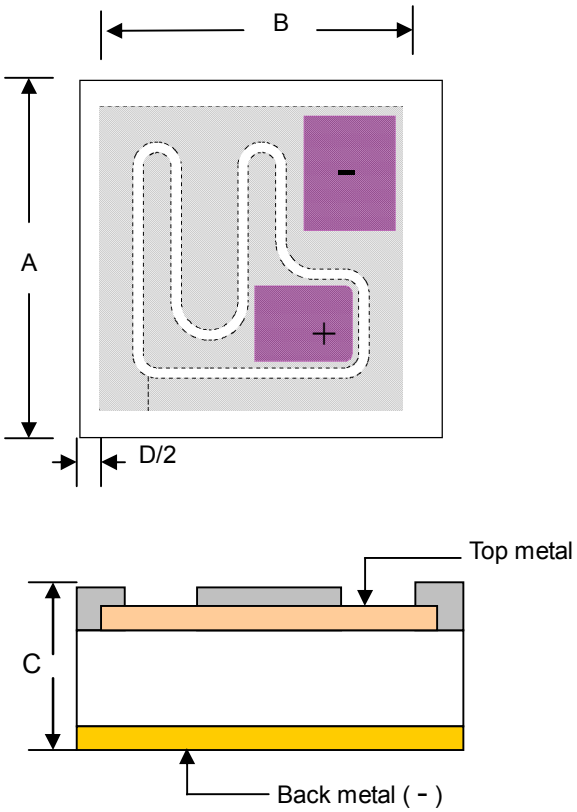
CRD Current Regulative Diode (Preliminary)

CRD supplies a constant current, under a specified range of power supply voltage and/or load impedance fluctuation, to an electric circuit, which makes circuit design more efficient, cost-effective and simpler.



Item	Dimensions	
	um	mil
Die Size（A）	460	18.1
Die Size（B）	400	15.7
Top Metal (Al)	550	21.6
Top Metal Pad- size	120x151	4.7x5.9
Top Metal Pad+ size	129x100	5.1x3.9
Wafer Thickness（C）	200	8
Scribe Line Width（D）	60	2.36
Other Information		
Wafer Size	6”	
Gross Die	75000	
Back Side Metal	Ag	

Characteristics

Working Voltage Range：5V~190V
LOW Active Voltage
Negative Temperature Coefficient

Applications

The purpose of CRD constant current is to support and stabilize LED illumination in lighting power，which is an advantage alternative way to switching mode design. This application has been widely applied to LED power such as LED tube lighting，LED street light，LED bulbs, etc.

Specifications (Electrical Characteristics @TA=25°C)

Wafer Part No.	Pinch-Off Current I_P @ V=20V		Knee Voltage V_K	Max. Voltage Loading V_B max	Junction & Storage Temp. T_J , T_{stg}	Top Metal
	min	max	V_K @ $0.8I_{Pmin}$	V_B@$1.1I_{Pmax}$	Range	
	[mA]	[mA]	Max [V]	[V]	[℃]	
CPC18S010DL	8	12	4.0	190	-55~150	Al
CPC18S015DL	12	18	5.0	190	-55~150	Al
CPC18S020DL	16	24	5.5	190	-55~150	Al
CPC18S025DL	22.5	27.5	6.0	190	-55~150	Al
CPC18S030DL	27	33	6.5	190	-55~150	Al
CPC18S040DL	36	44	7.5	190	-55~150	Al
CPC18S050DL	45	55	8.5	190	-55~150	Al
CPC18S060DL	54	66	9.5	190	-55~150	Al

Simple CRD Design Rule reminding：

(1) The max. loading of CRD circuit design should not exceed listed loading limitation to ensure safety concern in application. When designed max. power loading exceeds allowed standard, serious damages could be caused to CRD's.

(2) When T_a goes up, the Vf of LED will drop and simultaneously lead to higher LED voltage loading; consequently, practical reliability tests and essential design modifications are highly recommended to ensure safety issues, before any designed circuits are prepared for mass production.