



PART NUMBER		REV.
CCL-CRS10SR/G		H
REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	REDRAWN.	4.27.93
B	CHANGED AXIAL INTENSITY.	1.14.94
C	E.C.N. #10390 & #10BRDR & REDRAWN.	10.2.98
D	E.C.N. 104B4. ADDED SOLDER PROFILE	12.11.98
E	E.C.N. #10695. & REDRAWN IN 3D.	1.12.01
F	E.C.N. #10967.	3.14.03
G	E.C.N. #11271.	9.15.05
H	E.C.N. #11148.	01.19.07

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

PARAMETER	MIN	TYP	MAX	UNITS	TEST COND
PEAK WAVELENGTH		660 (RED)		nm	
		565 (GREEN)		nm	
FORWARD VOLTAGE (R/G)		1.7/2.0	2.3/2.6	$V_f$	
REVERSE VOLTAGE (R/G)	3.0/4.0			$V_r$	$I_f=100\mu\text{A}$
AXIAL INTENSITY (R/G)		8/12		mcd	$I_f=20\text{mA}$
VIEWING ANGLE		180		$2x$ theta	
EMITTED COLOR:	RED/GREEN				
EPOXY LENS FINISH:	WATER CLEAR				

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

PARAMETER	COLORS	MAX	UNITS
PEAK FORWARD CURRENT*	(R/G)	60/100	mA
STEADY CURRENT	(R/G)	15/25	mA
POWER DISSIPATION	(R/G)	45/65	mW
DERATE FROM $25^{\circ}\text{C}$	(R/G)	-0.13/0.33	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 METHOD:	TEMP. IS $240-260^{\circ}\text{C}$ AND TIME IS WITHIN 10 SEC.
RE-FLOW SOLDERING:	SEE CHART.

\*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), XX=±0.5 (±0.020), XXX=±0.25 (±0.010), XXXX=±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
H	CCL-CRS10SR/G
3.0mm x 2.5mm CERAMIC SURFACE MOUNT LED, RED & GREEN LEDS, 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.

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DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
JC			7.21.97
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			SCALE: N/A