

PART NUMBER	LED COLOR
591-2001-002	HI.EFF. RED
591-2001-013	
591-2101-013	
591-2101-002	AlGaAs RED
591-2101-013	
591-2201-002	
591-2201-007	HI. INTENSITY GREEN
591-2201-013	
591-2301-002	
591-2301-007	GREEN
591-2301-013	
591-2401-002	
591-2401-013	YELLOW
591-2601-002	
591-2601-013	
591-2701-002	BLUE
591-2701-013	
591-2701-013	
591-2701-002	AlInGaP YELLOW
591-2701-013	
591-2701-013	

LED COLOR = HI.EFF. / RED - GREEN - YELLOW						
OPERATING CHARACTERISTICS AT 25°C AMBIENT						
CHARACTERISTICS		MIN	TYP	MAX	UNITS	TEST CONDITIONS
LUMINOUS INTENSITY	RED	5.6	9.8	14.0	mcd	I <sub>f</sub> = 10 mA
	GREEN	7.1	10.6	14.0		
	YELLOW	7.1	12.6	18.0		
FORWARD VOLTAGE	RED	2.0	2.5	2.5	V	I <sub>f</sub> = 10 mA
	GREEN	2.0	2.5	2.5		
	YELLOW	2.0	2.5	2.5		
REVERSE VOLTAGE	RED	5	5	5	V	I <sub>r</sub> = 10 µA
	GREEN	5	5	5		
	YELLOW	5	5	5		
PEAK WAVELENGTH	RED	635	635	635	nm	I <sub>f</sub> = 10 mA
	GREEN	572	572	572		
	YELLOW	586	586	586		
DOMINANT WAVELENGTH	RED	622	628	634	nm	I <sub>f</sub> = 10 mA
	GREEN	564	570	576		
	YELLOW	580	587	593		

LED COLOR = RED (AlGaAs) GREEN (HI.INT.) YELLOW (AlInGaP)						
OPERATING CHARACTERISTICS AT 25°C AMBIENT						
CHARACTERISTICS		MIN	TYP	MAX	UNITS	TEST CONDITIONS
LUMINOUS INTENSITY	AlGaAs RED	23.9	23.9	23.9	mcd	I <sub>f</sub> = 10 mA
	HI.INT. GREEN	9.1	9.1	9.1		
	AlInGaP YELLOW	33.6	33.6	33.6		
FORWARD VOLTAGE	AlGaAs RED	1.8	2.4	2.4	V	I <sub>f</sub> = 20 mA
	HI.INT. GREEN	2.1	2.6	2.6		
	AlInGaP YELLOW	2.0	2.4	2.4		
REVERSE VOLTAGE	AlGaAs RED	5	5	5	V	I <sub>r</sub> = 10 mA
	HI.INT. GREEN	5	5	5		
	AlInGaP YELLOW	5	5	5		
DOMINANT WAVELENGTH	AlGaAs RED	638	638	638	nm	I <sub>f</sub> = 10 mA
	HI.INT. GREEN	569	569	569		
	AlInGaP YELLOW	595	595	595		

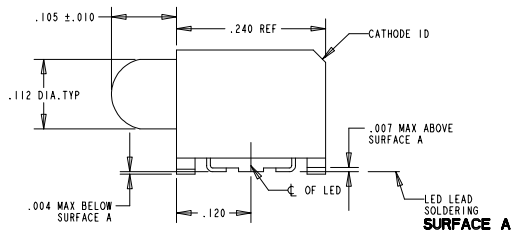
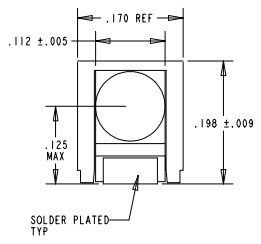
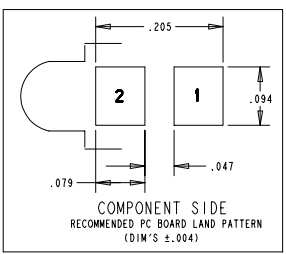
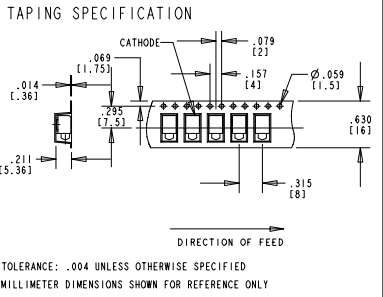
LED COLOR = HI.EFF. / RED - GREEN - YELLOW			
ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT			
PARAMETER	RED	GREEN	YELLOW
POWER DISSIPATION	95	95	95
CONTINUOUS FORWARD CURRENT	30	30	30
OPERATING TEMPERATURE	R-G-Y	-40 TO 100	-40 TO 100
STORAGE TEMPERATURE	R-G-Y	-40 TO 100	-40 TO 100

LED COLOR = RED (AlGaAs) GREEN (HI.INT.) YELLOW (AlInGaP)			
ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT			
PARAMETER	R-G-Y	UNITS	
POWER DISSIPATION	100	mW	
DERATE LINEARLY FROM 25°C	AlGaAs RED	0.8	mW/°C
	HI.INT. GREEN	0.6	mW/°C
	AlInGaP YELLOW	0.8	mW/°C
CONTINUOUS FORWARD CURRENT	AlGaAs RED	40	mA
	HI.INT. GREEN	30	mA
	AlInGaP YELLOW	50	mA
PEAK FORWARD CURRENT (1/10 DUTY CYCLE, 0.1 ms PULSE WIDTH)	AlGaAs RED	200	mA
	HI.INT. GREEN	120	mA
	AlInGaP YELLOW	160	mA
OPERATING TEMPERATURE	R-G-Y	-55 TO 100	°C
STORAGE TEMPERATURE	R-G-Y	-55 TO 100	°C
INFRARED REFLOW SOLDERING	R-G-Y	260°C FOR 5 SEC	
VAPOR PHASE SOLDERING	R-G-Y	215°C FOR 3 MIN	

LED COLOR = BLUE						
OPERATING CHARACTERISTICS AT 25°C AMBIENT						
CHARACTERISTICS	MIN	TYP	MAX	UNITS	TEST CONDITIONS	
LUMINOUS INTENSITY	6.0	6.0	6.0	mcd	I <sub>f</sub> = 10 mA	
FORWARD VOLTAGE	3.5	4.2	4.2	V	I <sub>f</sub> = 10 mA	
REVERSE CURRENT	0.01	10	10	µA	V <sub>r</sub> = 5 V	

LED COLOR = BLUE			
ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT			
PARAMETER	UNITS		
POWER DISSIPATION	100	mW	
DERATE LINEARLY FROM 55°C	0.44	mW/°C	
CONTINUOUS FORWARD CURRENT	20	mA	
OPERATING TEMPERATURE	-40 TO 100	°C	
STORAGE TEMPERATURE	-40 TO 100	°C	
SOLDER PROFILE: IR 235°C PEAK FOR 15 sec / 185°C FOR 90 sec MAX			

REV.	ECN NO.	REVISIONS	DRN.	CKD.	APP.	DATE
A		---	---	---	---	---
B		---	---	---	---	---
C		---	---	---	---	---
D		REDRAWN WITH CHANGES - NEW HSG AND LENS DESIGN - ADDED NOTE 6-8 - CHANGE LED CHARACTERISTICS	YY	---	NO	3-7-94
E		ADDED HI. GREEN AND CHANGE TO ANOTHER AlGaAs RED CHANGE NOTE 8	AV	DC	NO	3-8-00
F		ADD ... 2601... (BLUE) CORRECT HI.EFF. LED SPEC	AV	DC	NO	0-10-00
G		ADDED NOTE 10	YIS	JMC	NO	2-14-03
H		UPDATED LED SPEC. FOR HI.EFF. RED, GREEN & YELLOW	YIS			



- NOTES:
- 1- MILLIMETER DIMENSIONS SHOWN FOR REFERENCE ONLY
  - 2- PAD NUMBERS ARE FOR REFERENCE ONLY, DESIGNATION NON-EXISTENT ON PART
  - 3- STORAGE CONDITIONS FOR TAPED PRODUCT: RE-TAPING MAY BE NECESSARY FOR PRODUCTS STORED MORE THAN TWELVE MONTHS
  - 4- ORDER QUANTITY IS LED ASSEMBLIES - NOT REELS
  - 5- ...002 SUFFIX MEANS PARTS ARE PACKED ON A 20 pc SAMPLE STRIP
  - 6- ...007 SUFFIX MEANS PARTS ARE PACKED ON A 7 INCH REEL, 400 pcs/REEL
  - 7- ...013 SUFFIX MEANS PARTS ARE PACKED ON A 13 INCH REEL, 1600 pcs/REEL
  - 8- LENS MOVEMENT IN RELATIONSHIP TO THE HOUSING IS:
    - .009" T.I.R. VERTICALLY
    - .007" T.I.R. HORIZONTALLY
  - 9- FRONT AND REAR TERMINALS OF THE ASSEMBLY TO BE WITHIN .005 COPLANARITY
  - 10- LED LEAD FRAME MATERIAL:
    - CORE MATERIAL = COPPER
    - 1st PLATING = Ag-100µ, THICKNESS ABOUT 90 MICRO-INCH
    - 2nd PLATING = 90µ Sn - 10µ Pb, THICKNESS RANGE 200 TO 800 MICRO-INCH
  - 11- DIALIGHT PART NUMBERS = 591-2401-002 591-2401-007 591-2401-013
  - 12- DEVICE HAS A MOISTURE SENSITIVITY LEVEL "2" CAUTION LABEL APPLIED AS PER JEDEC STD. 033

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SCALE: 8:1	DRAWING NUMBER
ALL DIM'S IN: INCHES	C-15636
TOLERANCES: UNLESS OTHERWISE SPECIFIED	REV
FRACTIONS: ±.0104	H
DECIMALS (.XXX): ±.005	TITLE
DECIMALS (.XXXX): ±.002	SURFACE MOUNT CBI - ROUND LENS
ANGLES: ±.1°	MATERIAL
FINISH:	Dialight
FSCM 83330	1501 ROUTE 34 SOUTH FARMINGDALE, NJ 07727
	SHEET OF FAMILY TABLES: