

PCB and Panel Mount

T-100 (3 mm) — Fig. 1

Stock No.	Mfr.'s Type	Source Color	Wave Length λ_p (nm)	Lens Color	Typical Viewing Angle	Forward Voltage V_f (V)		Luminous Intensity I_v (mcd)		Notes*	EACH	
						Typ.	Max.	Min.	Typ.		1-99	100
990-4800	MV5064.MP4B	Red	660	Red Diffused	60°	1.6	2.2	0.5	1.5	4	.35	.28
990-4802	MV5364.MP4B	Yellow	585	Yellow Diffused	60°	2.1	3.0	1.0	2.0	3	.35	.28
990-4804	MV5464.MP4B	Green	565	Green Diffused	60°	2.2	3.0	10.0	15.0	4	.35	.28
990-4806	MV5764.MP4B	HER	635	Red Diffused	60°	2.0	3.0	1.0	2.0	3	.35	.28
990-4808	HLMF-1700.MP4B	HER	635	Red Diffused	50°	1.8	2.2	1.0	2.0	2	.35	.28
990-4810	HLMF-1719.MP4B	Yellow	585	Yellow Diffused	50°	1.9	2.7	1.0	2.0	2	.35	.28
990-4812	HLMF-1790.MP4B	Green	565	Green Diffused	50°	1.9	2.7	1.0	2.0	2	.35	.28
990-4814	HLMF-K101.MP4B	AlGaAs Red	660	Red Diffused	60°	1.8	2.2	25.0	45.0	4	.40	.32
990-4816	HLMF-K105.MP4B	AlGaAs Red	660	Red Clear	35°	1.8	2.2	35.0	70.0	4	.40	.32
990-4818	HLMF-K150.MP4B	AlGaAs Red	660	Red Diffused	60°	1.6	1.8	1.2	2.0	1	.40	.32
990-4820	HLMF-K155.MP4B	AlGaAs Red	660	Red Clear	45°	1.6	1.8	2.0	3.0	1	.40	.32
990-4822	MR5060.MP4B	Red	660	Red Diffused	60°	13.0	20.0	0.8	1.5	5	.45	.36
990-4824	MR5360.MP4B	Yellow	585	Yellow Diffused	60°	10.0	15.0	1.5	4.0	5	.45	.36
990-4826	MR5460.MP4B	Green	565	Green Diffused	60°	13.0	15.0	1.8	4.0	5	.45	.36
990-4828	MR5760.MP4B	HER	635	Red Diffused	60°	13.0	15.0	1.5	4.0	5	.45	.36

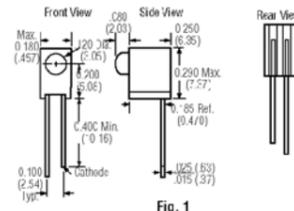


Fig. 1

T-1 3/4 (5 mm) — Fig. 2

Stock No.	Mfr.'s Type	Source Color	Wave Length λ_p (nm)	Lens Color	Typical Viewing Angle	Forward Voltage V_f (V)		Luminous Intensity I_v (mcd)		Notes*	EACH	
						Typ.	Max.	Min.	Typ.		1-99	100
990-3152	MV60538.MP5	Red	660	Red Diffused	65°	1.7	2.0	0.8	2.0	4, 7	.35	.28
990-3178	MV63538.MP5	Yellow	585	Yellow Diffused	65°	2.1	3.0	2.5	18.0	4, 7	.35	.28
990-3204	MV64538.MP5	Green	565	Green Diffused	65°	2.2	3.0	1.6	25.0	4, 7	.35	.28
990-3226	MV67538.MP5	HER	635	Red Diffused	65°	2.1	3.0	3.0	14.0	4, 7	.35	.28
990-3156	MV60538.MP5	Red	660	Red Diffused	65°	1.7	2.0	0.8	2.0	4, 8	.35	.28
990-3184	MV63538.MP5	Yellow	585	Yellow Diffused	65°	2.1	3.0	2.5	18.0	4, 8	.38	.30
990-3210	MV64538.MP5	Green	565	Green Diffused	65°	2.2	3.0	1.6	25.0	4, 8	.35	.28
990-3232	MV67538.MP5	HER	635	Red Diffused	65°	2.1	3.0	3.0	14.0	4, 8	.35	.28
990-1100	HLMF-47009.MP5	HER	635	Red Diffused	45°	1.8	2.2	1.2	2.0	2, 8	1.30	1.04
990-1108	HLMF-47199.MP5	Yellow	585	Yellow Diffused	45°	1.9	2.7	1.2	10.0	2, 8	.35	.28
990-1116	HLMF-47409.MP5	Green	565	Green Diffused	45°	1.9	2.3	1.2	2.0	2, 8	.35	.28
990-1138	HLMF-D1019.MP5	AlGaAs Red	660	Red Diffused	65°	1.8	2.2	35.0	70.0	4, 8	.50	.40
990-1146	HLMF-D1509.MP5	AlGaAs Red	660	Red Clear	24°	1.6	1.8	1.2	3.0	1, 8	.50	.40
990-3004	MV33509.MP5	Yellow	585	Yellow Clear	24°	2.2	3.0	80.0	150.0	4, 8	.35	.28
990-3014	MV34509.MP5	Green	565	Green Clear	24°	2.2	3.0	80.0	150.0	4, 8	.35	.28
990-3019	MV37509.MP5	HER	635	Orange Clear	24°	2.2	3.0	80.0	150.0	4, 8	.35	.28
990-2002	MR30509.MP5	Red	660	Red Diffused	60°	13.0	2.0	1.0	2.0	5, 8, 11	.40	.32
990-2008	MR30519.MP5	Red	660	Red Diffused	60°	13.0	2.0	1.0	2.0	6, 8, 11	.40	.32
990-2016	MR33509.MP5	Yellow	585	Yellow Diffused	60°	10.0	15.0	1.5	4.0	5, 8, 11	.40	.32
990-2026	MR33519.MP5	Yellow	585	Yellow Diffused	60°	13.0	20.0	1.5	4.0	6, 8, 11	.40	.32
990-2034	MR34509.MP5	Green	565	Green Diffused	60°	12.0	15.0	1.5	4.0	5, 8, 11	.40	.24
990-2044	MR34519.MP5	Green	565	Green Diffused	60°	12.0	20.0	1.5	4.0	6, 8, 11	.40	.32
990-2052	MR37509.MP5	HER	635	Red Diffused	60°	10.0	15.0	1.5	4.0	5, 8, 11	.40	.32
990-2062	MR37519.MP5	HER	635	Red Diffused	60°	13.0	20.0	1.5	4.0	6, 8, 11	.40	.32
990-3110	MV54919.MP5	AlGaAs Red/Green	660/565	White Diffused	100°	2.1	3.0	2.0	6.0	4, 8, 9, 10	.73	.58

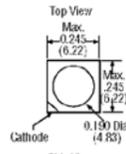


Fig. 2

T-1 3/4 (5 mm) — Fig. 3

Stock No.	Mfr.'s Type	Source Color	Wave Length λ_p (nm)	Lens Color	Typical Viewing Angle	Forward Voltage V_f (V)		Luminous Intensity I_v (mcd)		Notes*	EACH	
						Typ.	Max.	Min.	Typ.		1-99	100
990-3156	MV60538.MP7	Red	660	Red Diffused	65°	1.7	2.0	0.8	2.0	4, 7	.35	.28
990-3182	MV63538.MP7	Yellow	585	Yellow Diffused	65°	2.1	3.0	3.5	18.0	4, 7	.38	.30
990-3208	MV64538.MP7	Green	565	Green Diffused	65°	2.2	3.0	1.6	25.0	4, 7	.35	.28
990-3230	MV67538.MP7	HER	635	Red Diffused	65°	2.1	3.0	3.0	14.0	4, 7	.38	.30
990-3162	MV60538.MP7	Red	660	Red Diffused	65°	1.7	2.0	0.8	2.0	4, 12	.38	.30
990-3188	MV63538.MP7	Yellow	585	Yellow Diffused	65°	2.1	3.0	2.5	18.0	4, 12	.38	.30
990-3214	MV64538.MP7	Green	565	Green Diffused	65°	2.2	3.0	1.6	25.0	4, 12	.35	.28
990-3236	MV67538.MP7	HER	635	Red Diffused	65°	2.1	3.0	3.0	14.0	4, 12	.38	.30
990-1104	HLMF-47009.MP7	HER	635	Red Diffused	45°	1.8	2.2	1.2	2.0	2, 12	1.30	1.04
990-1112	HLMF-47199.MP7	Yellow	585	Yellow Diffused	45°	1.9	2.7	1.2	10.0	2, 12	1.30	1.04
990-1120	HLMF-47409.MP7	Green	565	Green Diffused	45°	1.9	2.3	1.2	2.0	2, 12	.38	.30
990-1140	HLMF-D1019.MP7	AlGaAs Red	660	Red Diffused	65°	1.8	2.2	35.0	70.0	4, 12	.50	.40
990-1150	HLMF-D1509.MP7	AlGaAs Red	660	Red Clear	24°	1.6	1.8	1.2	3.0	4, 12	.50	.40
990-3008	MV33509.MP7	Yellow	585	Yellow Clear	24°	2.2	3.0	80.0	150.0	4, 12	.35	.28
990-3018	MV34509.MP7	Green	565	Green Clear	24°	2.2	3.0	80.0	150.0	4, 12	.35	.28
990-3021	MV37509.MP7	HER	635	Orange Clear	24°	2.2	3.0	80.0	150.0	4, 12	.35	.28
990-2003	MR30509.MP7	Red	660	Red Diffused	60°	5.0	20.0	1.0	2.0	5, 11, 13	.40	.32
990-2012	MR30519.MP7	Red	660	Red Diffused	60°	12.0	20.0	1.0	2.0	6, 11, 13	.40	.32
990-2020	MR33509.MP7	Yellow	585	Yellow Diffused	60°	5.0	15.0	1.5	4.0	5, 11, 13	.40	.32
990-2030	MR33519.MP7	Yellow	585	Yellow Diffused	60°	12.0	20.0	1.5	4.0	6, 11, 13	.40	.32
990-2038	MR34509.MP7	Green	565	Green Diffused	60°	5.0	15.0	1.5	4.0	5, 11, 13	.40	.32
990-2048	MR34519.MP7	Green	565	Green Diffused	60°	12.0	20.0	1.5	4.0	6, 11, 13	.40	.32
990-2056	MR37509.MP7	HER	635	Red Diffused	60°	5.0	15.0	1.5	4.0	5, 11, 13	.40	.32
990-2066	MR37519.MP7	HER	635	Red Diffused	60°	12.0	20.0	1.5	4.0	6, 11, 13	.40	.32
990-3114	MV54919.MP7	AlGaAs Red/Green	660/565	White Diffused	100°	2.3	3.0	2.0	6.0	4, 8, 9, 12	.75	.60

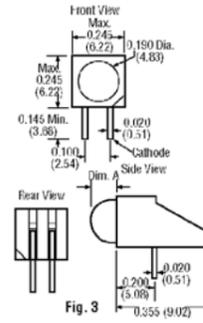


Fig. 3

T-1 3/4 (5 mm) Bilevel — Fig. 4

Stock No.	Mfr.'s Type	Source Color	Wave Length λ_p (nm)	Lens Color	Typical Viewing Angle	Forward Voltage V_f (V)		Luminous Intensity I_v (mcd)		Notes*	EACH	
						Typ.	Max.	Min.	Typ.		1-99	100
990-3164	MV60538.MP90	Red/Red	660	Red Diffused	65°	1.7	2.0	0.8	2.0	4	.65	.52
990-3190	MV63538.MP93	Yellow/Yellow	585	Yellow Diffused	65°	2.1	3.0	2.5	18.0	4	.65	.52
990-3216	MV64538.MP94	Green/Green	565	Green Diffused	65°	2.2	3.0	1.6	25.0	4	.68	.54
990-3238	MV67538.MP97	HER/HER	635	Red Diffused	65°	2.1	3.0	3.0	14.0	4	.68	.54
990-1105	HLMF-47009.MP97	HER/HER	635	Red Diffused	45°	1.9	2.2	1.2	2.0	2	.70	.56
990-3010	MV33509.MP93	Yellow/Yellow	585	Yellow Clear	24°	2.2	3.0	80.0	150.0	4	.70	.56
990-2040	MV34509.MP94	Green/Green	565	Green Clear	24°	2.2	3.0	80.0	150.0	4	1.03	.82
990-3023	MV37509.MP97	HER/HER	635	Orange Clear	24°	2.2	3.0	80.0	150.0	4	.70	.56
990-2004	MR30509.MP90	Red/Red	660	Red Diffused	60°	12.0	20.0	1.0	2.0	5, 11	.98	.78
990-2022	MR33509.MP93	Yellow/Yellow	585	Yellow Diffused	60°	10.0	15.0	1.5	4.0	5, 11	.98	.78
990-2040	MR34509.MP94	Green/Green	565	Green Diffused	60°	12.0	15.0	1.5	4.0	5, 11	1.03	.82
990-2058	MR37509.MP97	HER/HER	635	Red Diffused	60°	10.0	15.0	1.5	4.0	5, 11	1.03	.82
990-3116	MV54919.MP91	AlGaAs/Gm	660/565	White Diffused	100°	2.1	3.0	2.0	6.0	4, 9, 10	1.48	1.18

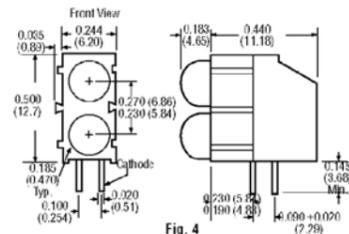


Fig. 4

1: V_f and I_v @ $I_f = 1$ mA. 2: V_f and I_v @ $I_f = 2$ mA. 3: V_f and I_v @ $I_f = 10$ mA. 4: V_f and I_v @ $I_f = 20$ mA. 5: I_f and I_v @ $V_f = 5$ V. 6: I_f and I_v @ $V_f = 12$ V. 7: Dim A = 0.125 (3.18). 8: Dim A = 0.180 (4.57). 9: Bicolor. 10: The cathode is the AlGaAs Red, cathode for red/green bicolor LED. 11: Integral Resistor. 12: Dim. A = 0.183 (4.65). 13: Dim. A = 0.195 (4.95).