

Features:

- 2X5X7 mm Rectangular 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 1/2)	FYL-	Iv TYP.(mcd)	View Angle (2 1/2)
2513HD	2	120 °	2513HT	4	100 °
2513ED	10	120 °	2513ET	20	100 °
2513ED-E	10	120 °	2513ET-E	20	100 °
2513YD	8	120 °	2513YT	16	100 °
2513GD	8	120 °	2513GT	16	100 °

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

Description:

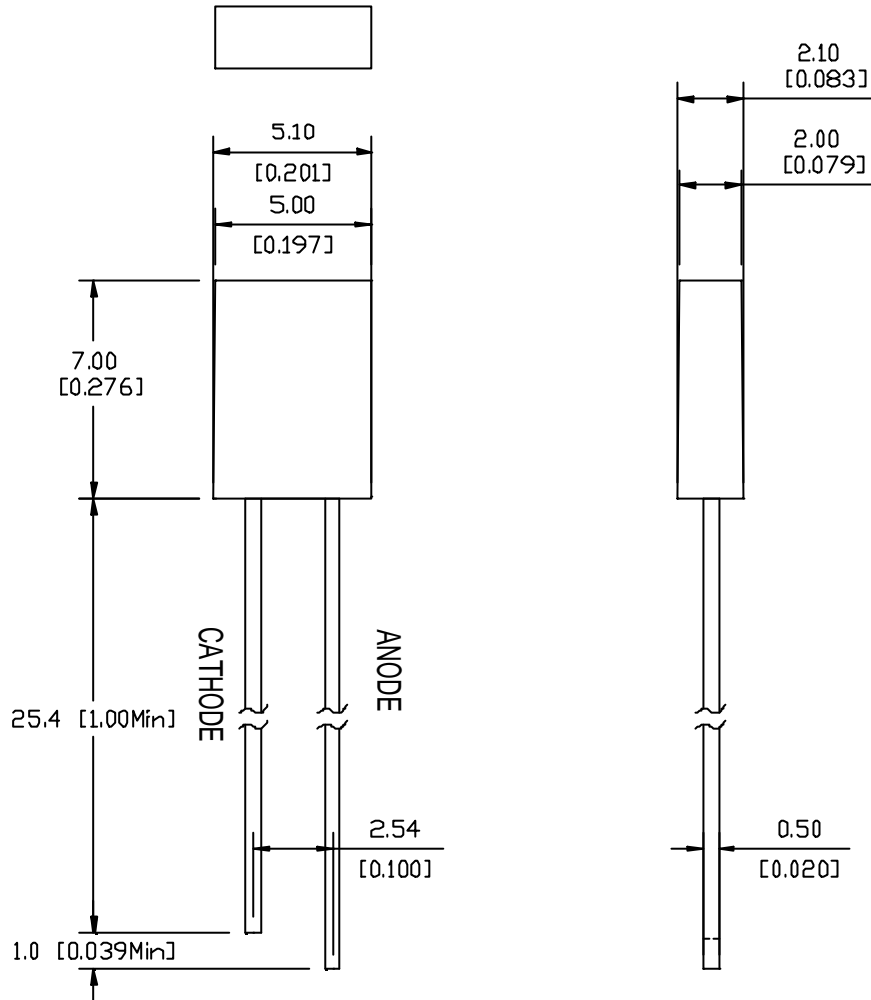
- Color Code & Chip characteristics: (Test Condition: IF=20mA)

Emitting Color	Dice Material	Peak Wave Length (λ _p)	Spectral Line halfwidth (λ _{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.

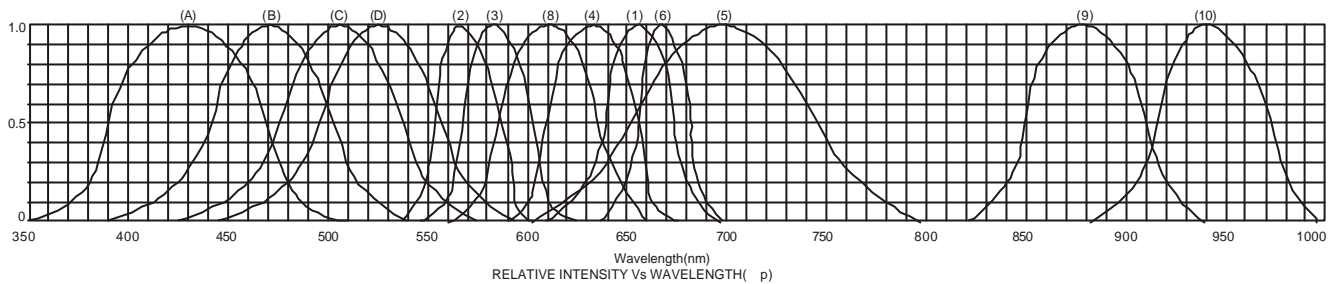
Absolute maximum ratings (Ta=25)

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	

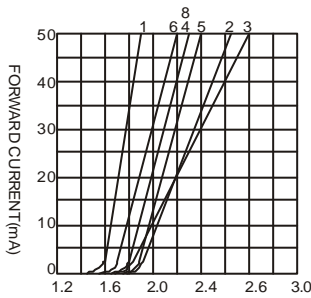
BIN code

lv(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 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)

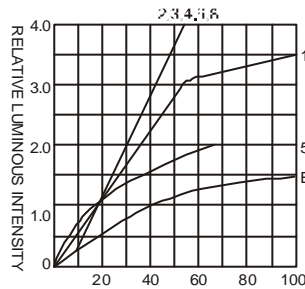
Typical electrical-optical characteristics curves:



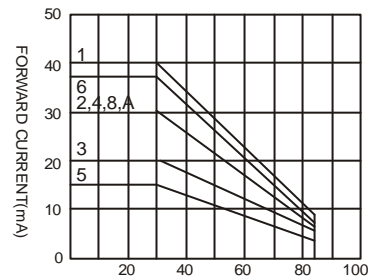
- (1) - GaAsP/GaAs 655nm/Red
- (2) - GaP 570nm/Yellow Green
- (3) - GaAsP/GaP 585nm/Yellow
- (4) - GaAsP/GaP 635nm/Orange & Hi-Eff Red
- (5) - GaP 700nm/Bright Red
- (6) - GaAlAs/GaAs 660nm/Super Red
- (8) - GaAsP/GaP 610nm/Super Red
- (9) - GaAlAs 880nm
- (10) - GaAs/GaAs & GaAlAs/GaAs 940nm
- (A) -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



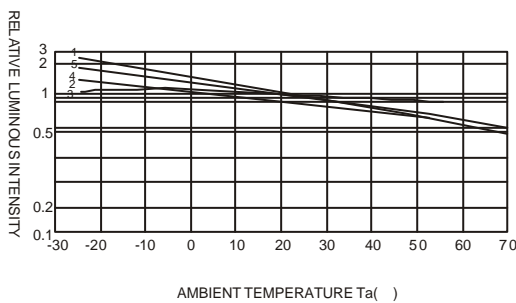
FORWARD VOLTAGE (Vf)
 FORWARD CURRENT VS.
 FORWARD VOLTAGE



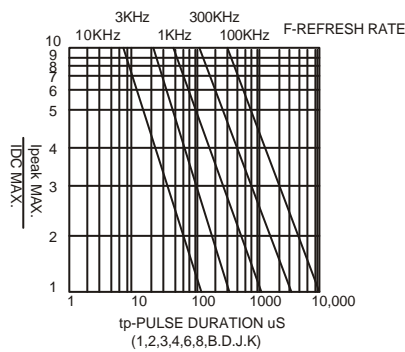
FORWARD CURRENT (mA)
 RELATIVE LUMINOUS
 INTENSITY VS. FORWARD
 CURRENT



AMBIENT TEMPERATURE Ta (°C)
 FORWARD CURRENT VS. AMBIENT
 TEMPERATURE

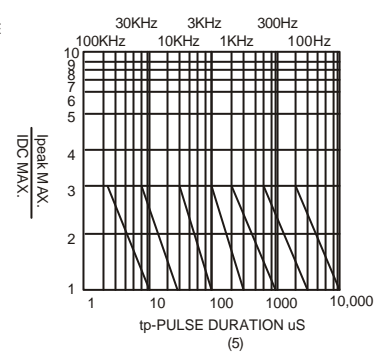


AMBIENT TEMPERATURE Ta (°C)



Ipeak MAX
 IDCC MAX

tp-PULSE DURATION µs
 (1,2,3,4,6,8,B,D,J,K)



Ipeak MAX
 IDCC MAX

tp-PULSE DURATION µs
 (5)

NOTE:25 free air temperature unless otherwise specified