

Current Regulative Diode

Surface Mount : 10~80mA

DESCRIPTION

CRD is diode which supplies constant current to an electric circuit, even when power supply voltage fluctuations or load impedance fluctuations Configuration occur. CRD is used for current stabilization and current limiting.

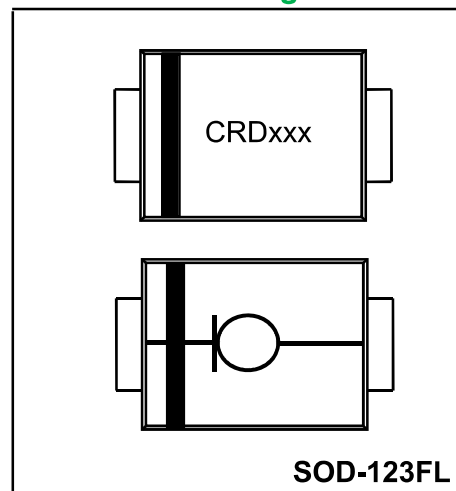
FEATURES

- ◆Silicon technology
- ◆Low power loss
- ◆high efficiency
- ◆Eliminate voltage overshoot
- ◆Epoxy resin package
- ◆Will not fatigue
- ◆RoHS Compliant

MECHANICAL DATA

- ◆Package: SOD-123FL
- ◆Lead Finish: Matte Tin
- ◆Case Material: Epoxy Molding Compound.
- ◆UL Flammability Classification Rating 94V-0
- ◆Moisture Sensitivity: Level 1 per J-STD-020

Pinning



Absolute Maximum Ratings

Paramete	Symbol	Value	Units
Operating Temperature Range	T_J	-55 to 150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Part Number	Marking Code	Pinch-Off Current $I_P @ V=20\text{V}$		Active Voltage V_K	Max. Voltage Loading $V_B \text{ max}$	Max. Power Loading P_D
		min	max	$V_K @ 0.8I_{Pmin}$	$V_B @ 1.1I_{Pmin}$	max
		[mA]	[mA]	Max [V]	[V]	[w]
CRD010D	010D	8	12	3.0	190	0.5
CRD015D	015D	12	18	3.2	190	0.5
CRD020D	020D	16	24	3.5	190	0.5
CRD025D	025D	22.5	27.5	4.0	190	0.5
CRD030D	030D	27	33	4.8	190	0.5
CRD035D	035D	31.5	38.5	5.2	190	0.5
CRD040D	040D	36	44	6.0	190	0.5
CRD050D	050D	45	55	6.5	190	0.5
CRD060D	060D	54	66	7.0	190	0.5
CRD080D	080D	72	88	8.0	190	0.5

Ratings And Characteristics Curves(Ta=25℃, Unless Otherwise Noted)

FIG.1:Regulator Current vs Temperature

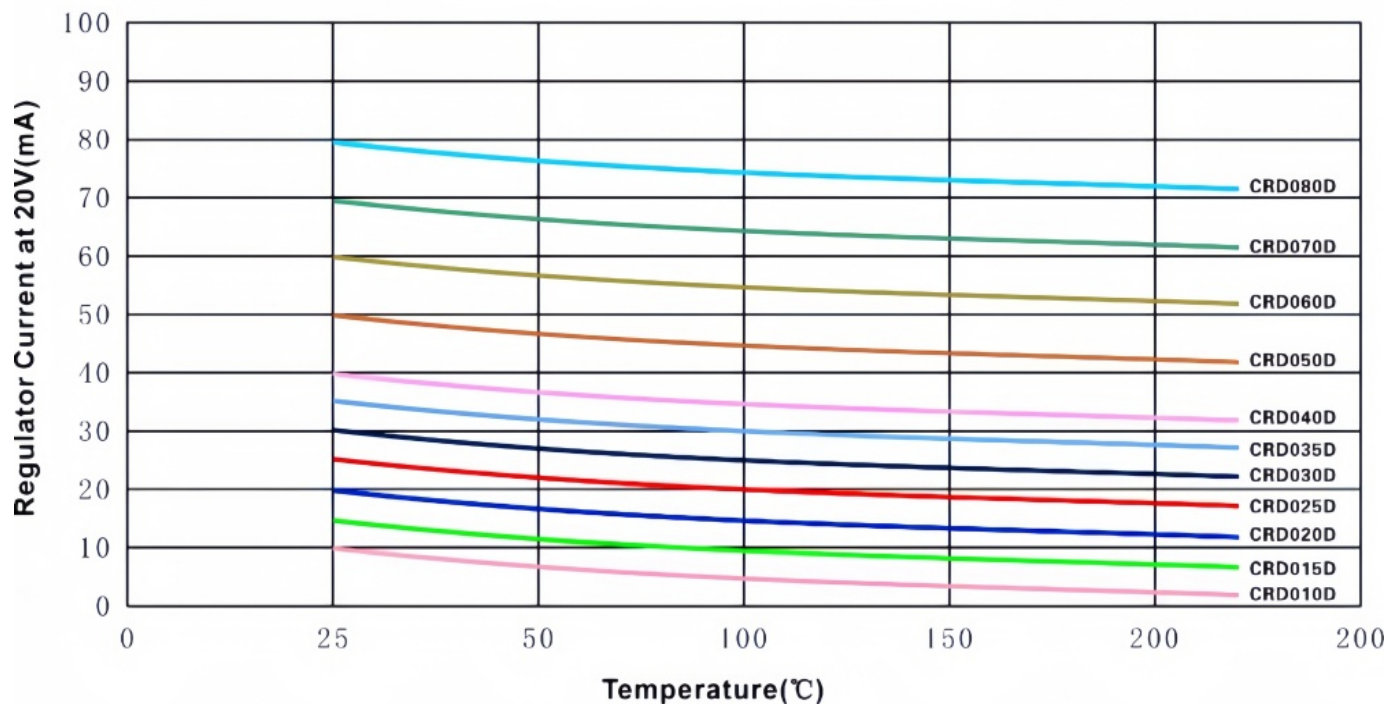
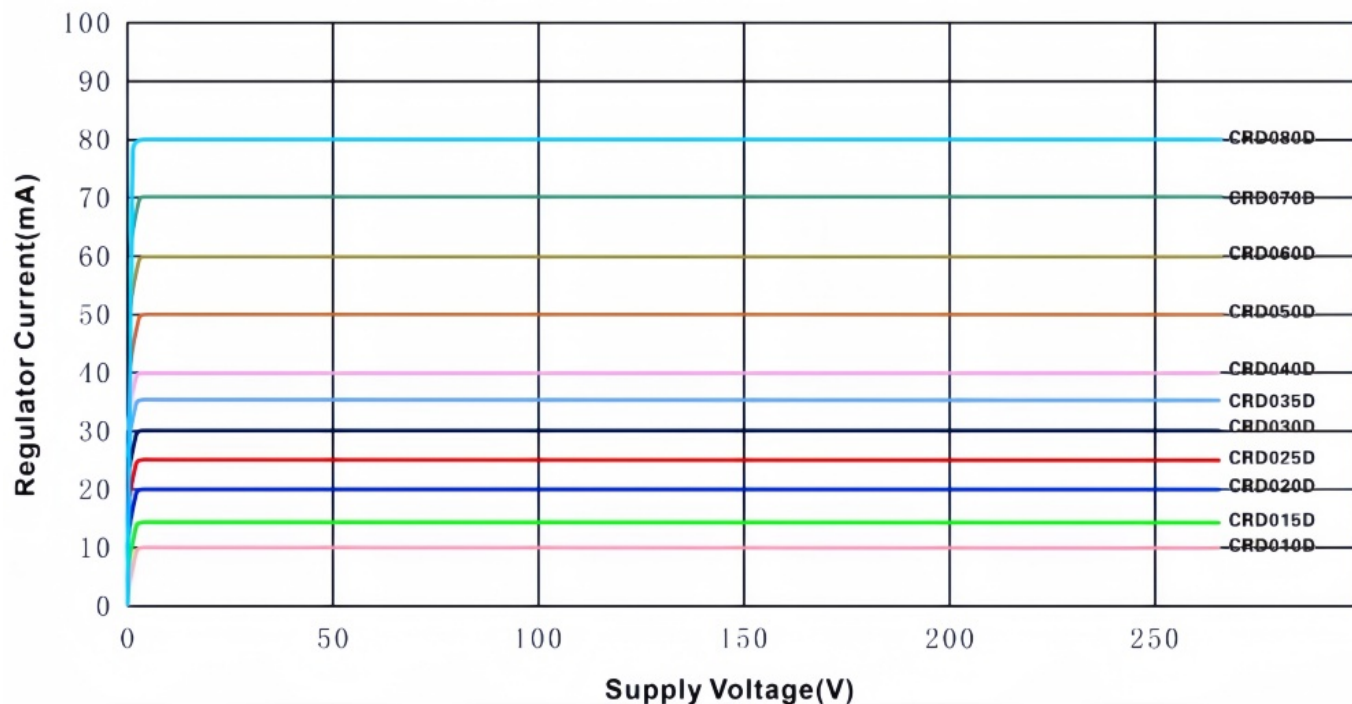
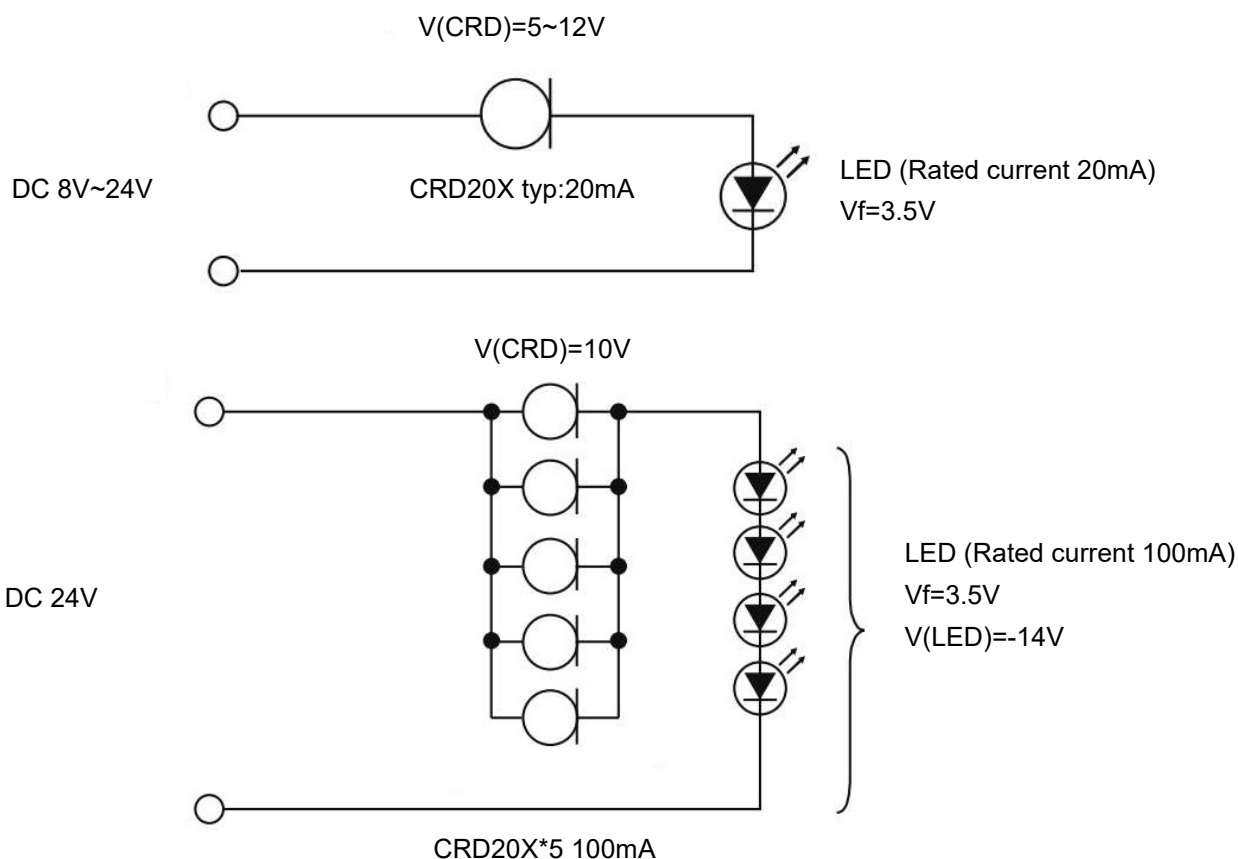


FIG.2:Regulator Current vs Supply Voltage



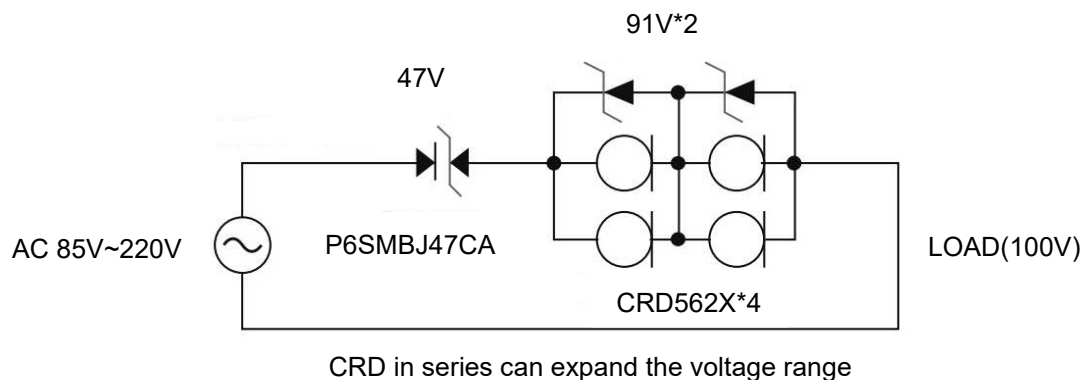
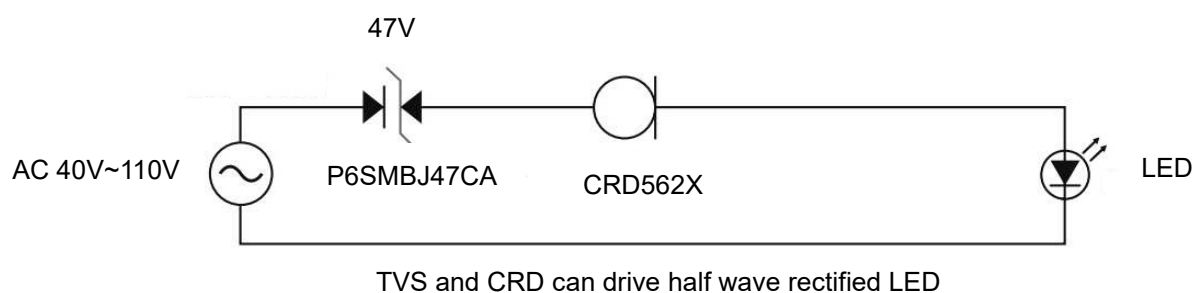
CRD Application Circuits

1.Current supply circuit for LED brightness stabilization (DC power supply)



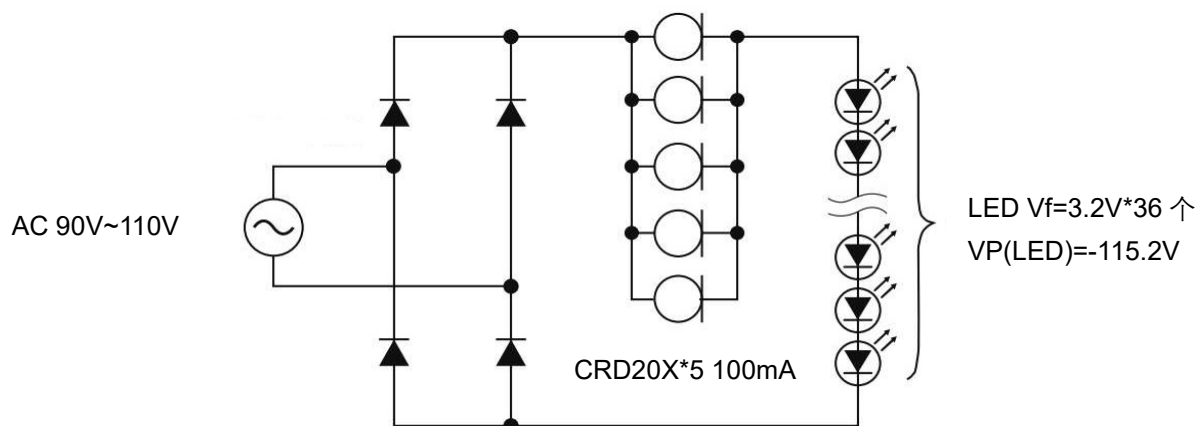
(AC power supply)

(1) Half wave rectification



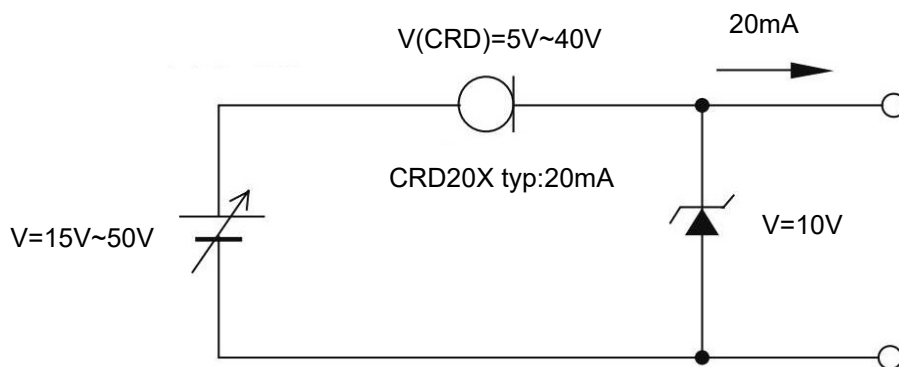
(2) Full wave rectifier circuit

$V(\text{CRD})=12\text{V}\sim 40\text{V}$

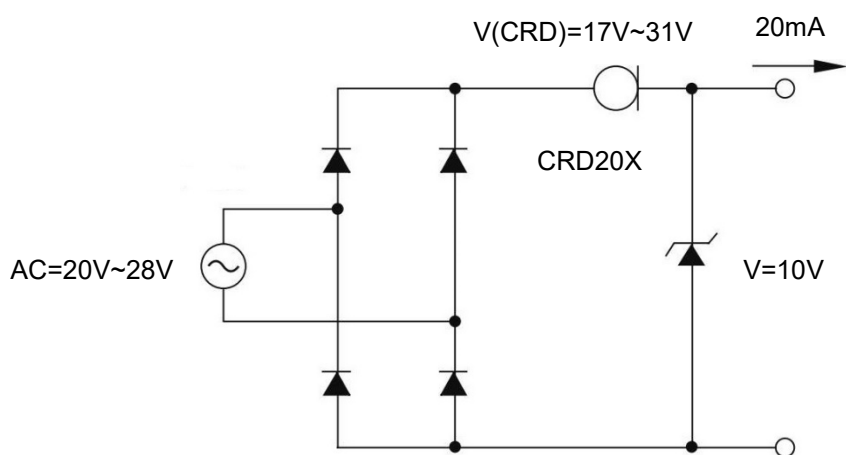


2. Constant voltage circuit

(1) Combination of Zener diode and CRD

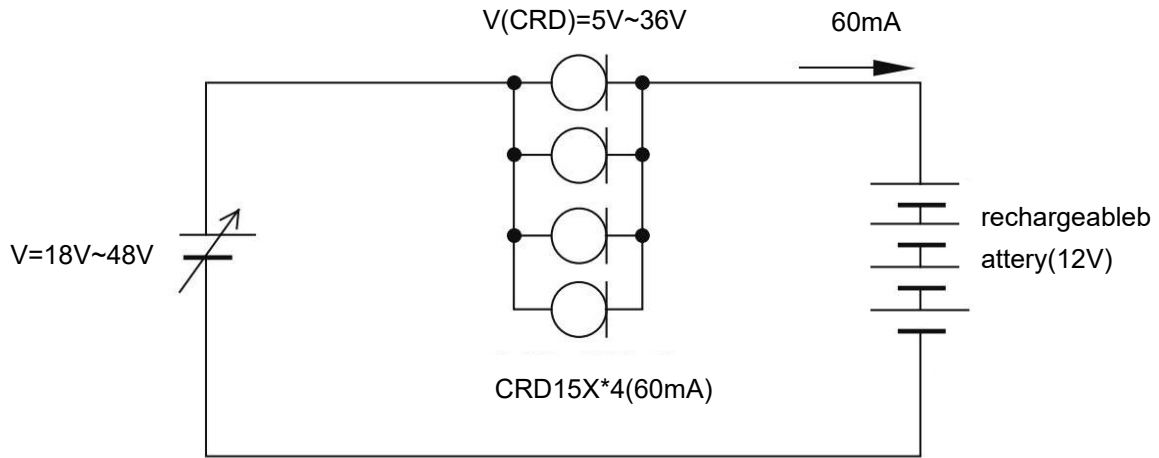


(2) Simple AC / DC converter

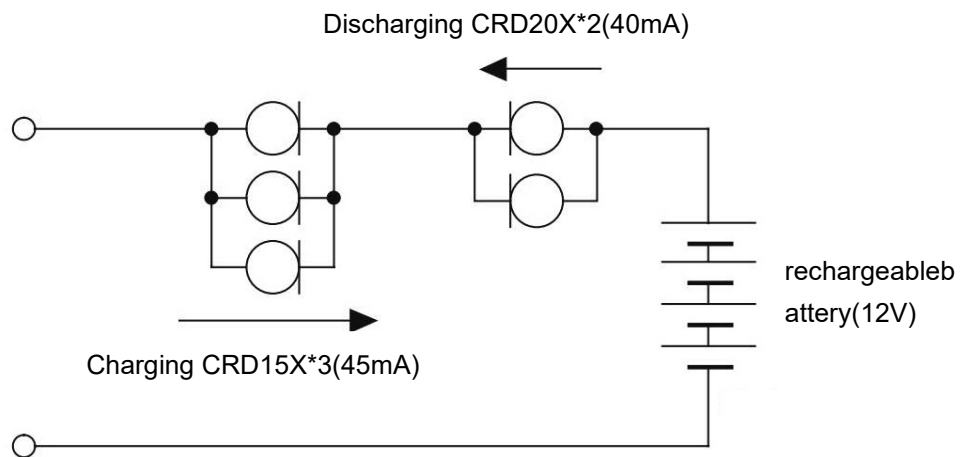


3. Charge discharge circuit

(1) Current charging circuit

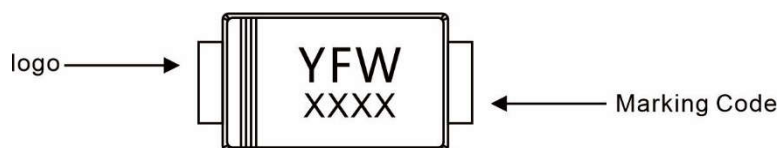


(2) Battery charging and discharging current limiting circuit



By changing the number of CRDs in parallel, the charging /discharging current can be changed respectively

Marking Diagram



Ordering information

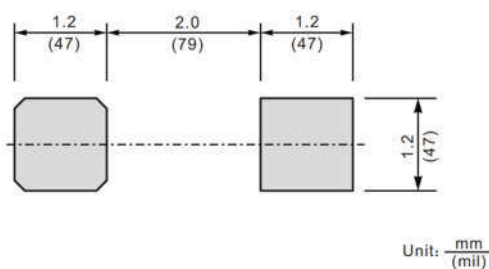
Package	Packing Description	Packing Quantity
SOD-123FL	Tape/Reel, 7" reel	3000PCS/Reel 120000PCS/Carton

Package Dimensions

SOD-123FL

Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.3	35	43
C	0.12	0.20	4.7	7.9
D	2.6	2.9	102	114
E	1.7	1.9	67	75
e	0.8	1.1	31	43
g	0.7	0.9	28	35
HE	3.5	3.8	138	150
∠	7°			

The recommended mounting pad size



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