

■ Features:

- 10.0mm Round Type LED Lamps.
- Standard brightness.
- Choice of various viewing angles.
- Diffused, Transparent and Water clear lens are available.
- Popular T-1 diameter package.
- IC compatible /Low current capability.

■ Part No.:

FYL-	Iv TYP.(mcd)	View Angle (2 θ 1/2)	FYL-	Iv TYP.(mcd)	View Angle (2 θ 1/2)
10013HD	6	60 °	10013HT	12	40 °
10013ED	40	60 °	10013ET	90	40 °
10013ED-E	40	60 °	10013ET-E	90	40 °
10013YD	30	60 °	10013YT	60	40 °
10013GD	30	60 °	10013GT	60	40 °

Len Color: C=Water Clear, D=Color Diffused, T=Color Trans

■ Description:

- Color Code & Chip characteristics: (Test Condition: IF=20mA)

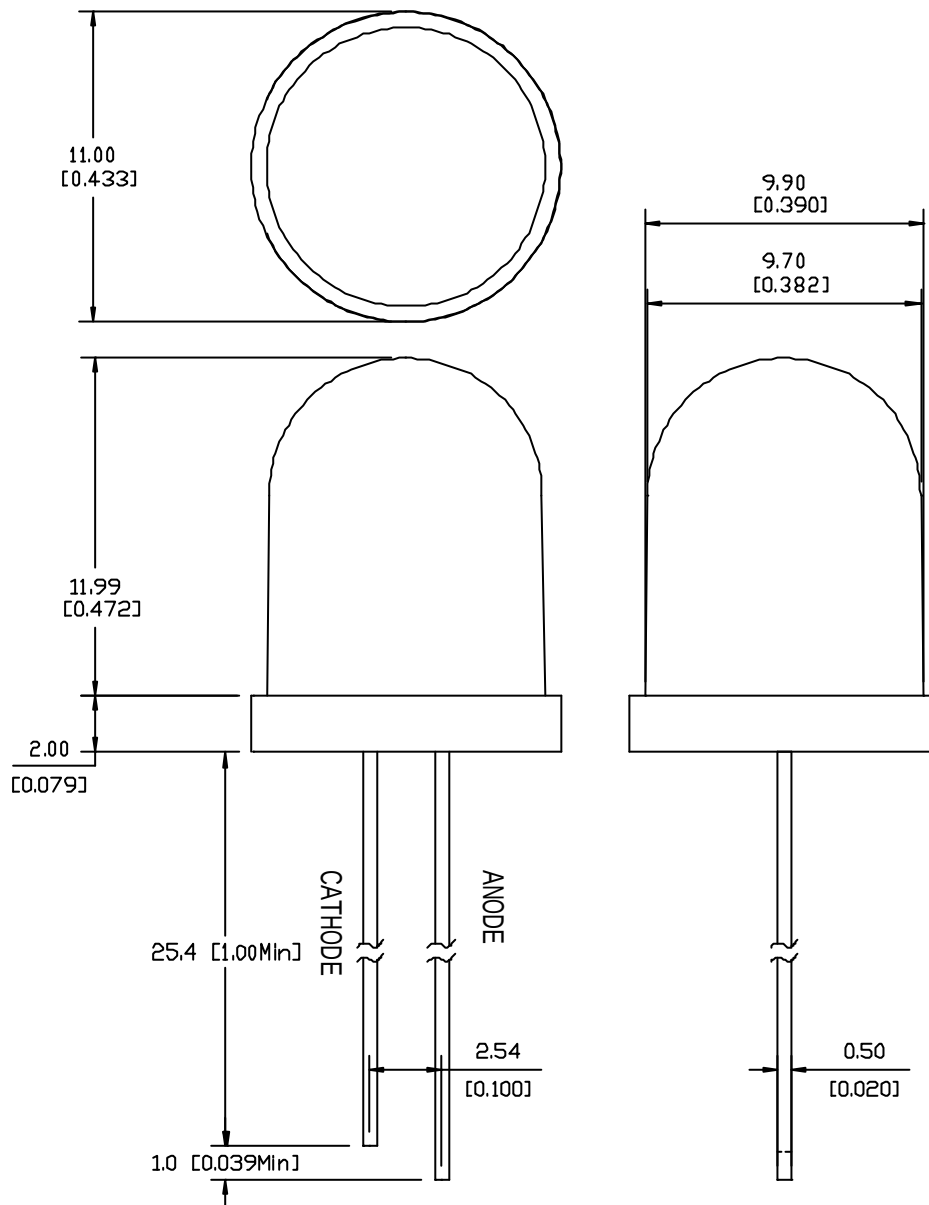
Emitting Color		Dice Material	Peak Wave Length (λ_p)	Spectral Line halfwidth($\lambda_{1/2}$)	Forward Voltage(VF) Unit:V		Luminous Intensity (Iv) Unit:ucd
					Typ	Max	
H	Red	GaP/GaP	700nm	90nm	2.25	2.60	500
E	Orange	GaAsP/GaP	635nm	35nm	2.10	2.50	2500
Y	Yellow	GaAsP/GaP	585nm	35nm	2.10	2.50	2000
G	Green	GaP/GaP	570nm	30nm	2.20	2.50	2500

■ Electrical-optical characteristics: (Ta=25 °C)

Parameter	Symbol	GaP(Red)	AlGaAs	GaAsP	GaP(Green)	Unit
Power Dissipation	P_{ad}	40	60	80	80	mW
Peak Forward Current *	I_{pf}	50	150	150	150	mA
Continuous Forward Current	I_{af}	15	25	30	30	mA

Notes: · * Test Condition = Duty 0.1, 10KHZ

■ Package configuration & Internal circuit diagram:



Notes:

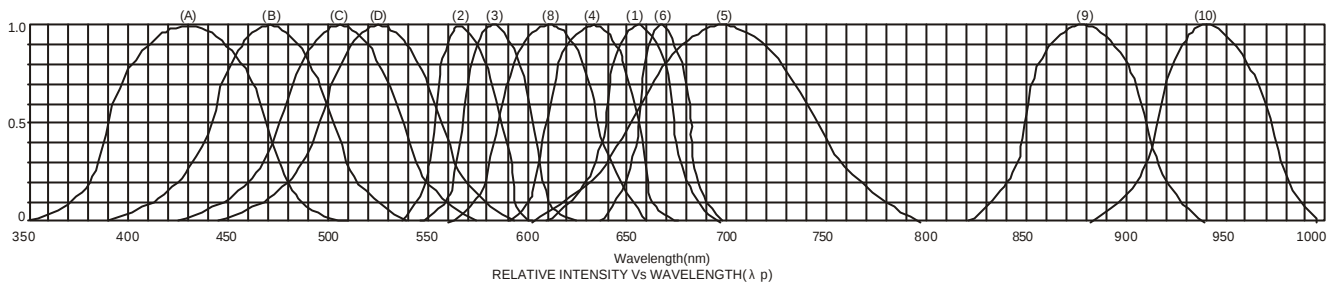
- All dimensions are in millimeters (inches)
- Tolerance is $\pm 0.25(0.01")$ unless otherwise noted.
- Specifications are subject to change without notice.

■ Absolute maximum ratings (Ta=25)

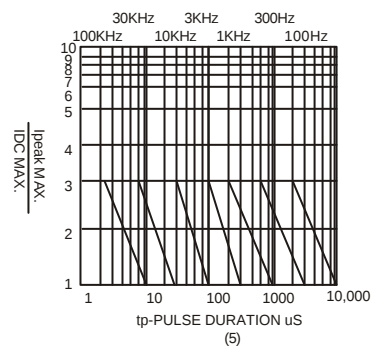
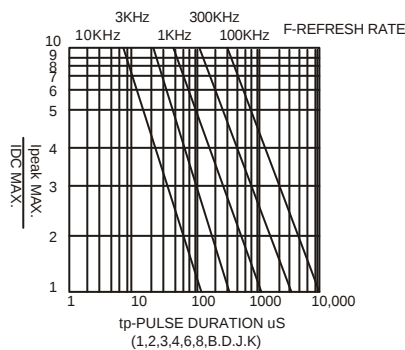
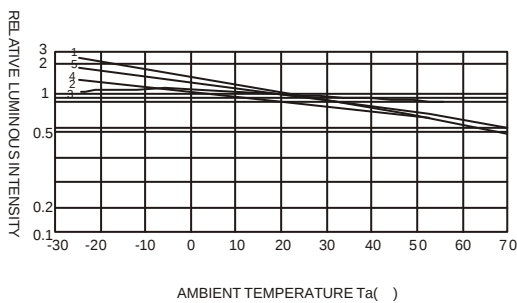
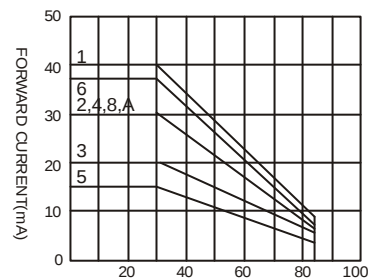
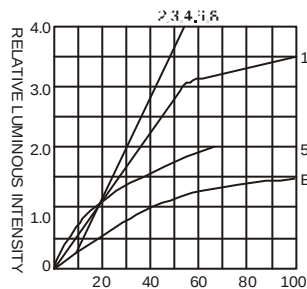
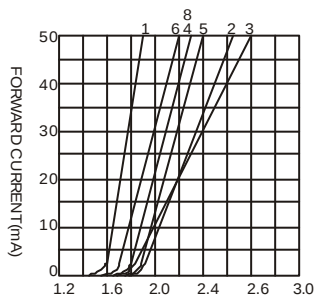
Reverse Voltage	5V
Reverse Current	20μA
Operating Temperature Range	-40 to+85
Storage Temperature Range	-40 to+85
Lead Solder Temperature (1.6mm(1/16")from body) 230 for 5 Seconds	

■ BIN code

Iv(mcd)				
a(1-11)	b(9-21)	c(19-31)	d(29-41)	e(39-51)
f(49-61)	g(59-73)	h(71-87)	i(85-105)	j(103-125)
k(123-151)	l(149-181)	m(179-216)	n(214-259)	o(257-311)
p(309-373)	q(371-447)	r(445-536)	s(534-643)	t(641-772)
u(770-926)	v(924-1111)	w(1109-1333)	x(1331-1601)	y(1599-1919)
z(1917-2302)				
A(2300-2761)	B(2759-3313)	C(3311-3976)	D(3974-4771)	E(4769--5725)
F(5723-6870)	G(6868-8244)	H(8242-9892)	I(9890-11870)	J(11868-14244)
K(14242-17093)	L(17901-20511)	M(20509-24613)	N(24611-29536)	O(29534-35442)
P(35440-42531)	Q(42529-51036)	R(51034-61244)	S(61242-73492)	T(73490-88191)
U(88189-105828)	V(105826-126994)	W(126992-152392)	X(152390-182870)	Y(182868-219444)
Z(219442-263333)				
View Angle(2 θ 1/2) °				
A(1-6)	B(4-11)	C(9-16)	D(14-21)	E(19-26)
F(24-31)	G(29-36)	H(34-41)	I(39-46)	J(44-51)
K(49-56)	L(54-61)	M(59-66)	N(64-71)	O(69-76)
P(74-81)	Q(79-86)	R(84-91)	S(89-96)	T(94-101)
U(99-106)	V(104-111)	W(109-116)	X(114-121)	Y(119-126)

■ Typical electrical-optical characteristics curves:


- | | |
|---|--------------------------------------|
| (1) - GaAsP/GaAs 655nm/Red | (9) - GaAlAs 880nm |
| (2) - GaP 570nm/Yellow Green | (10) - GaAs/GaAs & GaAlAs/GaAs 940nm |
| (3) - GaAsP/GaP 585nm/Yellow | (A) - GaN/SiC 430nm/Blue |
| (4) - GaAsP/GaP 635nm/Orange & Hi-Eff Red | (B) - InGaN/SiC 470nm/Blue |
| (5) - GaP 700nm/Bright Red | (C) - InGaN/SiC 505nm/Ultra Green |
| (6) - GaAlAs/GaAs 660nm/Super Red | (D) - InGaAl/SiC 525nm/Ultra Green |
| (8) - GaAsP/GaP 610nm/Super Red | |



NOTE: T_25 free air temperature unless otherwise specified