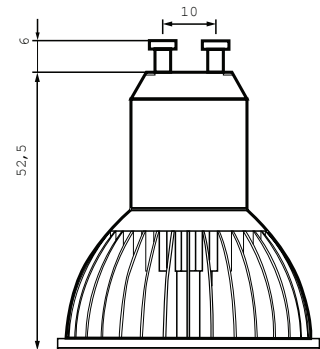
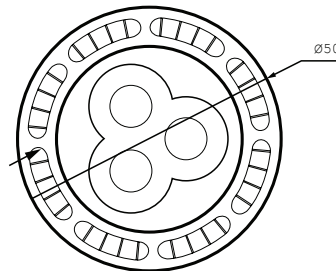
## ■ Main Features

- Universal Input Voltage: 90VAC - 260VAC
- Operating Temperature: -20° to 40°C
- Long Lifetime: 40,000 hours (L70)
- Beam Angle Options: 15° and 45°

## Technical Parameters

CE RoHS

Part Number	Color Temp (K)	Holder	Power (W)	Working Voltage (V)	Beam Angle (°)	LM	CRI	Life (hour)
SPTGU10003CF03	6000	GU10	3.5	AC90-260	15/45	210	75	40000
SPTGU10003NF03	4200	GU10	3.5	AC90-260	15/45	200	75	40000
SPTGU10003WF03	2700	GU10	3.5	AC90-260	15/45	150	80	40000



## ■ Main Features

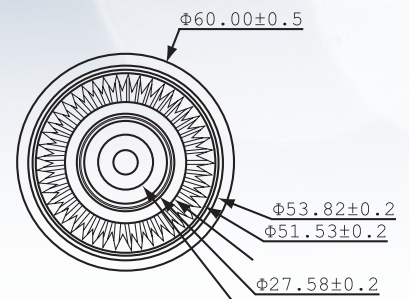
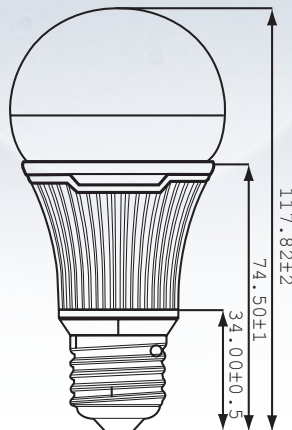
- Universal Input Voltage: 90VAC - 260VAC
- Operating Temperature: -20° to 40°C
- Long Lifetime: 40,000 hours (L70)
- Beam Angle Options: 45°

## Technical Parameters

CE RoHS

Part Number	Color Temp (K)	Holder	Power (W)	Working Voltage (V)	Beam Angle (°)	LM	CRI	Life (hour)
SPTGU10005CE05	6000	GU10	5.5	AC90-260	45	320	75	40000
SPTGU10005NE05	4200	GU10	5.5	AC90-260	45	320	75	40000
SPTGU10005WE05	2700	GU10	5.5	AC90-260	45	250	80	40000

# Led BUB Series



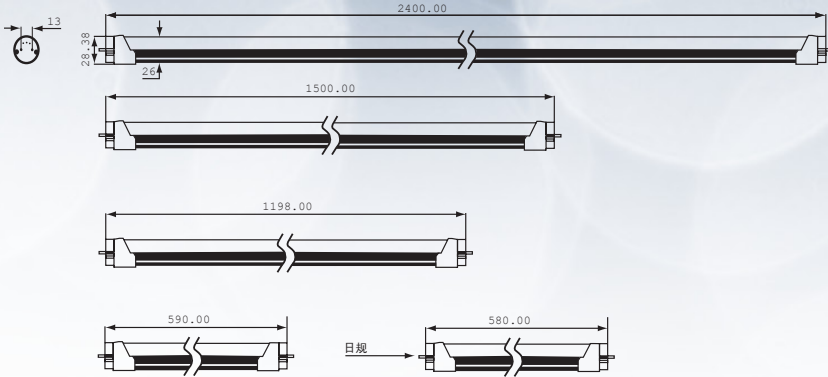
## ■ Main Features

- Universal Input Voltage: 90VAC - 260VAC
- Dimming options available
- Emitting angle 270°
- Long Lifetime: 40,000 hours (L70)
- 25-60W Incandescent lamp replacement

## Technical Parameters

Part Number	Color Temp (K)	Holder	Power (W)	Working Voltage (V)	Beam Angle (°)	LM	CRI	Life (hour)	Dimming (YES/NO)
BUBOE27155CG01	6000	E27/26	5.5	AC90-260	270	360	75	40000	NO
BUBOE27155NF01	4200	E27/26	5.5	AC90-260	270	355	75	40000	NO
BUBOE27155WF01	3000	E27/26	5.5	AC90-260	270	310	80	40000	NO
BUBOE27167CG01	6000	E27/26	6.7	AC90-260	270	455	75	40000	NO
BUBOE27167NF01	4200	E27/26	6.7	AC90-260	270	445	75	40000	NO
BUBOE27167WF01	3000	E27/26	6.7	AC90-260	270	395	80	40000	NO
BUBOE27165CG03	6000	E27/26	6.5	AC90-260	270	330	75	40000	YES
BUBOE27165NF03	4200	E27/26	6.5	AC90-260	270	300	75	40000	YES
BUBOE27165WF03	3000	E27/26	6.5	AC90-260	270	250	80	40000	YES
BUBOE27008CG03	6000	E27/26	8.0	AC90-260	270	420	75	40000	YES
BUBOE27008NF03	4200	E27/26	8.0	AC90-260	270	375	75	40000	YES
BUBOE27008WF03	3000	E27/26	8.0	AC90-260	270	320	80	40000	YES

# Led T8 Tube Series



## ■ Main Features

- Universal Input Voltage: 90VAC - 260VAC
- Replacement for 18-40W fluorescent
- Long Lifetime: 50,000 hours (L70)
- Available in 3 color temperature (2700K, 4200K and 6000K)

## Technical Parameters



Part Number	Color Temp (K)	Holder	Power (W)	Working Voltage (V)	Beam Angle (°)	LM	CRI	Life (hour)
TUET806009CH00	6000	SMT3527	9	90~265	180	700	75	50000
TUET806009NH00	4200	SMT3527	9	90~265	180	650	75	50000
TUET806009WH00	2700	SMT3527	9	90~265	180	550	80	50000
TUET812018CH00	6000	SMT3527	18	90~265	180	1400	75	50000
TUET812018NH00	4200	SMT3527	18	90~265	180	1300	75	50000
TUET812018WH00	2700	SMT3527	18	90~265	180	1100	80	50000
TUET815022CH00	6000	SMT3527	22	90~265	180	1750	75	50000
TUET815022NH00	4200	SMT3527	22	90~265	180	1630	75	50000
TUET815022WH00	2700	SMT3527	22	90~265	180	1380	80	50000
TUET824036CH00	6000	SMT3527	36	90~265	180	2800	75	50000
TUET824036NH00	4200	SMT3527	36	90~265	180	2600	75	50000
TUET824036WH00	2700	SMT3527	36	90~265	180	2200	80	50000
TUET812018CH10	6000	SMT3527(2F)	18	90~265	180	1600	75	50000
TUET812018NH10	4200	SMT3527(2F)	18	90~265	180	1500	75	50000
TUET812018WH10	2700	SMT3527(2F)	18	90~265	180	1400	80	50000

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