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Products > LEDs > Surface Mount > Ceramic > 1210 Package

### Features / Options

### Applications / Uses

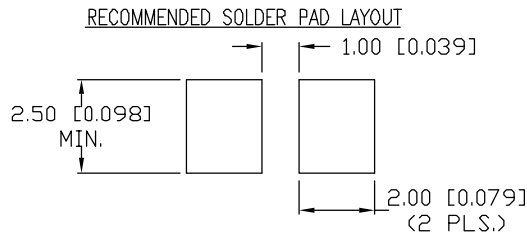
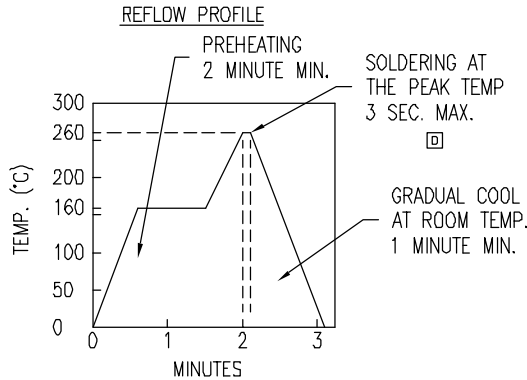
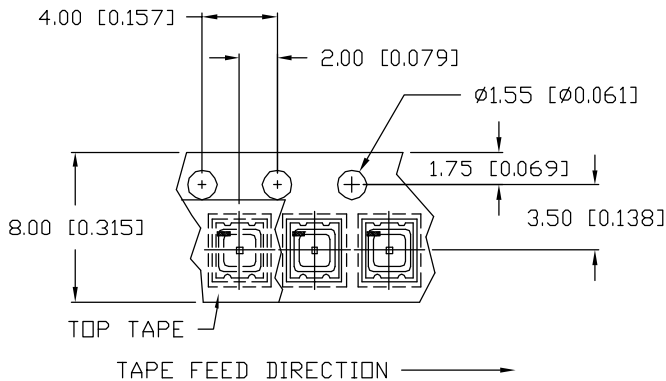
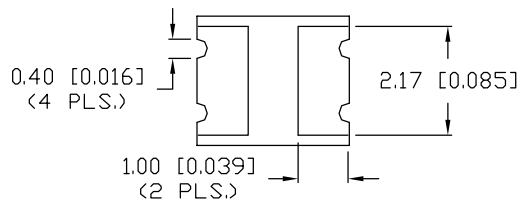
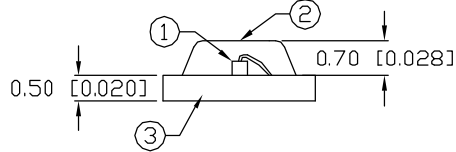
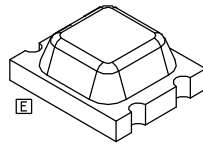
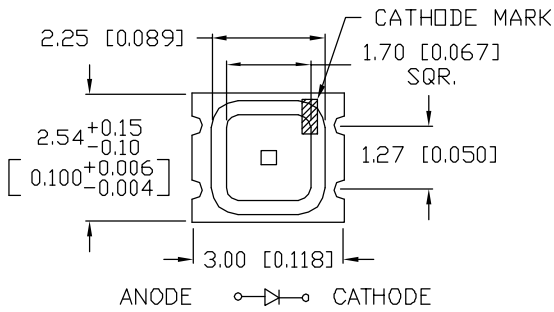


- ▶ State-of-the-Art, High Brightness Chip Technology
- ▶ Choice of Colors and Lens Finishes
- ▶ Lead Frame / Lens Casting Reliability
- ▶ Easy-to-Solder Leads, Tin Finish
- ▶ Available Bulk or on Tape and Reel
- ▶ Lead Trimming and Forming Available
- ▶ Custom Shapes, Easily Tooled, Low Minimum

- ▶ Board or Panel Indication or Illumination
- ▶ Annunciator and Control Panels
- ▶ Telecom Switches and Central Station Equipment
- ▶ Large Panel Indicators

Part Number:	Brightness	Dice Material	Emitted Color	Peak Wavelength	Epoxy Lens	Operating Typ Vf (V)	Intensity Typ, mcd @ 20 mA	View Angle 2x Theta		
CCL-CRS10SA		AlInGaP	Amber	605	Clear	2.2	60	180		—
CCL-CRS10SG		AlInGaP	Green	570	Clear	2.2	50	180		—
CCL-CRS10SR		GaAlAs	Red	660	Clear	1.8	30	180		—
CCL-CRS10SY		AlInGaP	Yellow	590	Clear	2.2	70	180		—
CCL-CRS10UPG		InGaN/SiC	Green	525	Clear	3.5	70	180		—
CCL-CRS10USB		InGaN/SiC	Blue	470	Clear	3.5	20	180		—

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- NOTES:
- PART SUPPLIED ON SUPER 8 TAPE AND REEL, 3,000 PIECES PER REEL.
  - THE CATHODE IS ORIENTED TOWARDS THE TAPE SPROCKET HOLE.
  - WHITE CERAMIC CARRIER.

CAUTION: MOISTURE SENSITIVE DEVICE PER JEDEC LEVEL 4 STANDARDS

PART NUMBER  
CCL-CRS10SR

REV.  
F

REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	REDRAWN.	4.27.00
B	CORRECTED DIMS.	3.20.95
C	E.C.N. #10390 & #10BRDR & REDRAWN.	10.2.98
D	E.C.N. #10484. ADDED SOLDER SPECS.	12.11.98
E	E.C.N. #10695. & REDRAWN IN 3D.	12.28.00
F	E.C.N. #10967.	3.14.03

ELECTRO-OPTICAL CHARACTERISTICS  $T_A=25^\circ\text{C}$   $I_f=20\text{mA}$

PARAMETER	MIN	TYP	MAX	UNITS	TEST COND
PEAK WAVELENGTH		660		nm	
FORWARD VOLTAGE		1.7	2.2	$V_f$	
REVERSE VOLTAGE	3.0			$V_r$	$I_f=100\mu\text{A}$
AXIAL INTENSITY		40		mcd	$I_f=20\text{mA}$
VIEWING ANGLE		180		$2x$ theta	
EMITTED COLOR:	RED				
EPOXY LENS FINISH:	WATER CLEAR				

LIMITS OF SAFE OPERATION AT  $25^\circ\text{C}$  PER CHIP

PARAMETER	MAX	UNITS
PEAK FORWARD CURRENT*	60	mA
STEADY CURRENT	15	mA
POWER DISSIPATION	45	mW
DERATE FROM $25^\circ\text{C}$	- .33	mW/ $^\circ\text{C}$
OPERATING TEMP.	-30 TO +75	$^\circ\text{C}$
STORAGE TEMP.	-40 TO +85	$^\circ\text{C}$

\*  $t < 10\mu\text{s}$

SOLDER HEAT PROOF TEST:	DIPPING FOR 5 SEC. AT $250^\circ\text{C}$ , 2 TIMES.
THERMAL SHOCK TEST:	15 MIN. AT $+90^\circ\text{C}$ , AND 15 MIN. AT $-30^\circ\text{C}$ , 25 CYCLES.
VIBRATION TEST:	50Hz, FULL AMPLITUDE WIDTH; 1.5mm, 2 HOURS VERTICALLY AND HORIZONTALLY, RESPECTIVELY.
MOISTURE TEST:	$T_a=60^\circ\text{C}$ , $R_h=90\%$ , 1,000 HOURS.
IRON SOLDERING:	20W IRON (SHARP TIP), $280-320^\circ\text{C}$ , 5 SEC. MAX.,
SOLDER DIP METHODE:	TEMP. IS $240-260^\circ\text{C}$ AND TIME IS WITHIN 10 SEC.
RE-FLOW SOLDERING:	SEE CHART.

UNCONTROLLED DOCUMENT

\*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN.=+DECIMAL PRECISION -0.00 MAX.=+0.00 -DECIMAL PRECISION

REV.	PART NUMBER
F	CCL-CRS10SR
3.0mm x 2.5mm CERAMIC SURFACE MOUNT LED, 660nm SUPER RED LED, WATER CLEAR LENS.	

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RELIABILITY NOTE  
OUR MANY YEARS OF EXPERIENCE DATA ACCUMULATION INDICATE THAT SOLDER HEAT IS A MAJOR CAUSE OF EARLY AND FUTURE FAILURE. PLEASE PAY ATTENTION TO YOUR SOLDERING PROCESS.

DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE: 5.20.97
CT			PAGE: 1 OF 1
			SCALE: N/A