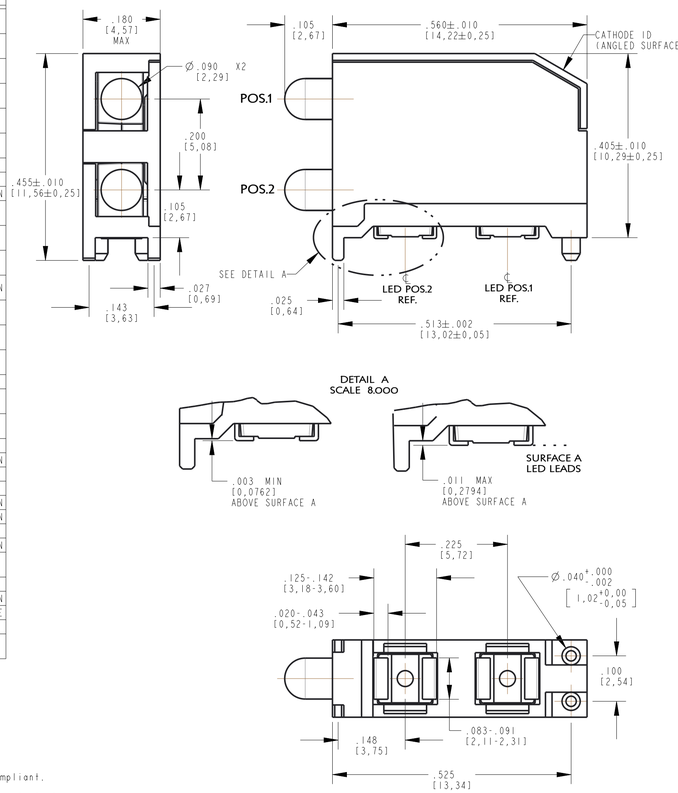
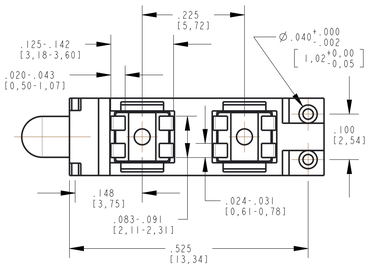
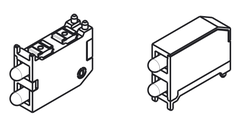
DIALIGHT PART NUMBER	PACKAGING	POSITION 1	POSITION 2
592-1010-313F	13" REEL	RED [2mA]	RED [2mA]
592-1313-313F	13" REEL	GREEN [2mA]	GREEN [2mA]
592-1314-313F	13" REEL	GREEN [2mA]	YELLOW [2mA]
592-1410-313F	13" REEL	YELLOW [2mA]	RED [2mA]
592-1414-313F	13" REEL	YELLOW [2mA]	YELLOW [2mA]
592-1515-313F	13" REEL	ORANGE [2mA]	ORANGE [2mA]
592-2126-413F	13" REEL	RED	BLUE
592-2326-413F	13" REEL	GREEN	BLUE
592-2436-313F	13" REEL	YELLOW	ORANGE/GREEN
592-2626-413F	13" REEL	BLUE [InGaN]	BLUE [InGaN]
592-2627-413F	13" REEL	BLUE [InGaN]	YELLOW
592-2628-413F	13" REEL	BLUE [InGaN]	WHITE
592-2631-413F	13" REEL	BLUE [InGaN]	YELLOW/GREEN
592-2727-313F	13" REEL	YELLOW [AlInGaP]	YELLOW [AlInGaP]
592-2729-313F	13" REEL	YELLOW [AlInGaP]	GREEN [InGaN]
592-2826-413F	13" REEL	WHITE	BLUE [InGaN]
592-2828-413F	13" REEL	WHITE	WHITE
592-2927-313F	13" REEL	GREEN [InGaN]	YELLOW [AlInGaP]
592-2929-313F	13" REEL	GREEN [InGaN]	GREEN [InGaN]
592-3030-313F	13" REEL	RED/GREEN	RED/GREEN
592-3031-313F	13" REEL	RED/GREEN	YELLOW/GREEN
592-3032-313F	13" REEL	RED/GREEN	RED/YELLOW
592-3034-313F	13" REEL	RED/GREEN	RED/BLUE
592-3036-313F	13" REEL	RED/GREEN	ORANGE/GREEN
592-3131-313F	13" REEL	YELLOW/GREEN	YELLOW/GREEN
592-3232-313F	13" REEL	RED/YELLOW	RED/YELLOW
592-3236-313F	13" REEL	RED/YELLOW	ORANGE/GREEN
592-3333-313F	13" REEL	YEL/GREEN [InGaN]	YEL/GREEN [InGaN]
592-3530-313F	13" REEL	RED/GRN/BLUE	RED/GREEN
592-3531-313F	13" REEL	RED/GRN/BLUE	YELLOW/GREEN
592-3535-313F	13" REEL	RED/GRN/BLUE	RED/GRN/BLUE
592-3728-413F	13" REEL	RED/GRN/BLUE	WHITE
592-4026-413F	13" REEL	TRUE GREEN (InGaN)	BLUE [InGaN]



++SINGLE COLOR LED ASSEMBLY++



++BI-COLOR LED ASSEMBLY++



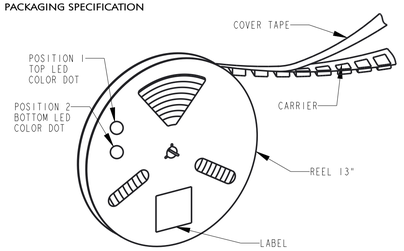
SCALE 2.000

RoHS COMPLIANT 592-XXXX-3XXF/4XXF

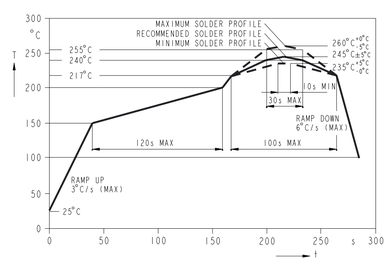
Part Numbers with the "F" suffix ending are RoHS Compliant.

Packaging is marked with "RoHS Compliant" label or equivalent markings. These parts can be used with RoHS reflow profile. Parts can be wave soldered, dip soldered or hand soldered using typical lead-free soldering process with max 260°C temp. for 5 sec.

13" REEL
PACKAGING SPECIFICATION



- 13" REEL PER EIA STANDARD 481-2
- QUANTITY = 300 Pcs/REEL IN VACUUM SEALED BAG
- LABEL AND COLOR DOTS ON REEL AND ON BAG
- LABEL TO INCLUDE P/N, QTY PER BAG, MFG DATE LED LOT NO., LED COLOR, LED BIN INTENSITY FOR BOTH LEDS AND "COUNTRY OF ORIGIN: MEXICO". CORNER OF LABEL ON REEL INDICATES MOISTURE SENSITIVITY LEVEL. ALUMINUM BARRIER BAG INCLUDES MSL LABEL.



RECOMMENDED RoHS COMPLIANT REFLOW PROFILE

NOTES :

1. DIALIGHT PART NUMBERS: 592-XXXX-3XXF/4XXF.
2. ...-313F/413F SUFFIX PARTS ARE SUPPLIED ON A 13 INCH REEL, 300 pcs/REEL
3. FRONT AND REAR TERMINALS (OF EACH LED) OF THE ASSEMBLY TO BE WITHIN .005" COPLANARITY.
4. STORAGE CONDITIONS FOR TAPED PRODUCT: RE-TAPING MAY BE NECESSARY FOR PRODUCT STORED MORE THAN TWELVE MONTHS.
5. PIN NUMBERS ARE FOR REFERENCE ONLY , DESIGNATION NON-EXISTENT ON PART.
6. MOISTURE SENSITIVITY LEVEL LABEL WILL BE PLACED ON BAG.
7. THIS ASSEMBLY CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE DEVICES (ESDS). MAINTAIN ALL PRECAUTIONARY MEASURES DURING ASSEMBLY, HANDLING, AND STORAGE IN ACCORDANCE WITH IPC-A-610.
8. FLAMMABILITY RATING HOUSING: UL-94-VO SILICONE LENS AND LED: UL-94HB

OPERATING CHARACTERISTICS AT 25°C AMBIENT - SINGLE COLOR LEDs

COLOR		LUMINOUS INTENSITY (mcd)		DOMINANT WAVELENGTH (nm)			PEAK WAVELENGTH (nm)	FORWARD VOLTAGE (V)		REVERSE CURRENT (µA)
		2mA	10mA					2mA		
#	DESCRIPTION	TYP		MIN	TYP	MAX	TYP	TYP	MAX	MAX
10	RED	3.8	9.8	624	630	636	643	1.8	2.2	10 @ Vr=12 V
13	GREEN	3.2	10.1	566	570	575	572	1.8	2.2	10 @ Vr=12 V
14	YELLOW	4.4	11.3	580	587	594	591	1.8	2.2	10 @ Vr=12 V
15	ORANGE	5.6	14.0	600	606	609	610	1.8	2.2	10 @ Vr=12 V

ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT - SINGLE COLOR LEDs

	COLOR				UNITS
	RED	GREEN	YELLOW	ORANGE	
POWER DISSIPATION	50	40	50	50	mW
PEAK FORWARD CURRENT (1/200 DUTY CYCLE, 10µs PULSE WIDTH)	100				mA
CONTINUOUS FORWARD CURRENT	20				mA
LINEAR DERATING AT MAX CURRENT (20mA)	0 (UNDER 100°C)				mA/°C
REVERSE VOLTAGE	12				V
LEAD REFLOW SOLDERING TEMPERATURE (FOR 5 SEC.)	260 (ALSO SEE GRAPH)				°C
OPERATING TEMPERATURE	-40 TO +100				°C
STORAGE TEMPERATURE	-40 TO +100				°C

OPERATING CHARACTERISTICS AT 25°C AMBIENT - SINGLE COLOR LEDs

COLOR		LUMINOUS INTENSITY (mcd)	TEST CURRENT (mA)	DOMINANT WAVELENGTH (nm)			PEAK WAVELENGTH (nm)	FORWARD VOLTAGE (V)		REVERSE CURRENT (µA)
#	DESCRIPTION	TYP		MIN	TYP	MAX	TYP	TYP	MAX	MAX
21	RED [AlGaAs]	9	10	—	645	—	660	1.75	2.5	10 @ Vr=12 V
23	GREEN	4	10	564	570	576	572	2.0	2.5	10 @ Vr=12 V
24	YELLOW	2	10	580	587	595	586	2.0	2.5	10 @ Vr=5 V
25	ORANGE	2	10	600	606	609	610	2.0	2.5	10 @ Vr=5 V
26	BLUE [InGaN]	88	10	465	470	475	—	2.8	3.5	10 @ Vr=5 V
27	YELLOW [AlInGaP]	60	20	580	587	595	591	2.0	2.4	10 @ Vr=12 V
28	WHITE	50	10	X=.281 Y=.247			—	2.7	3.1	10 @ Vr=5 V
29	GREEN [InGaN]	56	20	—	525	—	523	3.7	4.3	10 @ Vr=12 V

ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT SINGLE COLOR LEDs

	COLOR										UNITS
	RED [HI.EFF]	RED [AlGaAs]	GREEN	GREEN [HI.INT]	YELLOW	YELLOW [AlInGaP]	ORANGE	WHITE	BLUE [InGaN]	GREEN [InGaN]	
POWER DISSIPATION	95	90	95	95	95	80	95	91	100	114	mW
PEAK FORWARD CURRENT (1/200 DUTY CYCLE, 10µs PULSE WIDTH)	500	500	500	500	500	200	500	100	100	200	mA
CONTINUOUS FORWARD CURRENT	30	30	30	30	30	30	30	30	30	30	mA
LINEAR DERATING FROM 60°C, UNLESS OTHERWISE NOTED	0.75	0.75	0.75	0.75	0.75	1.0 (FROM 85°C)	0.75	0.67 (FROM 85°C)	0.55 (FROM 45°C)	0.42 (FROM 40°C)	mA/°C
REVERSE VOLTAGE	12	5	12	12	5	12	5	5	5	5	V
LEAD REFLOW SOLDERING TEMP (FOR 5 SEC.)	260										°C
OPERATING TEMPERATURE	-40 TO +100								-40 TO +85	-55 TO +100	°C
STORAGE TEMPERATURE	-40 TO +100									-55 TO +100	°C

OPERATING CHARACTERISTICS AT 25°C AMBIENT

#30 &31 COLOR		LUMINOUS INTENSITY @If = 10 mA (mcd)			FORWARD VOLTAGE @If = 2 mA (V)		REVERSE CURRENT (µA) V = 12V		DOMINANT WAVELENGTH (nm)			PEAK WAVELENGTH (nm)	
		MIN	TYP	MAX	TYP	MAX	TYP	MAX	MIN	TYP	MAX	TYP	MAX
RED/GRN	RED	—	11	—	1.8	2.2	0.01	10	624	630	636	643	
	GREEN	—	5	—					566	570	575	572	
YLW/GRN	YELLOW	—	14	—	1.8	2.2	0.01	10	580	587	595	591	
	GREEN	—	5	—					566	570	575	572	

ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT RED/GRN & YLW/GRN BI-COLOR LED

	RED/GRN	YLW/GRN	UNITS
CONTINUOUS FORWARD CURRENT	15		mA
REVERSE VOLTAGE	12		V
SURGE CURRENT	100		mA
PEAK SOLDERING TEMPERATURE	245		°C
OPERATING TEMPERATURE	-40 TO +100		°C
STORAGE TEMPERATURE	-40 TO +100		°C

OPERATING CHARACTERISTICS AT 25°C AMBIENT - RED/YELLOW BI-COLOR LED

#32 COLOR	LUMINOUS INTENSITY (mcd)	TEST CURRENT (mA)	DOMINANT WAVELENGTH (nm)			PEAK WAVELENGTH (nm)	FORWARD VOLTAGE (V)	
	TYP		MIN	TYP	MAX	TYP	TYP	MAX
RED	21	20	627	633	639	645	2.0	2.3
YELLOW	34	20	580	587	595	591	2.0	2.4

ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT - RED/YELLOW BI-COLOR LED

	RED	YELLOW	UNITS
POWER DISSIPATION	80	80	mW
PEAK FORWARD CURRENT (1/200 DUTY CYCLE, 10µs PULSE WIDTH)	1000	200	mA
CONTINUOUS FORWARD CURRENT	30	30	mA
LINEAR DERATING FROM 75°C	0.60	0.60	mA/°C
LEAD REFLOW SOLDERING TEMPERATURE (FOR 5 SEC.)	260		°C
OPERATING TEMPERATURE	-40 TO +100		°C
STORAGE TEMPERATURE	-40 TO +100		°C

OPERATING CHARACTERISTICS AT 25°C AMBIENT - YELLOW/GREEN BI-COLOR LED

#33 COLOR	LUMINOUS INTENSITY (mcd)	TEST CURRENT (mA)	DOMINANT WAVELENGTH (nm)			PEAK WAVELENGTH (nm)	FORWARD VOLTAGE (V)	
	TYP		MIN	TYP	MAX	TYP	TYP	MAX
YELLOW	145	20	585	—	595	—	1.8	2.4
GREEN	245	20	515	—	525	—	2.8	3.4

ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT - YELLOW/GREEN BI-COLOR LED

	YELLOW	GREEN	UNITS
POWER DISSIPATION	72	102	mW
PEAK FORWARD CURRENT (1/10 DUTY CYCLE, 10ms PULSE WIDTH)	125		mA
CONTINUOUS FORWARD CURRENT	20		mA
LEAD REFLOW SOLDERING TEMPERATURE (FOR 5 SEC.)	260		°C
OPERATING TEMPERATURE	-20 TO +80		°C
STORAGE TEMPERATURE	-40 TO +80		°C

OPERATING CHARACTERISTICS AT 25°C AMBIENT - RED/BLUE BI-COLOR LED

#34 COLOR	LUMINOUS INTENSITY (mcd)	TEST CURRENT (mA)	DOMINANT WAVELENGTH (nm)			PEAK WAVELENGTH (nm)	FORWARD VOLTAGE (V)	
	TYP		MIN	TYP	MAX	TYP	TYP	MAX
RED	21	10	620	625	630	—	1.9	2.2
BLUE	24	10	465	467	470	—	3.0	3.2

ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT - RED/BLUE BI-COLOR LED

	RED	BLUE	UNITS
PEAK FORWARD CURRENT (1/10 DUTY CYCLE, 10ms PULSE WIDTH)	100		mA
CONTINUOUS FORWARD CURRENT	30		mA
LINEAR DERATING FROM 80°C	1.0		mA/°C
LEAD REFLOW SOLDERING TEMPERATURE (FOR 5 SEC.)	260		°C
OPERATING TEMPERATURE	-40 TO +100		°C
STORAGE TEMPERATURE	-40 TO +100		°C

OPERATING CHARACTERISTICS AT 25°C AMBIENT - RED/GRN/BLUE TRI-COLOR LED

#35 COLOR	LUMINOUS INTENSITY (mcd)	TEST CURRENT (mA)	DOMINANT WAVELENGTH (nm)			PEAK WAVELENGTH (nm)	FORWARD VOLTAGE (V)	
	TYP		MIN	TYP	MAX	TYP	TYP	MAX
RED	31	20		626		635	1.9	2.4
GREEN	84	20		525		523	3.4	4.1
BLUE	16	20		470		468	3.4	4.1

ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT - RED/GRN/BLUE TRI-COLOR LED

	RED	GREEN	BLUE	UNITS
POWER DISSIPATION	72	120	120	mW
CONTINUOUS FORWARD CURRENT	30	20	20	mA
LINEAR DERATING FROM 80°C (★BLUE & GREEN FROM 70°C) 1 CHIP ON	1.00	★0.50	★0.50	mA/°C
LINEAR DERATING FROM 65°C (★BLUE & GREEN FROM 50°C) 3 CHIPS ON	0.75	★0.30	★0.30	mA/°C
LEAD REFLOW SOLDERING TEMPERATURE (FOR 5 SEC.)	260			°C
OPERATING TEMPERATURE	-55 TO +100			°C
STORAGE TEMPERATURE	-55 TO +100			°C

OPERATING CHARACTERISTICS AT 25°C AMBIENT - ORANGE/GREEN BI-COLOR LED

#36 COLOR	LUMINOUS INTENSITY (mcd)	TEST CURRENT (mA)	DOMINANT WAVELENGTH (nm)			PEAK WAVELENGTH (nm)	FORWARD VOLTAGE (V)	
	TYP		MIN	TYP	MAX	TYP	TYP	MAX
ORANGE	3	10	600	606	612	610	2.0	2.5
GREEN	4	10	564	570	576	572	2.0	2.5

ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT - ORANGE/GREEN BI-COLOR LED

	ORANGE	GREEN	UNITS
POWER DISSIPATION	95	95	mW
PEAK FORWARD CURRENT (1/200 DUTY CYCLE, 10µs PULSE WIDTH)	500	500	mA
CONTINUOUS FORWARD CURRENT	30	30	mA
LINEAR DERATING FROM 55°C	0.66	0.66	mA/°C
LEAD REFLOW SOLDERING TEMPERATURE (FOR 5 SEC.)	260		°C
OPERATING TEMPERATURE	-40 TO +100		°C
STORAGE TEMPERATURE	-40 TO +100		°C

OPERATING CHARACTERISTICS AT 25°C AMBIENT - RED/GRN/BLUE TRI-COLOR LED

#37 COLOR	LUMINOUS INTENSITY (mcd)	TEST CURRENT (mA)	DOMINANT WAVELENGTH (nm)			PEAK WAVELENGTH (nm)	FORWARD VOLTAGE @ IF = 10mA	
	TYP		MIN	TYP	MAX	TYP	MIN	MAX
RED	52	10	615		630	—	1.8	2.4
GREEN	210	10	518		530	—	2.8	3.6
BLUE	34	10	465		475	—	2.8	3.6

ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT - RED/GRN/BLUE TRI-COLOR LED

	RED	GREEN	BLUE	UNITS
POWER DISSIPATION	75	108	108	mW
CONTINUOUS FORWARD CURRENT	30	30	30	mA
LINEAR DERATING FROM 40°C	.11	—	—	mA/°C
LINEAR DERATING FROM 45°C	—	0.36	—	mA/°C
LINEAR DERATING FROM 50°C	—	—	.40	°C
OPERATING TEMPERATURE	-40 TO +85			°C
STORAGE TEMPERATURE	-40 TO +100			°C

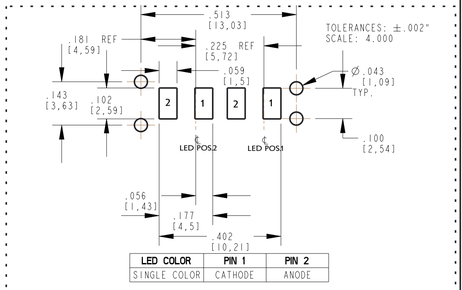
OPERATING CHARACTERISTICS AT 25°C AMBIENT - GREEN SINGLE COLOR LED

#40 COLOR	LUMINOUS INTENSITY (mcd)	TEST CURRENT (mA)	DOMINANT WAVELENGTH (nm)			PEAK WAVELENGTH (nm)	FORWARD VOLTAGE @ IF = 5mA	
	TYP		MIN	TYP	MAX	TYP	TYP	MAX
GREEN	192	10	520	525	530	—	2.8	3.5

ABSOLUTE MAXIMUM RATINGS AT 25°C AMBIENT - GREEN SINGLE COLOR LED

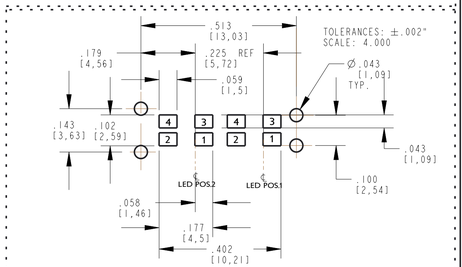
	GREEN	UNITS
PEAK FORWARD CURRENT (1/10 DUTY CYCLE, 10ms PULSE WIDTH)	100	mA
CONTINUOUS FORWARD CURRENT	30	mA
POWER DISSIPATION	100	mA/°C
OPERATING TEMPERATURE	-40 TO +85	°C
STORAGE TEMPERATURE	-40 TO +100	°C

REV	REVISIONS	DRN	CKD	APP	DATE
A	NEW RELEASE	JTD	KLJ	NO	12-14-11
B	CORRECT LED POSITION	JTD	KLJ	NO	1-10-12
C	NOTE 8 ADDED	WFB	JTD	NO	6-11-12
D	ADDED P/N's 592-3024-302F,-313F	MMB	WFB	JTD	5-28-13
E	CHANGED MSL VALUE OF P/N 5923535302/313 TO 2a	VP	WFB	NO	6-9-15
F	UPDATED DOCUMENT TO SHOW DIRECTION OF CBI IN A TAPE	VP	JTD	NO	4-8-16
G	ADDED P/N'S 592-2729-302F, 313F., ALSO UPDATED LED SPECS FOR R/G AND Y/G BI-COLOR LED'S	BP	—	NO	8-11-17
H	UPDATED Y/G PAD LAYOUT	LD	—	SK	8-10-18
I	UPDATED THE WHOLE MULTI-COLOR PADLAYOUT CHART	LD	—	SK	8-14-18
J	CORRECTED THE PREVIOUS UPDATE FOR THE PAD LAYOUT CHART	LD	—	SK	8-21-18
K	ADDED THE FOLLOWING P/N ★SOME P/Ns ARE FROM C17954 592-1010-302F, 592-1010-313F, 592-1313-302F, 592-1313-313F, 592-1314-302F, 592-1314-313F, 592-1410-302F, 592-1410-313F, 592-1414-302F, 592-1414-313F, 592-1515-302F, 592-1515-313F, 592-2135-302F, 592-2135-313F, 592-2429-302F, 592-2429-313F, 592-2929-302F, 592-2929-313F, 592-3032-302F, 592-3032-313F, 592-3036-302F, 592-3036-313F, 592-3520-302F, 592-3520-313F, 592-3528-302F, 592-3528-313F, 592-3530-302F, 592-3530-313F, 592-3531-302F, 592-3531-313F.	LD	—	NO	1-15-19
L	ADDED P/N 592-2122-302F/313F 592-2221-302F/313F	LD		NO	1-31-20
M	REMOVED ALL P/N WITH 002F SUFFIX, REMOVED P/N 592-2020-31XF, 592-2023-31XF, 592-2121-31XF, 592-2124-31XF, 592-2126-31XF, 592-2135-31XF, 592-2320-31XF, 592-2323-31XF, 592-2324-31XF, 592-2326-31XF, 592-2420-31XF, 592-2422-31XF, 592-2423-31XF, 592-2424-31XF, 592-2429-31XF, 592-2525-31XF, 592-2626-31XF, 592-2627-31XF, 592-2628-31XF, 592-2631-31XF, 592-2826-31XF, 592-2828-31XF, 592-3024-31XF, 592-3126-31XF, 592-3520-31XF, 592-3528-31XF, ADD P/N 592-2126-413F,592-2326-413F 592-2626-413F, 592-2627-413F, 592-2628-413F, 592-2631-313F, 598-2826-413F, 598-2828-413F, 598-4026-413F, 592-3126-413F, 592-3333-313F, UPDATED BLUE AND WHITE SPEC, REVISED NOTE 2 & 6, REMOVED MSL LEVEL	LD		CS	5-21-24



LED COLOR	PIN 1	PIN 2
SINGLE COLOR	CATHODE	ANODE

RECOMMENDED PAD LAYOUT - SINGLE COLOR



LED COLOR	PIN 1	PIN 2	PIN 3	PIN 4
• RED/YELLOW	RED CATHODE	RED ANODE	YELLOW ANODE	YELLOW CATHODE
• YELLOW/GREEN	YELLOW CATHODE	YELLOW ANODE	GREEN ANODE	GREEN CATHODE
• RED/GREEN	RED CATHODE	RED ANODE	GREEN ANODE	GREEN CATHODE
• RED/BLUE	RED CATHODE	RED ANODE	BLUE ANODE	BLUE CATHODE
• ORANGE/GREEN	ORANGE CATHODE	ORANGE ANODE	GREEN ANODE	GREEN ANODE
•R/G/B TRI-COLOR	RED CATHODE	COMMON ANODE	GREEN CATHODE	BLUE CATHODE

RECOMMENDED PAD LAYOUT - MULTI-COLOR

ATTENTION:
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

SCALE: 6.000
DRAWING NUMBER: C-17882
REV: N
TOLERANCES: UNLESS OTHERWISE SPECIFIED
FRACTIONS: ±1/64
DECIMALS (.XX): ±.02
DECIMALS (.XXX): ±.015
ANGLES: ±1°
FINISH: -
MATERIAL: -
TITLE: BI-LEVEL PRISM RoHS COMPLIANT
FSCM 83330
SHEET 1 OF 1
FAMILY TABLE:

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