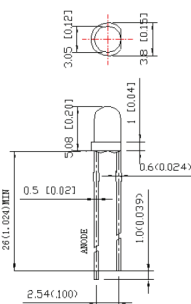


Table of Contents - Lamp

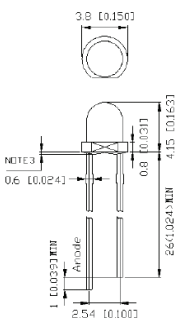
<i>Product</i>	<i>Feature</i>		<i>Color</i>	<i>Page</i>
3mm Round Lamp	5.08mm Lens		Mono	TH-1
	4.15mm Lens		Mono	
5mm Round Lamp	8.6mm Lens		Mono	
	Super Bright 8.6mm Lens		Mono	
3mm Round Lamp	2 Leads		Bi-Color	TH-2
	3 Leads (2mm Lead Pitch)		Bi-Color	
	3 Leads (2.54mm Lead Pitch)		Bi-Color	
5mm Round Lamp	2 Leads		Bi-Color	TH-3
	3 Leads		Bi-Color	
	4 Leads		Full Color	
4mm Oval Lamp	2 Leads		Mono	TH-4
5mm Oval Lamp	2 Leads		Mono	
Piranha	3mm Dome (1.9mm H)		Mono	TH-5
	3mm Dome (1.5mm H)		Mono	
	5mm Dome (2.5mm H)		Mono	
	5mm Dome (2.5mm H)		Full Color	TH-6
	Flat Lens		Mono	
	Flat Lens		Full Color	
Lead Frame Axial	1.8mm Dome		Mono	TH-7

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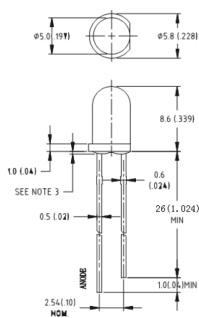
Product	Feature		Color	Page
Right Angle	Type A - Single		Mono	TH-8
	Type B - Single		Mono	
	Type C - Dual		Mono	
	Type D - Dual		Bi-Color	
	Type C - Triple		Mono	
	Type C - Quad		Mono	
	Type E - Single		Bi-Color	TH-9
	Type F - Single		Mono	
	Type G -Dual		Mono	

3mm Round Lamp
5.08mm Lens


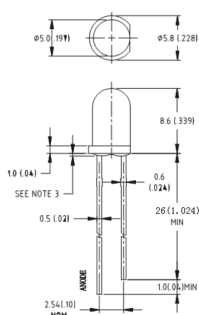
Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	V_f (V)	Emission Color	Lens Color
			typ		max		
HV3UR30	624	20	1300	35	2.4	Hyper Red	W.C.
HV3UBG30	505	20	5100	30	3.8	Bluish Green	W.C.
HV3UTG30	525	20	5700	30	3.8	True Green	W.C.
HV3UY30	590	20	1500	35	2.4	Yellow	W.C.
HV3UA30	605	20	1100	35	2.4	Amber	W.C.
HV3UB30	470	20	2300	30	3.8	Blue	W.C.
HV3W30	X=0.30 Y=0.31	20	6000	30	3.8	White	W.C.

3mm Round Lamp
4.15mm Lens


Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	V_f (V)	Emission Color	Lens Color
			typ		max		
HV3UBG40	505	20	1800	40	3.8	Bluish Green	W.C.
HV3UTG40	525	20	1800	40	3.8	True Green	W.C.
HV3UB40	470	20	1300	40	3.8	Blue	W.C.
HV3W40	X=0.30 Y=0.31	20	3800	40	3.8	White	W.C.
HV3UR80	624	20	380	80	2.4	Hyper Red	W.C.
HV3UY80	590	20	400	80	2.4	Yellow	W.C.
HV3UA80	605	20	220	80	2.4	Amber	W.C.

5mm Round Lamp
8.6mm Lens


Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	V_f (V)	Emission Color	Lens Color
			typ		max		
HV5UR15	624	20	6600	15	2.4	Hyper Red	W.C.
HV5UBG15	505	20	8900	15	3.8	Bluish Green	W.C.
HV5UTG15	525	20	14800	15	3.8	True Green	W.C.
HV5UY15	590	20	6600	15	2.4	Yellow	W.C.
HV5UA15	605	20	2600	15	2.4	Amber	W.C.
HV5UB15	470	20	5100	15	3.8	Blue	W.C.
HV5W15	X=0.30 Y=0.31	20	19500	15	3.8	White	W.C.

5mm Round Lamp Super Bright
8.6mm Lens


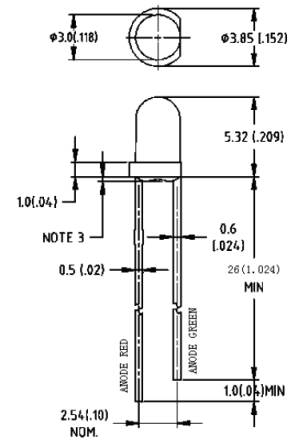
Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	V_f (V)	Emission Color	Lens Color
			typ		max		
HV5UR30	624	20	2400	30	2.4	Hyper Red	W.C.
HV5UBG30	505	20	5700	30	3.8	Bluish Green	W.C.
HV5UTG30	525	20	6900	30	3.8	True Green	W.C.
HV5UY30	590	20	2400	30	2.4	Yellow	W.C.
HV5UA30	605	20	1200	30	2.4	Amber	W.C.
HV5UB30	470	20	5100	30	3.8	Blue	W.C.
HV5W30	X=0.30 Y=0.31	20	7400	30	3.8	White	W.C.

Through Hole LED - Round Lamp

■ 3mm Round Lamp Bi-Color (2-Leads)

5.4mm Lens

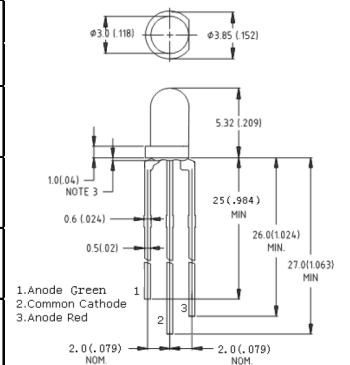
Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	Vf (V)	Emission Color	Lens Color
			typ		max		
HV3RYG75	625	10	3.5	75	2.8	Hyper Red	W.D.
	570	10	3.5	75	2.8	Yellow Green	W.D.
HV3YYG75	590	10	3.5	75	2.8	Yellow	W.D.
	570	10	3.5	75	2.8	Yellow Green	W.D.



■ 3mm Round Lamp Bi-Color (3-Leads with 2mm lead pitch)

5.4mm Lens

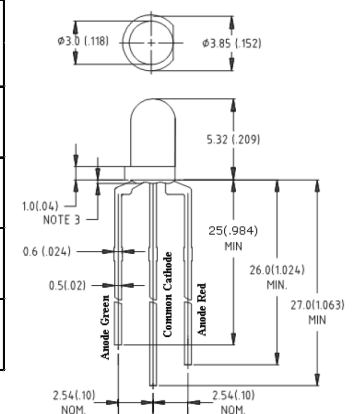
Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	Vf (V)	Emission Color	Lens Color
			typ		max		
HV3RYG50	625	10	3.5	50	2.8	Hyper Red	W.D.
	570	10	3.5	50	2.8	Yellow Green	W.D.
HV3YYG50	590	10	3.5	50	2.8	Yellow	W.D.
	570	10	3.5	50	2.8	Yellow Green	W.D.

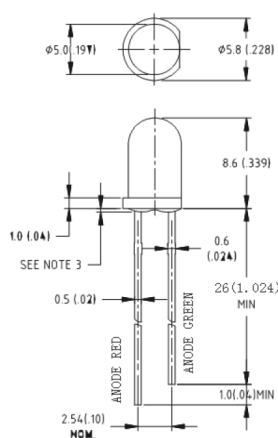


■ 3mm Round Lamp Bi-Color (3-Leads with 2.54mm lead pitch)

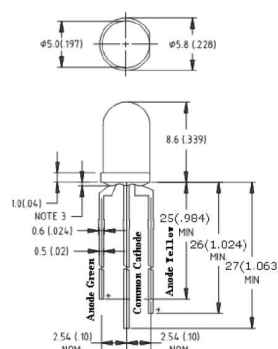
5.4mm Lens

Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	Vf (V)	Emission Color	Lens Color
			typ		max		
HV3RYG70	625	10	3.5	70	2.8	Hyper Red	W.D.
	570	10	3.5	70	2.8	Yellow Green	W.D.
HV3YYG70	590	10	3.5	70	2.8	Yellow	W.D.
	570	10	3.5	70	2.8	Yellow Green	W.D.

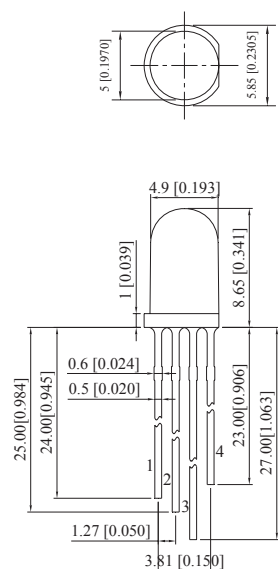


5mm Round Lamp Bi-Color (2-Leads)
8.6mm Lens


Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	Vf (V)	Emission Color	Lens Color
			typ		max		
HV5RYG60	625	10	2.0	60	2.8	Hyper Red	W.D.
	570	10	2.0	60	2.8	Yellow Green	W.D.
HV5YYG60	590	10	2.0	60	2.8	Yellow	W.D.
	570	10	2.0	60	2.8	Yellow Green	W.D.

5mm Round Lamp Bi-Color (3-Leads with 2.54mm lead pitch)
8.6mm Lens


Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	Vf (V)	Emission Color	Lens Color
			typ		max		
HV5RYG70	625	10	2.0	70	2.8	Hyper Red	W.D.
	570	10	2.0	70	2.8	Yellow Green	W.D.
HV5YYG70	590	10	2.0	70	2.8	Yellow	W.D.
	570	10	2.0	70	2.8	Yellow Green	W.D.

5mm Round Lamp Full-Color (4-Leads with 1.27mm lead pitch)
8.6mm Lens


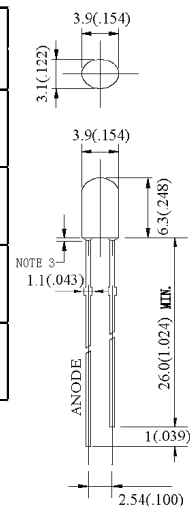
Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	Vf (V)	Emission Color	Lens Color
			typ		max		
HV5RGB25	624	20	2400	25	2.6	Hyper Red	W.C.
	525	20	3000	25	3.8	True Green	W.C.
	470	20	1500	25	3.8	Blue	W.C.
HV5RGB60	624	20	480	60	2.6	Hyper Red	W.D.
	525	20	750	60	3.8	True Green	W.D.
	470	20	380	60	3.8	Blue	W.D.

Through Hole LED - Oval Lamp

4mm Oval Lamp

6.1mm Lens

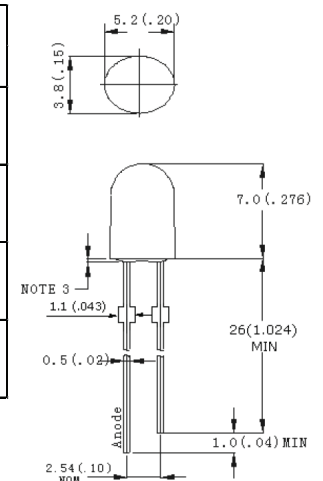
Product	λ_D (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	V_f (V)	Emission Color	Lens Color
			typ		max		
HTOV411040UR	624	20	700	110/40	2.4	Hyper Red	R.D.
HTOV411040UTG	525	20	1800	110/40	3.8	True Green	G.D.
HTOV411040UY	590	20	700	110/40	2.4	Yellow	Y.D.
HTOV411040UB	470	20	520	110/40	3.8	Blue	B.D.

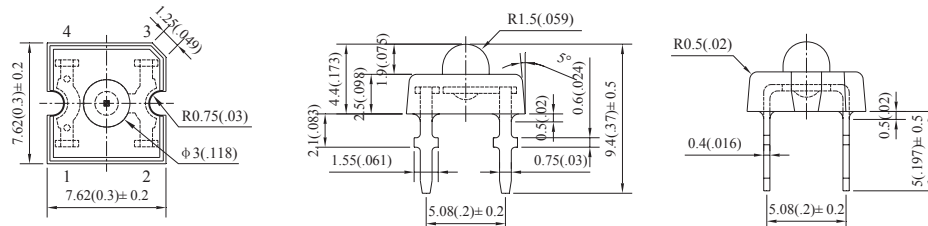


5mm Oval Lamp

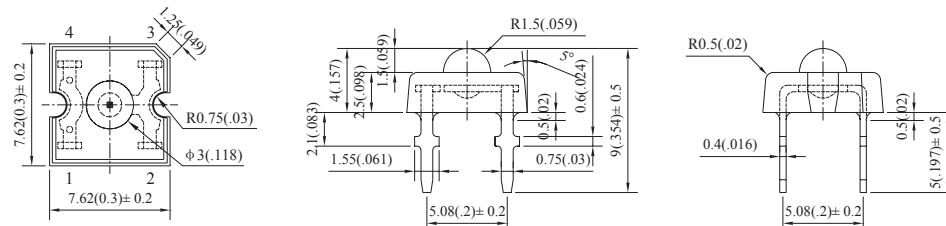
7.0mm Lens

Product	λ_D (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	V_f (V)	Emission Color	Lens Color
			typ		max		
HTOV511040UR	624	20	700	110/40	2.4	Hyper Red	R.D.
HTOV511040UTG	525	20	1800	110/40	3.8	True Green	G.D.
HTOV511040UY	590	20	850	110/40	2.4	Yellow	Y.D.
HTOV511040UB	470	20	520	110/40	3.8	Blue	B.D.

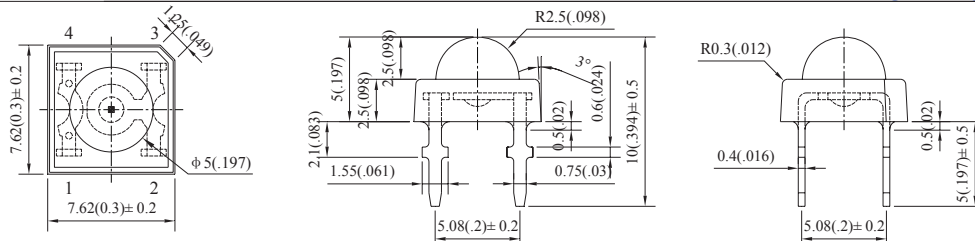


■ Square with 3mm Dome
1.9mm Dome Lens Height


Product	λD (nm)	Current (mA)	I _V (mcd)	VA 2θ _{1/2}	V _f (V)	Emission Color	Lens Color
			typ		max		
HT-PR50UR	624	20	1200	60	2.6	Hyper Red	W.C.
HT-PR50UBG	505	20	2400	50	3.8	Bluish Green	W.C.
HT-PR50UTG	525	20	2400	50	3.8	True Green	W.C.
HT-PR50UY	590	20	1150	60	2.6	Yellow	W.C.
HT-PR50UA	605	20	630	60	2.5	Amber	W.C.
HT-PR50UB	470	20	380	50	3.8	Blue	W.C.
HT-PR50TW	X=0.30 Y=0.31	20	2600	60	3.8	White	W.C.

■ Square with 3mm Dome
1.5mm Dome Lens Height


Product	λD (nm)	Current (mA)	I _V (mcd)	VA 2θ _{1/2}	V _f (V)	Emission Color	Lens Color
			typ		max		
HT-PR70UR	624	20	740	80	2.6	Hyper Red	W.C.
HT-PR70UBG	505	20	1100	70	3.8	Bluish Green	W.C.
HT-PR70UTG	525	20	1400	70	3.8	True Green	W.C.
HT-PR70UY	590	20	740	80	2.6	Yellow	W.C.
HT-PR70UA	605	20	460	80	2.5	Amber	W.C.
HT-PR70UB	470	20	400	70	3.8	Blue	W.C.
HT-PR70TW	X=0.30 Y=0.31	20	1950	80	3.8	White	W.C.

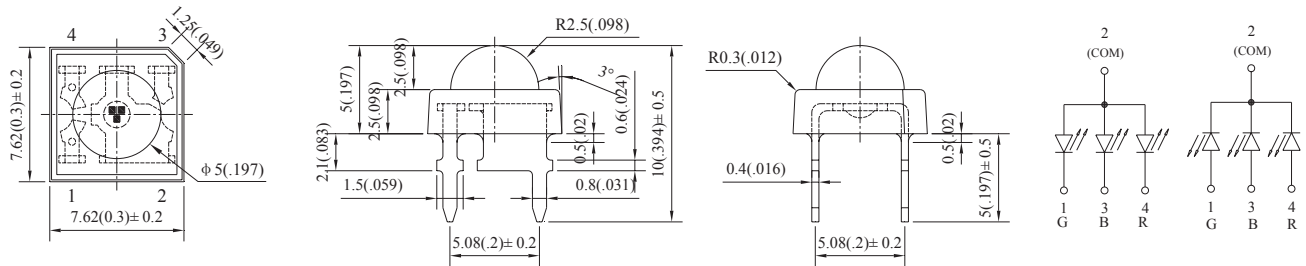
■ Square with 5mm Dome
2.5mm Dome Lens Height


Product	λD (nm)	Current (mA)	I _V (mcd)	VA 2θ _{1/2}	V _f (V)	Emission Color	Lens Color
			typ		max		
HT-PR80UR	624	20	740	80	2.6	Hyper Red	W.C.
HT-PR80UBG	505	20	1100	70	3.8	Bluish Green	W.C.
HT-PR80UTG	525	20	1400	70	3.8	True Green	W.C.
HT-PR80UY	590	20	740	80	2.6	Yellow	W.C.
HT-PR80UA	605	20	460	80	2.5	Amber	W.C.
HT-PR80UB	470	20	400	70	3.8	Blue	W.C.
HT-PR80TW	X=0.30 Y=0.31	20	1950	80	3.8	White	W.C.

Through Hole LED - Piranha

■ Square with 5mm Dome Full-Color

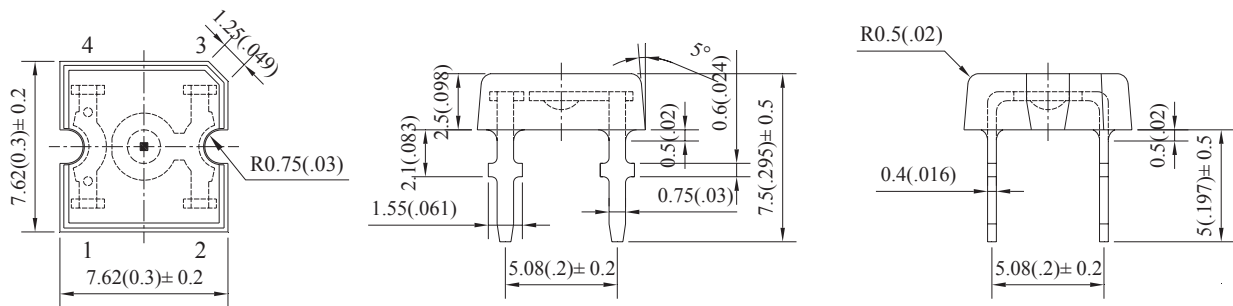
2.5mm Dome Lens Height



Product	λ_D (nm)	Current (mA)	I_V (mcd) typ	VA $2\theta_{1/2}$	V_f (V) max	Emission Color	Lens Color
HT-PR80RGB	624	20	730	80	2.6	Hyper Red	W.C.
	525		1450		4.0	True Green	
	470		185		4.0	Blue	

■ Flat Square

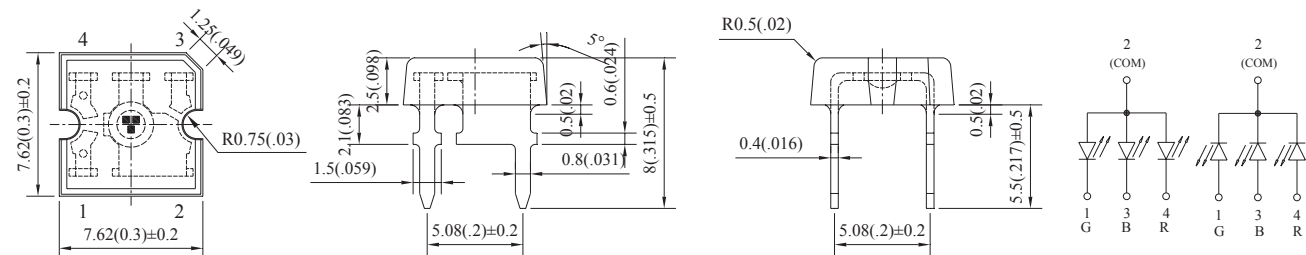
Flat Lens



Product	λ_D (nm)	Current (mA)	I_V (mcd) typ	VA $2\theta_{1/2}$	V_f (V) max	Emission Color	Lens Color
HT-PR120UR	624	20	300	130	2.6	Hyper Red	W.C.
HT-PR120UBG	505	20	680	120	3.8	Bluish Green	W.C.
HT-PR120UTG	525	20	680	120	3.8	True Green	W.C.
HT-PR120UY	590	20	300	130	2.6	Yellow	W.C.
HT-PR120UA	605	20	190	130	2.5	Amber	W.C.
HT-PR120UB	470	20	180	120	3.8	Blue	W.C.
HT-PR120TW	X=0.30 Y=0.31	20	730	130	3.8	White	W.C.

■ Flat Square Full-Color

Flat Lens

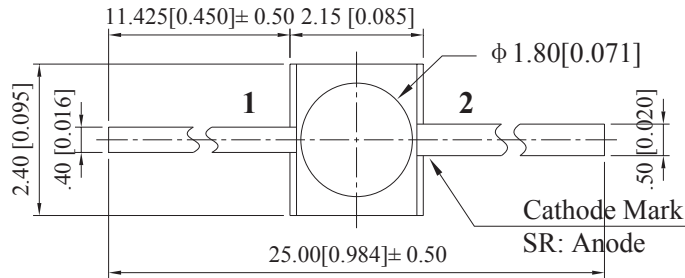


Product	λ_D (nm)	Current (mA)	I_V (mcd) typ	VA $2\theta_{1/2}$	V_f (V) max	Emission Color	Lens Color
HT-PR120RGB	624	20	200	120	2.6	Hyper Red	W.C.
	525		430		4.0	True Green	
	470		100		4.0	Blue	

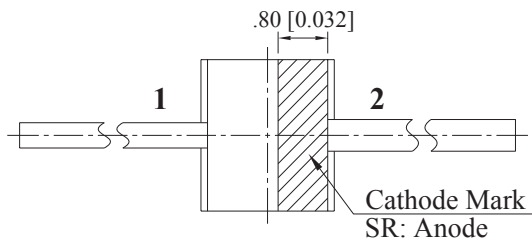
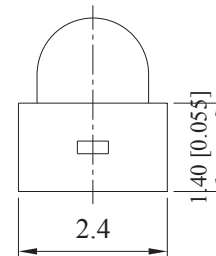
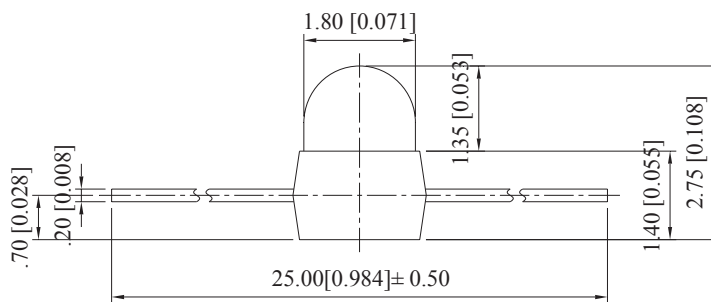


1.8mm Lead Frame Axial

1.35mm Lens Height



Polarity



Unit: mm
Tolerance: ± 0.10 mm

Product	λD (nm)	Current (mA)	I_V (mcd)	VA $2\theta_{1/2}$	V_f (V)	Emission Color	Lens Color
			typ		max		
HTLP912USR	640	20	400	25	2.4	Super Red	W.C.
HTLP912UR	624	20	1500	25	2.4	Hyper Red	W.C.
HTLP912UY	590	20	1500	25	2.4	Yellow	W.C.
HTLP912UYG	573	20	1500	25	2.4	Yellow Green	W.C.
HTLP912UTG	525	20	2300	25	3.8	True Green	W.C.
HTLP912UB	470	20	700	25	3.8	Blue	W.C.
HTLP912TW	X=0.30 Y=0.31	20	2300	30	3.8	White	Y.D.

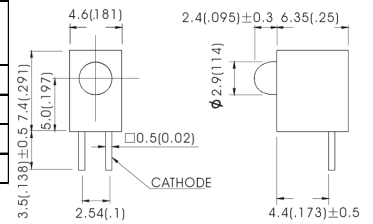
Through Hole LED - Lamp with Housing

■ Type A - Single Level Housing

7.3 x 4.6 x 6.35mm

3mm Round Lamp

Product	λD (nm)	Current (mA)	I _V (mcd)	VA 2θ _{1/2}	V _f (V)	Emission Color	Lens Color
			typ		max		
HHS3A60A	605	20	30	60	2.6	Amber	A.D.
HHS3YG60A	565	20	20	60	2.6	Yellow Green	G.D.
HHS3Y60A	590	20	20	60	2.6	Yellow	Y.D.
HHS3DR60A	660	20	200	60	2.6	Deep Red	R.D.

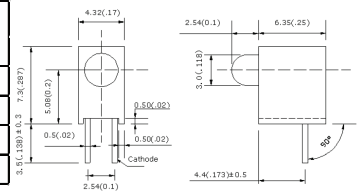


■ Type B - Single Level Housing

7.3 x 4.3 x 6.35mm

3mm Round Lamp

Product	λD (nm)	Current (mA)	I _V (mcd)	VA 2θ _{1/2}	V _f (V)	Emission Color	Lens Color
			typ		max		
HHS3A60B	605	20	30	60	2.6	Amber	A.D.
HHS3YG60B	565	20	20	60	2.6	Yellow Green	G.D.
HHS3Y60B	590	20	20	60	2.6	Yellow	Y.D.
HHS3DR60B	660	20	200	60	2.6	Deep Red	R.D.

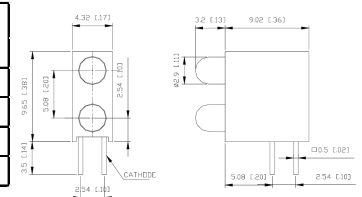


■ Type C - Dual Level Housing

9.7 x 4.3 x 9.0mm

3mm Round Lamp

Product	λD (nm)	Current (mA)	I _V (mcd)	VA 2θ _{1/2}	V _f (V)	Emission Color	Lens Color
			typ		max		
HHD3A60C	605	20	30	60	2.6	Amber	A.D.
HHD3YG60C	565	20	20	60	2.6	Yellow Green	G.D.
HHD3Y60C	590	20	20	60	2.6	Yellow	Y.D.
HHD3DR60C	660	20	200	60	2.6	Deep Red	R.D.

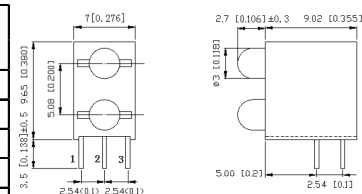


■ Type D - Dual Level Housing

9.7 x 4.3 x 9.0mm

3mm Round Lamp - BiColor

Product	λD (nm)	Current (mA)	I _V (mcd)	VA 2θ _{1/2}	V _f (V)	Emission Color	Lens Color
			typ		max		
HHD3RYG60D	625	20	35	60	2.6	Hyper Red	W.D.
	565		35		2.6	Yellow Green	W.D.
HHD3RY60D	625	20	35	60	2.6	Hyper Red	W.D.
	590		35		2.6	Yellow	W.D.
HHD3YGY60D	565	20	35	60	2.6	Yellow Green	W.D.
	590		35		2.6	Yellow	W.D.

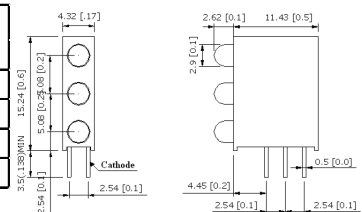


■ Type C - Triple Level Housing

15.3 x 4.3 x 11.4mm

3mm Round Lamp

Product	λD (nm)	Current (mA)	I _V (mcd)	VA 2θ _{1/2}	V _f (V)	Emission Color	Lens Color
			typ		max		
HHT3LR60C	700	20	3	60	2.6	Ultra Red	R.D.
HHT3A60C	605	20	30	60	2.6	Amber	A.D.
HHT3YG60C	565	20	20	60	2.6	Yellow Green	G.D.
HHT3Y60C	590	20	20	60	2.6	Yellow	Y.D.

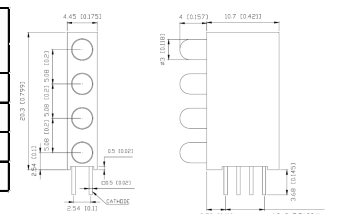


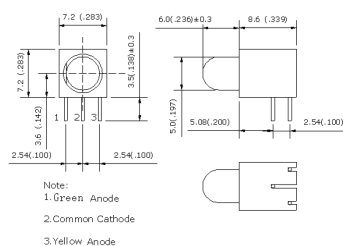
■ Type C - Quad Level Housing

20.3 x 4.5 x 10.7mm

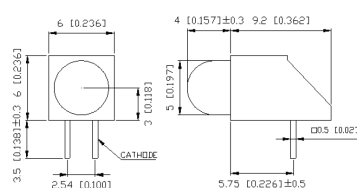
3mm Round Lamp

Product	λD (nm)	Current (mA)	I _V (mcd)	VA 2θ _{1/2}	V _f (V)	Emission Color	Lens Color
			typ		max		
HHQ3A60C	605	20	30	60	2.6	Amber	A.D.
HHQ3YG60C	565	20	20	60	2.6	Yellow Green	G.D.
HHQ3Y60C	590	20	20	60	2.6	Yellow	Y.D.
HHQ3DR60C	660	20	200	60	2.6	Deep Red	R.D.

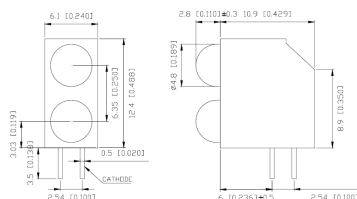


■ Type E - Single Level Housing (3pins)
7.3 x 7.3 x 8.5mm
5mm Round Lamp - BiColor


Product	λD (nm)	Current (mA)	I_V (mcd) typ	VA $2\theta_{1/2}$	Vf (V) max	Emission Color	Lens Color
HHS5RYG60E	625	20	55	60	2.6	Hyper Red	W.D.
	565	20	45	60	2.6	Yellow Green	W.D.
HHS5RY60E	625	20	55	60	2.6	Hyper Red	W.D.
	590	20	40	60	2.6	Yellow	W.D.
HHS5GY60E	565	20	45	60	2.6	Yellow Green	W.D.
	590	20	40	60	2.6	Yellow	W.D.

■ Type F - Single Level Housing
6.0 x 6.0 x 9.2mm
5mm Round Lamp


Product	λD (nm)	Current (mA)	I_V (mcd) typ	VA $2\theta_{1/2}$	Vf (V) max	Emission Color	Lens Color
HHS5A60F	605	20	50	60	2.6	Amber	A.D.
HHS5YG60F	565	20	20	60	2.6	Yellow Green	G.D.
HHS5Y60F	590	20	20	60	2.6	Yellow	Y.D.
HHS5DR60F	660	20	300	60	2.6	Deep Red	R.D.

■ Type G - Dual Level Housing
12.4 x 6.1 x 10.9mm
5mm Round Lamp


Product	λD (nm)	Current (mA)	I_V (mcd) typ	VA $2\theta_{1/2}$	Vf (V) max	Emission Color	Lens Color
HHD5A60G	605	20	20	60	2.6	Amber	A.D.
HHD5YG60G	565	20	18	60	2.6	Yellow Green	G.D.
HHD5Y60G	590	20	18	60	2.6	Yellow	Y.D.
HHD5DR60G	660	20	200	60	2.6	Deep Red	R.D.