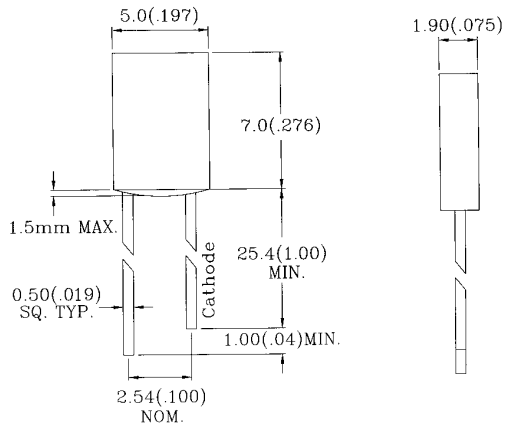
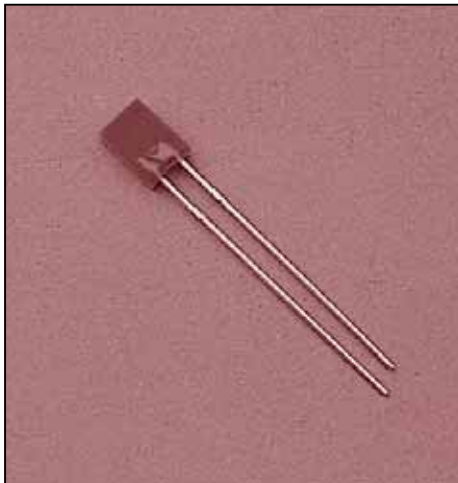
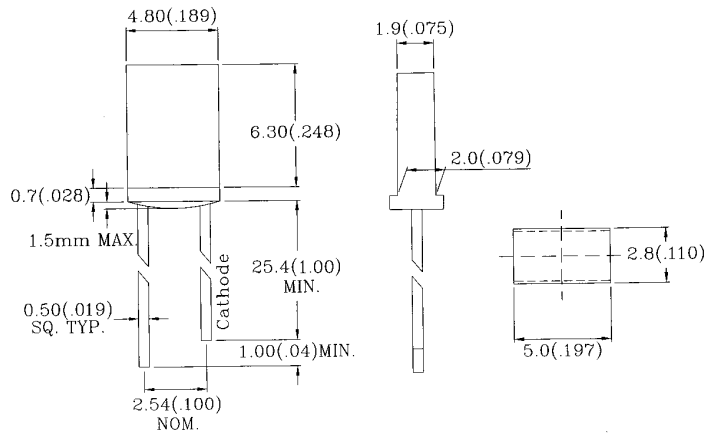
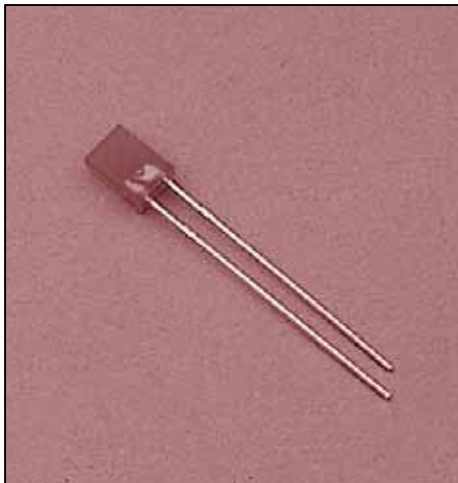


L-403XX 2.0x5.0x7.0 mm FLANGELESS RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-403HD	GaP	Red	Red Diffused	700	2.3	2.8	3.0	120
L-403GD	GaP	Green	Green Diffused	565	2.2	2.8	6.0	120
L-403YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	5.0	120
L-403ED	GaAsP/GaP	Hi.effi Red	Red Diffused	635	2.1	2.8	8.0	120
L-403SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	15.0	120

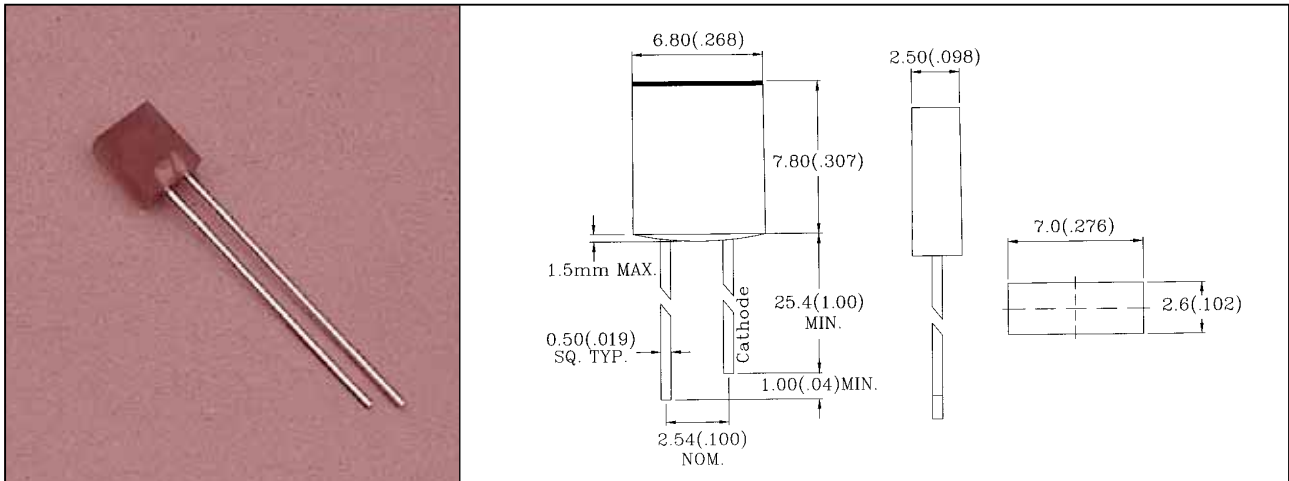
L-413XX 2.0x4.8x7.0 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-413HD	GaP	Red	Red Diffused	700	2.3	2.8	3.0	120
L-413GD	GaP	Green	Green Diffused	565	2.2	2.8	6.0	120
L-413YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	5.0	120
L-413ED	GaAsP/GaP	Hi.effi Red	Red Diffused	635	2.1	2.8	8.0	120
L-413SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	15.0	120

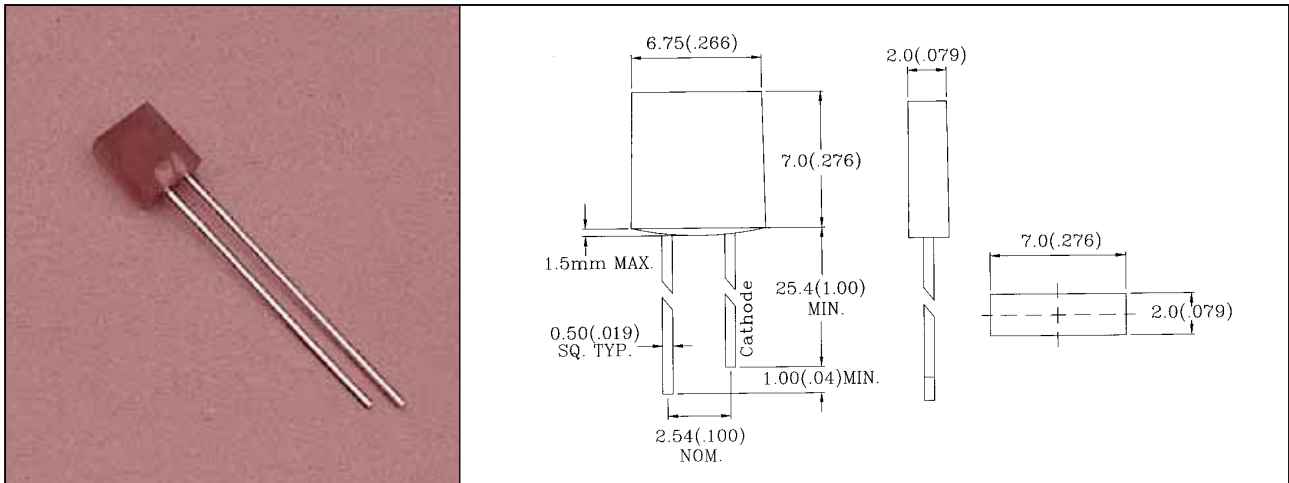
- 1.All dimension are in millimeters (inches).
- 2.Tolerance is ± 0.25 mm (0.01") unless otherwise specified.

L-423XX 2.5x7.0x7.8 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-423HD	GaP	Red	Red Diffused	700	2.3	2.8	3.0	120
L-423GD	GaP	Green	Green Diffused	565	2.2	2.8	6.0	120
L-423YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	5.0	120
L-423ED	GaAsP/GaP	Hi. effi Red	Red Diffused	635	2.1	2.8	8.0	120
L-423SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	18.0	120

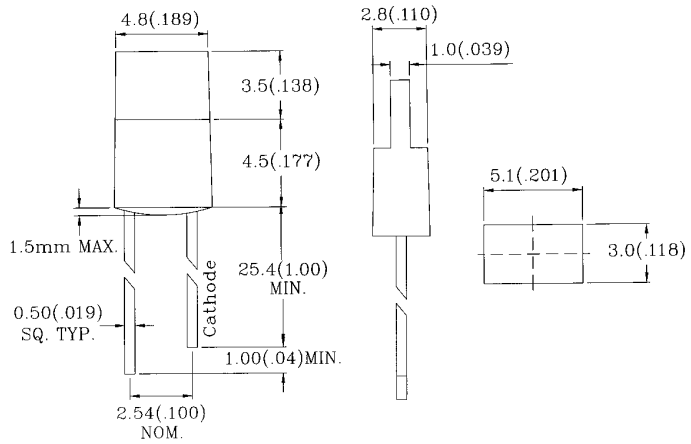
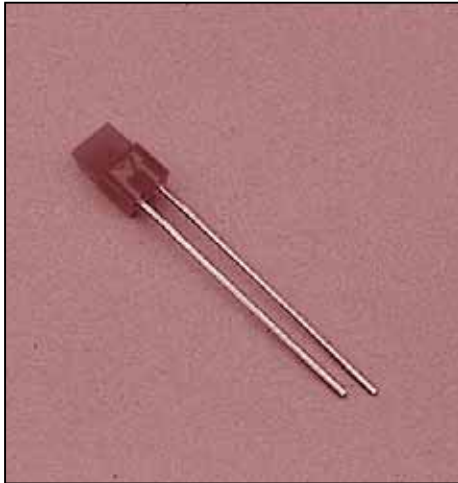
L-433XX 2.5x7.0x7.0 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-433HD	GaP	Red	Red Diffused	700	2.3	2.8	3.0	120
L-433GD	GaP	Green	Green Diffused	565	2.2	2.8	6.0	120
L-433YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	5.0	120
L-433ED	GaAsP/GaP	Hi. effi Red	Red Diffused	635	2.1	2.8	8.0	120
L-433SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	15.0	120

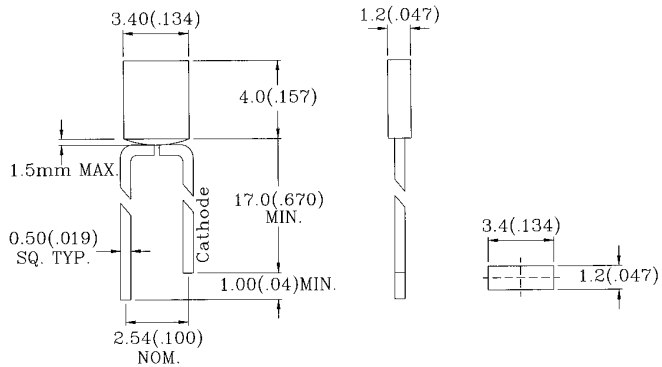
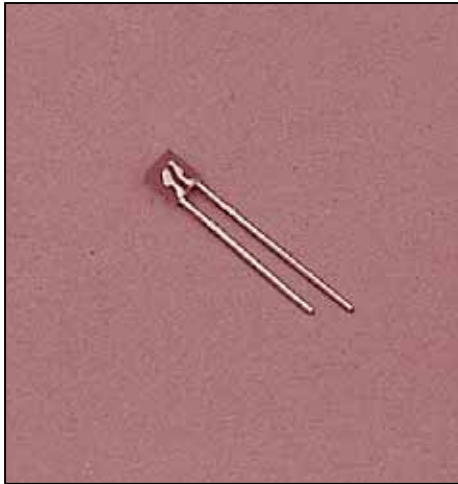
- 1.All dimension are in millimeters (inches).
- 2.Tolerance is ± 0.25 mm (0.01") unless otherwise specified.

L-443XX 1.0x5.0x8.0 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p (nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-443HD	GaP	Red	Red Diffused	700	2.3	2.8	2.5	150
L-443GD	GaP	Green	Green Diffused	565	2.2	2.8	5.0	150
L-443YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	4.0	150
L-443ED	GaAsP/GaP	Hi.effi Red	Red Diffused	635	2.1	2.8	6.0	150
L-443SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	12.0	150

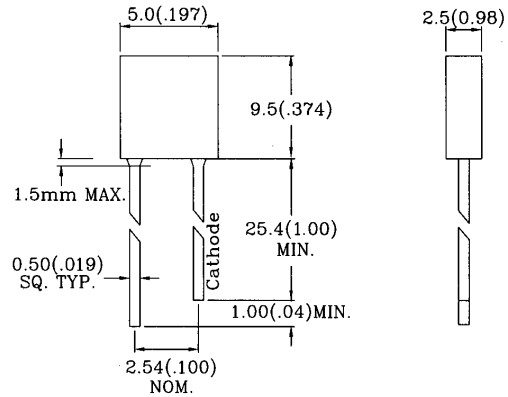
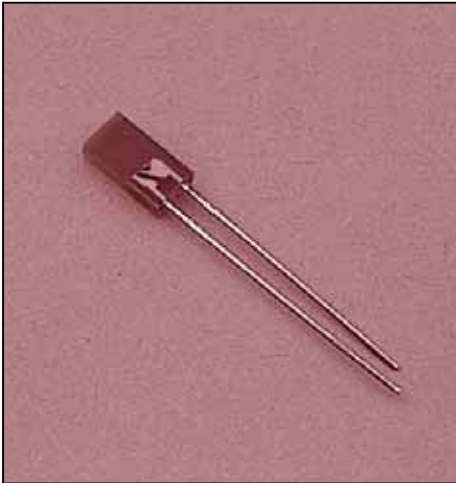
L-452XX 1.2x3.4x4.0 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p (nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-452HD	GaP	Red	Red Diffused	700	2.3	2.8	1.2	150
L-452GD	GaP	Green	Green Diffused	565	2.2	2.8	2.5	150
L-452YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	2.0	150
L-452ED	GaAsP/GaP	Hi.effi Red	Red Diffused	635	2.1	2.8	3.0	150
L-452SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	4.0	150

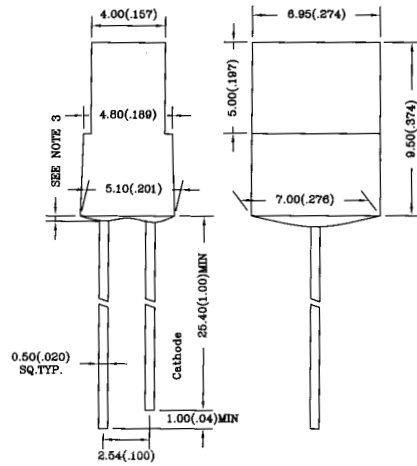
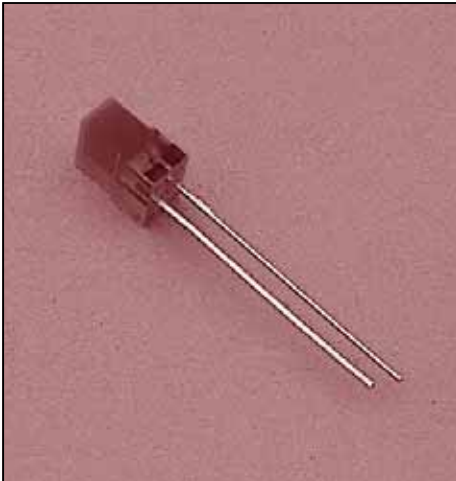
- 1.All dimension are in millimeters (inches).
- 2.Tolerance is ± 0.25 mm (0.01") unless otherwise specified.

L-463XX 2.5x5.0x9.5 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-463HD	GaP	Red	Red Diffused	700	2.3	2.8	1.8	120
L-463GD	GaP	Green	Green Diffused	565	2.2	2.8	4.0	120
L-463YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	3.0	120
L-463ED	GaAsP/GaP	Hi.effi Red	Red Diffused	635	2.1	2.8	6.0	120
L-463SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	10.0	120

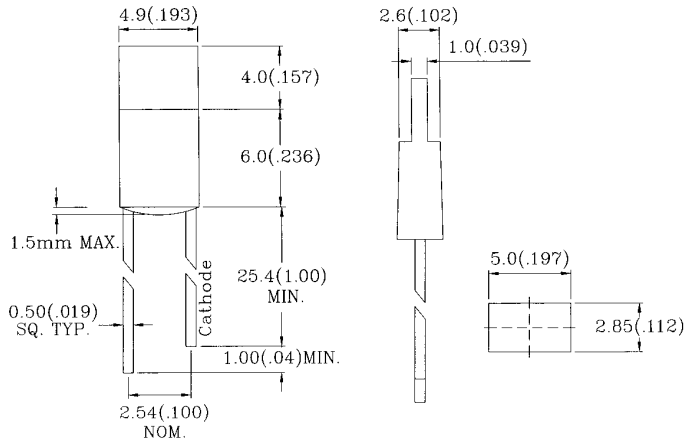
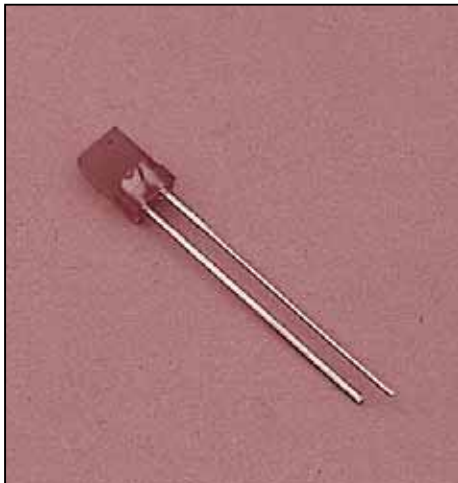
L-473XX 4.0x7.0x9.5 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-473HD	GaP	Red	Red Diffused	700	2.3	2.8	1.8	150
L-473GD	GaP	Green	Green Diffused	565	2.2	2.8	4.0	150
L-473YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	3.0	150
L-473ED	GaAsP/GaP	Hi.effi Red	Red Diffused	635	2.1	2.8	6.0	150
L-473SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	10.0	150

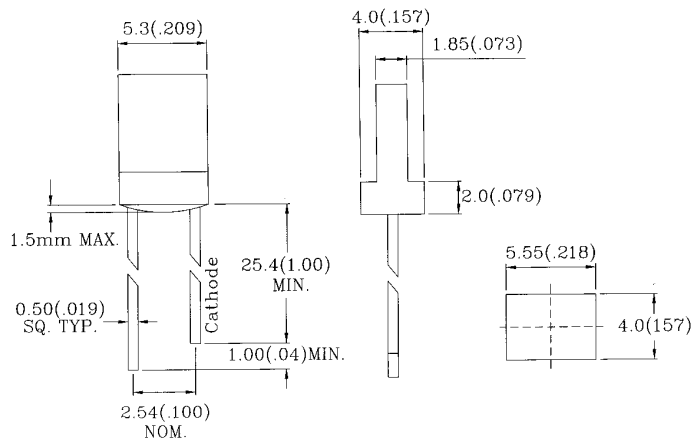
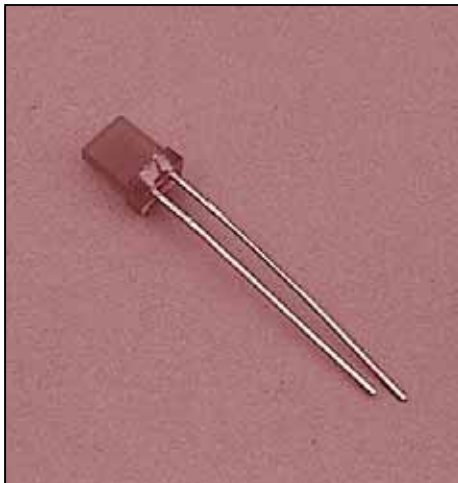
- 1.All dimension are in millimeters (inches).
- 2.Tolerance is ± 0.25 mm (0.01") unless otherwise specified.

L-483XX 1.0x5.0x10.0 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-483HD	GaP	Red	Red Diffused	700	2.3	2.8	3.0	120
L-483GD	GaP	Green	Green Diffused	565	2.2	2.8	6.0	120
L-483YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	5.0	120
L-483ED	GaAsP/GaP	Hi.effi Red	Red Diffused	635	2.1	2.8	8.0	120
L-483SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	10.0	120

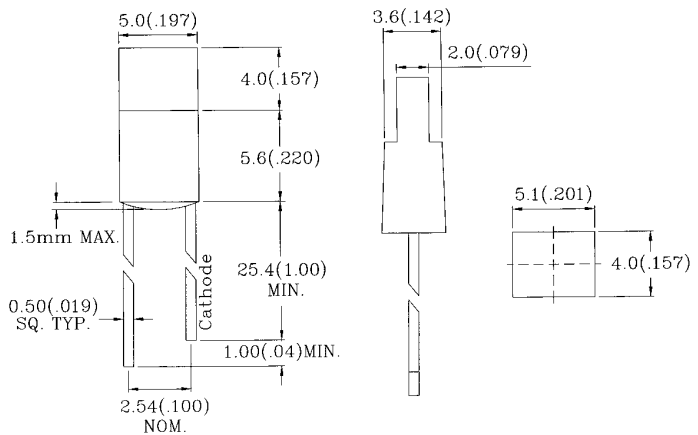
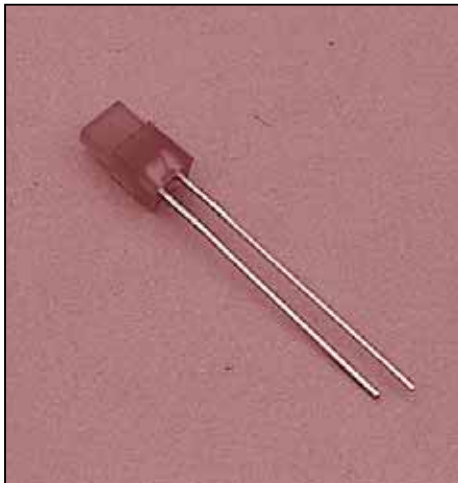
L-493XX 1.8x5.3x8.0 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-493HD	GaP	Red	Red Diffused	700	2.3	2.8	2.5	150
L-493GD	GaP	Green	Green Diffused	565	2.2	2.8	5.0	150
L-493YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	4.0	150
L-493ED	GaAsP/GaP	Hi.effi Red	Red Diffused	635	2.1	2.8	7.0	150
L-493SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	12.0	150

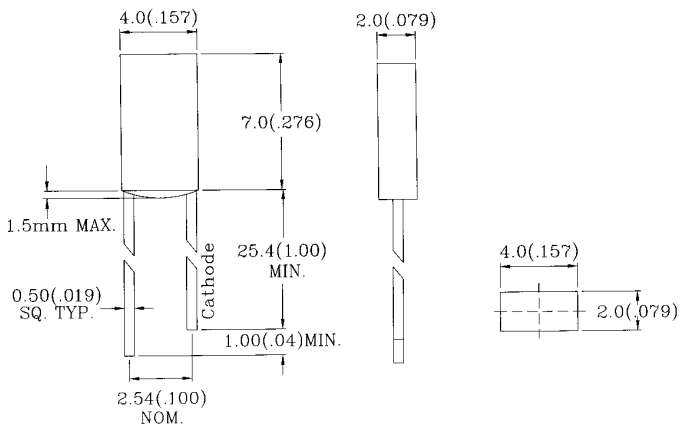
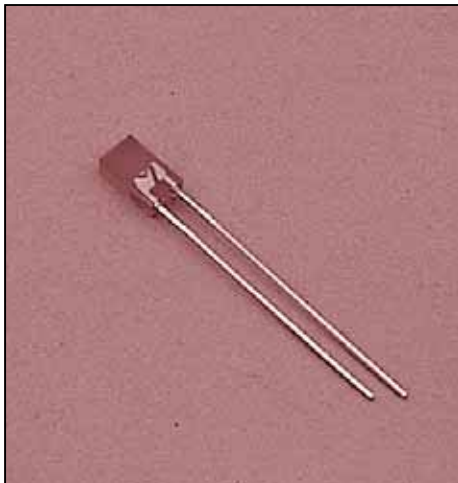
- 1.All dimension are in millimeters (inches).
- 2.Tolerance is ± 0.25 mm (0.01") unless otherwise specified.

L-4F3XX 2.0x5.0x9.6 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-4F3HD	GaP	Red	Red Diffused	700	2.3	2.8	2.5	150
L-4F3GD	GaP	Green	Green Diffused	565	2.2	2.8	5.0	150
L-4F3YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	4.0	150
L-4F3ED	GaAsP/GaP	Hi. effi Red	Red Diffused	635	2.1	2.8	7.0	150
L-4F3SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	12.0	150

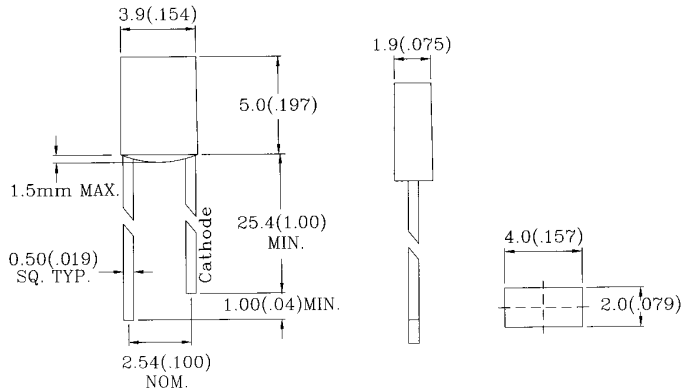
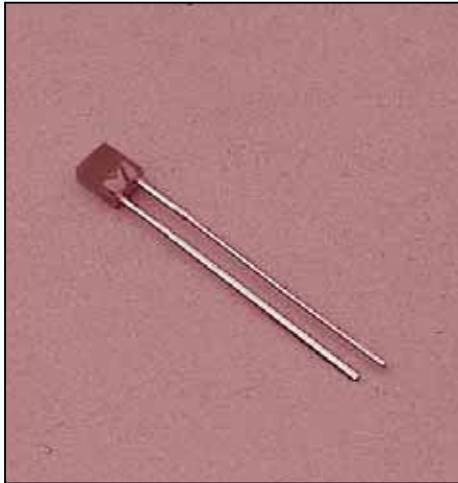
L-4H4XX 2.0x4.0x7.0 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-4H4HD	GaP	Red	Red Diffused	700	2.3	2.8	3.0	120
L-4H4GD	GaP	Green	Green Diffused	565	2.2	2.8	6.0	120
L-4H4YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	5.0	120
L-4H4ED	GaAsP/GaP	Hi. effi Red	Red Diffused	635	2.1	2.8	8.0	120
L-4H4SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	15.0	120

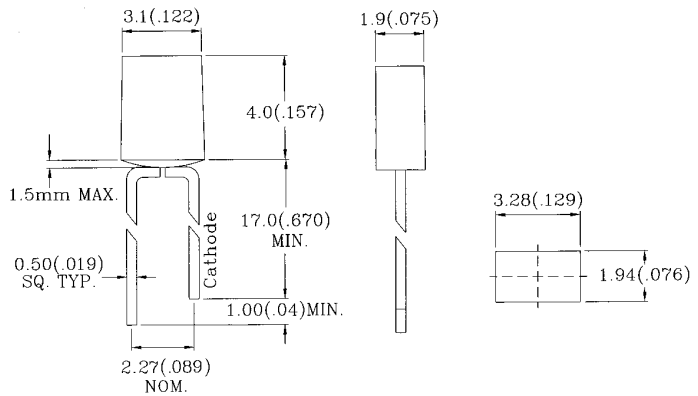
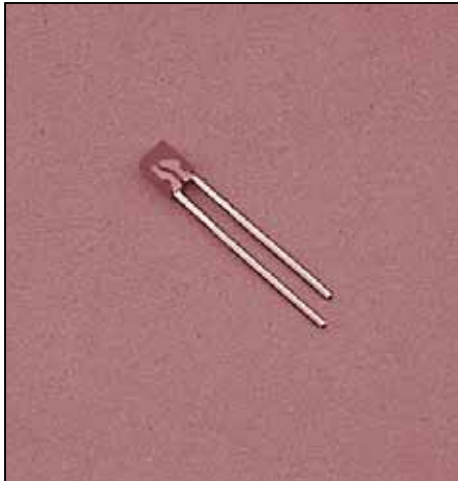
- 1.All dimension are in millimeters (inches).
- 2.Tolerance is ± 0.25 mm (0.01") unless otherwise specified.

L-4L3XX 1.9x3.9x5.0 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-4L3HD	GaP	Red	Red Diffused	700	2.3	2.8	3.0	120
L-4L3GD	GaP	Green	Green Diffused	565	2.2	2.8	6.0	120
L-4L3YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	5.0	120
L-4L3ED	GaAsP/GaP	Hi.effi Red	Red Diffused	635	2.1	2.8	8.0	120
L-4L3SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	15.0	120

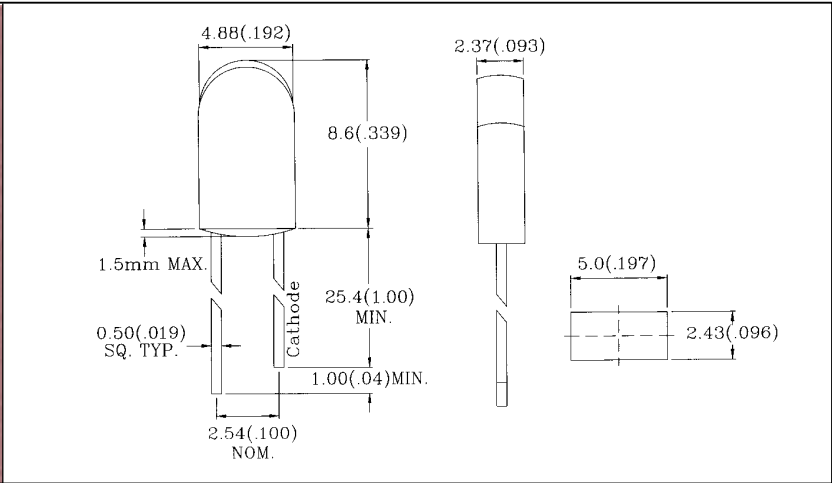
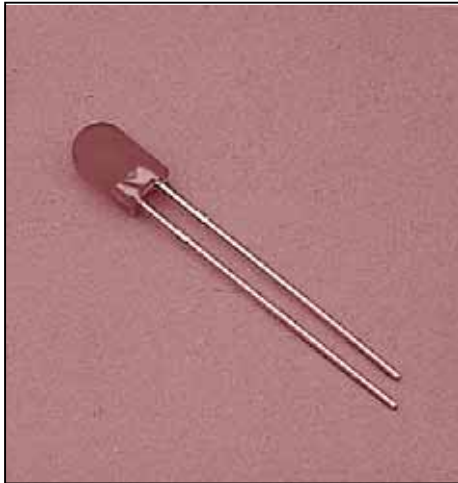
L-602XX 1.9x3.1x4.0 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-602HD	GaP	Red	Red Diffused	700	2.3	2.8	1.2	135
L-602GD	GaP	Green	Green Diffused	565	2.2	2.8	2.5	135
L-602YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	2.0	135
L-602ED	GaAsP/GaP	Hi.effi Red	Red Diffused	635	2.1	2.8	3.0	135
L-602SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	4.0	135

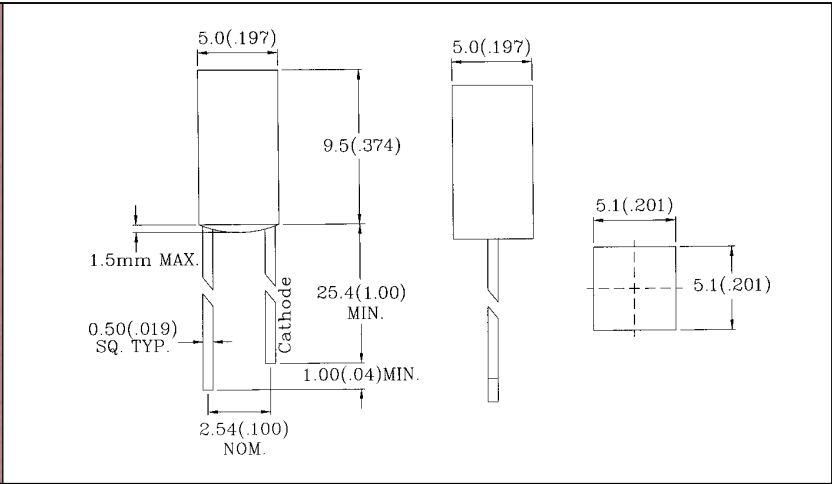
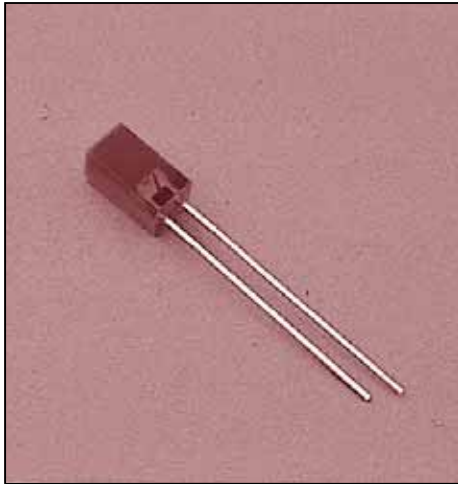
- 1.All dimension are in millimeters (inches).
- 2.Tolerance is ± 0.25 mm (0.01") unless otherwise specified.

L-613XX 2.37x4.88x8.6 mm TOMBSTONE TYPE LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-613HD	GaP	Red	Red Diffused	700	2.3	2.8	5.0	170
L-613GD	GaP	Green	Green Diffused	565	2.2	2.8	12.0	170
L-613YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	10.0	170
L-613ED	GaAsP/GaP	Hi. effi Red	Red Diffused	635	2.1	2.8	15.0	170
L-613SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	20.0	170

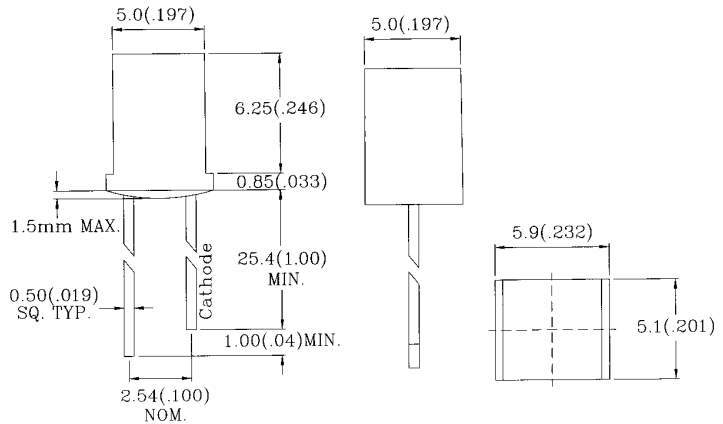
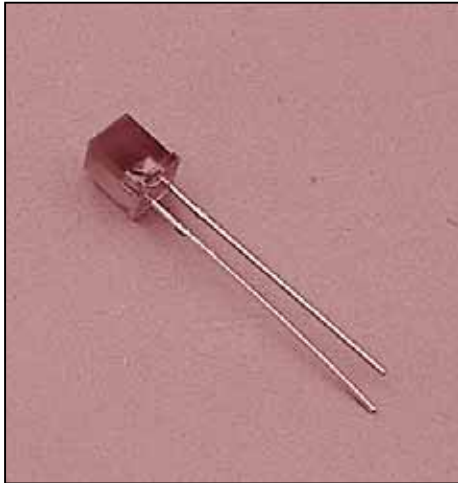
L-643XX 5.0x5.0 mm SQUARE LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-643HD	GaP	Red	Red Diffused	700	2.3	2.8	2.0	150
L-643GD	GaP	Green	Green Diffused	565	2.2	2.8	5.0	150
L-643YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	4.0	150
L-643ED	GaAsP/GaP	Hi. effi Red	Red Diffused	635	2.1	2.8	8.0	150
L-643SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	10.0	150

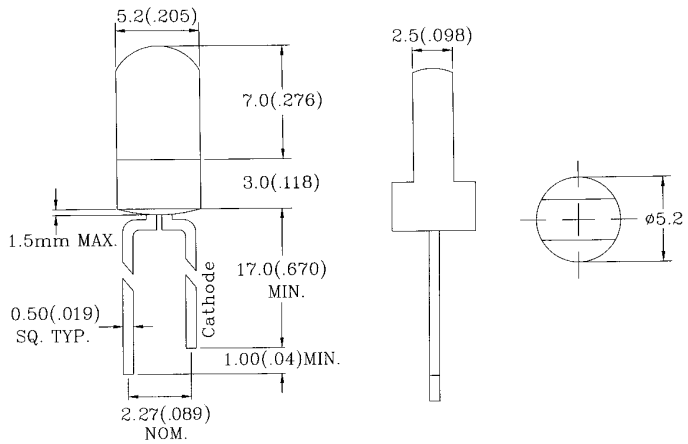
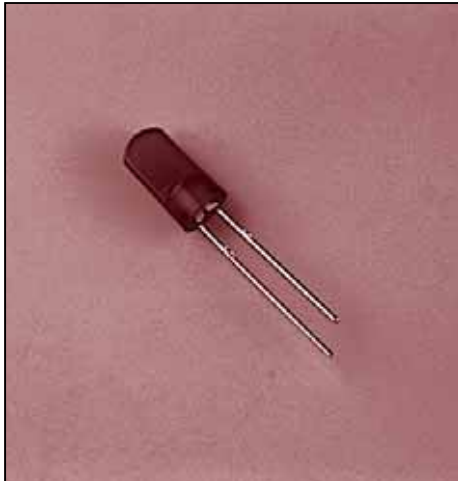
- 1.All dimension are in millimeters (inches).
- 2.Tolerance is ± 0.25 mm (0.01") unless otherwise specified.

L-653XX 5.0x5.0 mm SQUARE LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-653HD	GaP	Red	Red Diffused	700	2.3	2.8	2.0	150
L-653GD	GaP	Green	Green Diffused	565	2.2	2.8	5.0	150
L-653YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	4.0	150
L-653ED	GaAsP/GaP	Hi. effi Red	Red Diffused	635	2.1	2.8	8.0	150
L-653SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	10.0	150

L-6H2XX 2.5x5.2 mm RECTANGULAR LED LAMP



Part No.	Chip		Lens Color	Wave Length λ p(nm)	Electro-Optical Characteristics			View Angle (deg)
	Raw Material	Emitted Color			Vf(V)20mA		lv(mcd)20mA	
					Typ.	Max.	Typ.	
L-6H2HD	GaP	Red	Red Diffused	700	2.3	2.8	2.0	150
L-6H2GD	GaP	Green	Green Diffused	565	2.2	2.8	5.0	150
L-6H2YD	GaAsP/GaP	Yellow	Yellow Diffused	585	2.1	2.8	4.0	150
L-6H2ED	GaAsP/GaP	Hi. effi Red	Red Diffused	635	2.1	2.8	8.0	150
L-6H2SRD	GaAlAs	Super Red	Red Diffused	660	1.8	2.2	10.0	150

- 1.All dimension are in millimeters (inches).
- 2.Tolerance is ± 0.25 mm (0.01") unless otherwise specified.