

**Current Regulative Diode**  
**Surface Mount - 15-80mA**

**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.

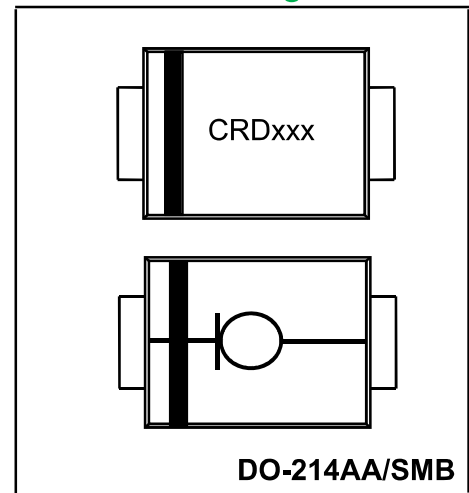
**Features**

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

**MECHANICAL DATA**

- ◆ Package: SMB
- ◆ 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**

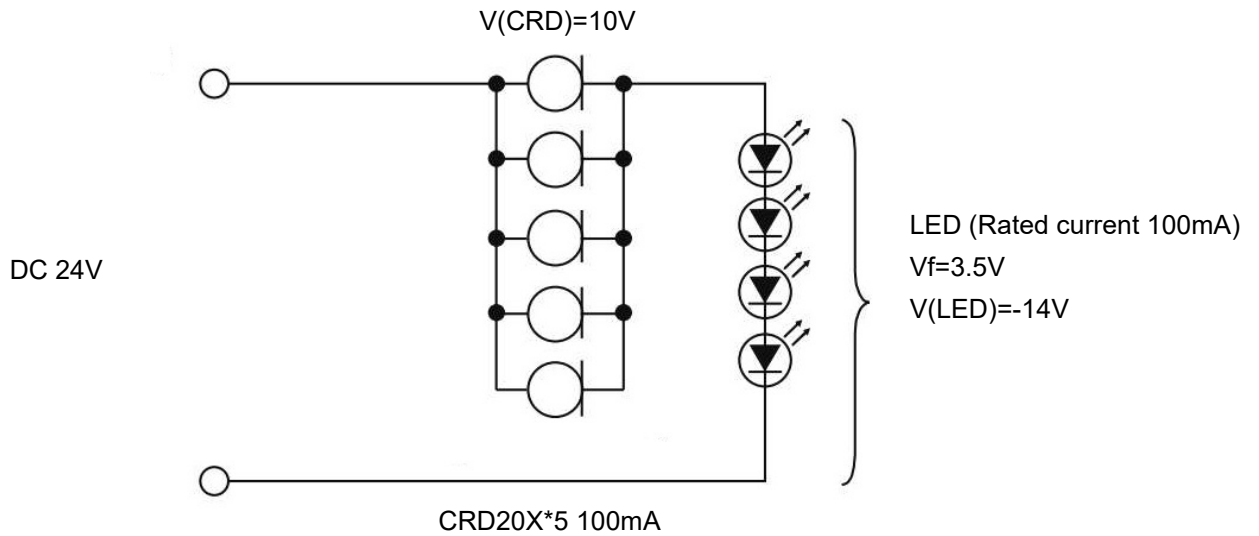
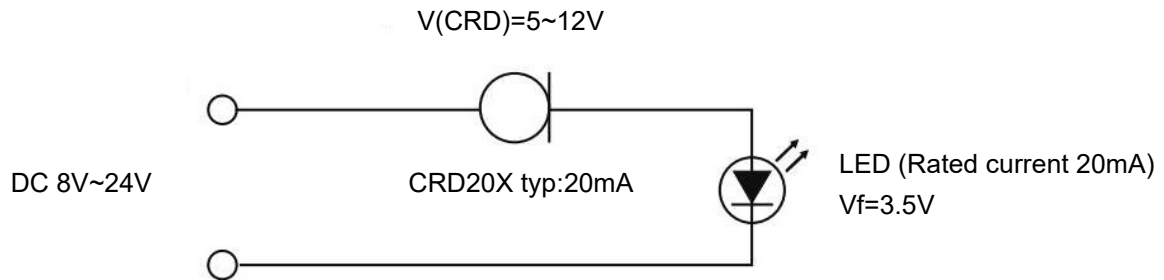
Paramete	Symbol	Value	Units
Operating Temperature Range	T <sub>J</sub>	-55 to 150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to 150	°C

**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

Part Number	Marking Code	Pinch-Off Current  p@ V=20V		Active Voltage VK	Max. Voltage Loading VB max	Max. Power Loading Pd
		min	max	V <sub>k</sub> @ 0.8I <sub>p</sub> min	V <sub>B</sub> @ 1.1I <sub>p</sub> max	max
		[mA]	[mA]	Max [V]	[V]	[W]
CRD015B	015B	12	18	3.2	190	1.2
CRD020B	020B	16	24	3.5	190	1.2
CRD025B	025B	22.5	27.5	4.0	190	1.2
CRD030B	030B	27	33	4.8	190	1.2
CRD035B	035B	31.5	38.5	5.2	190	1.2
CRD040B	040B	36	44	6.0	190	1.2
CRD050B	050B	45	55	6.5	190	1.2
CRD060B	060B	54	66	7.0	190	1.2
CRD080B	080B	72	88	8.0	190	1.2

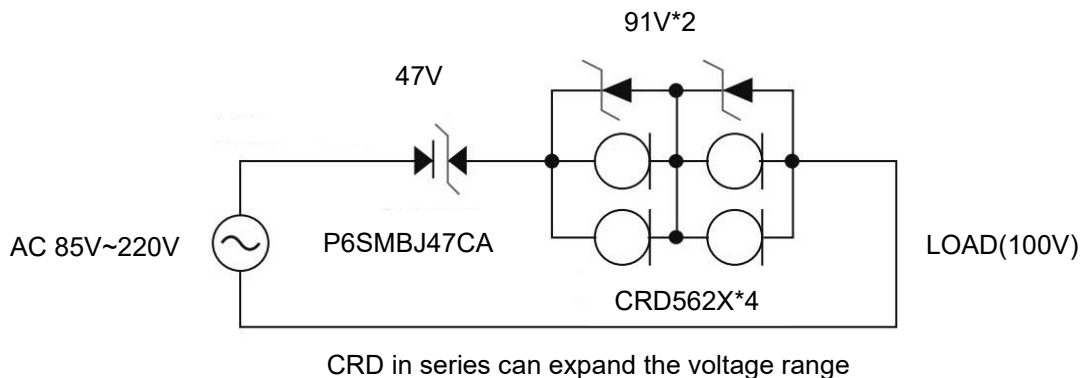
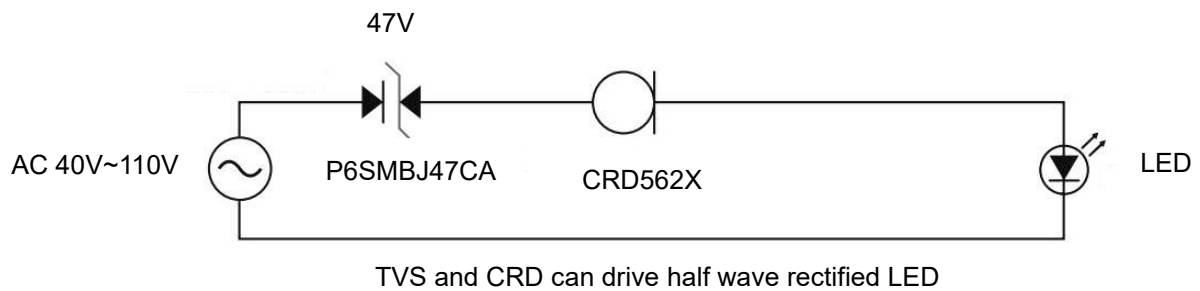
**CRD Application Circuits**

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

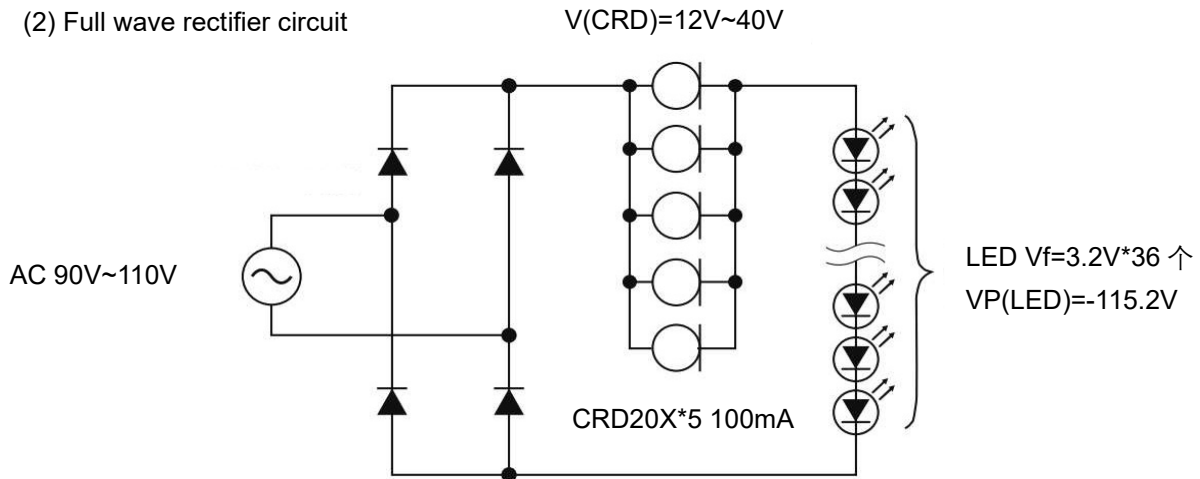


(AC power supply)

(1) Half wave rectification

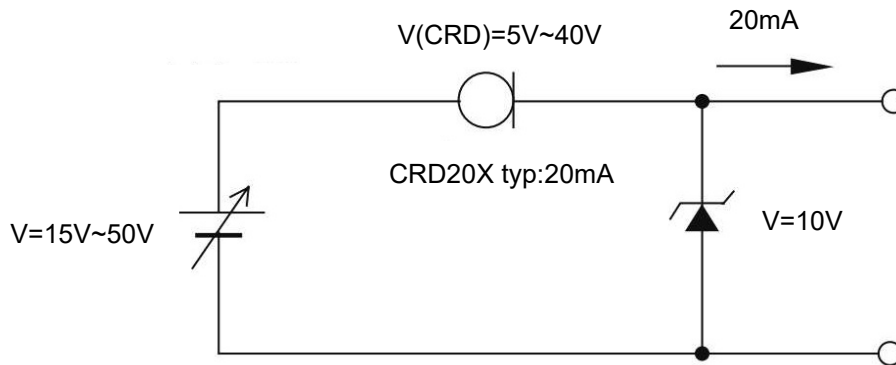


(2) Full wave rectifier circuit

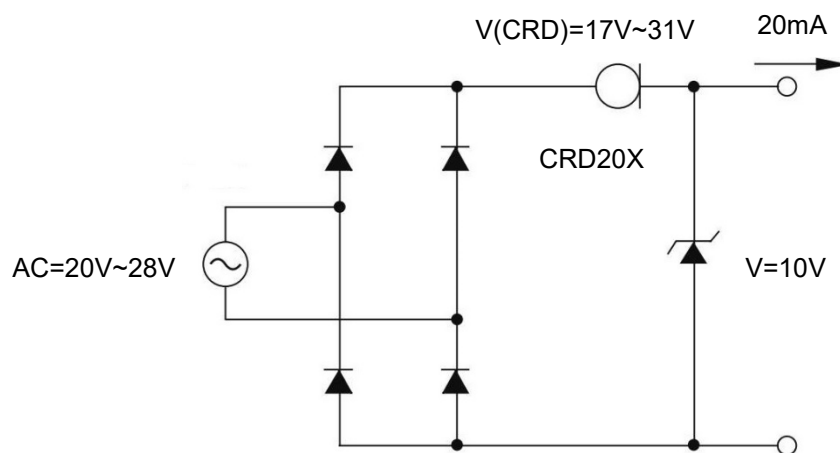


## 2. Constant voltage circuit

(1) Combination of Zener diode and CRD

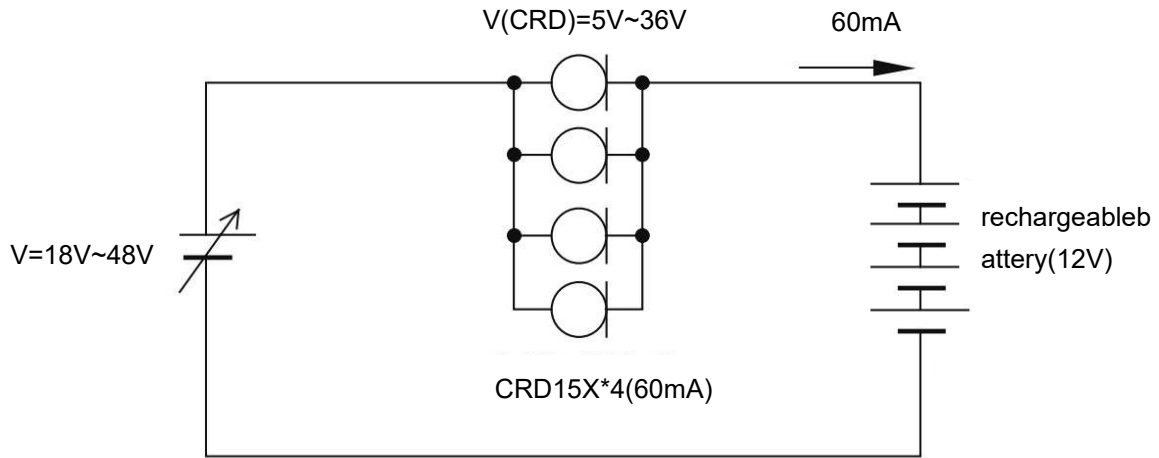


(2) Simple AC / DC converter

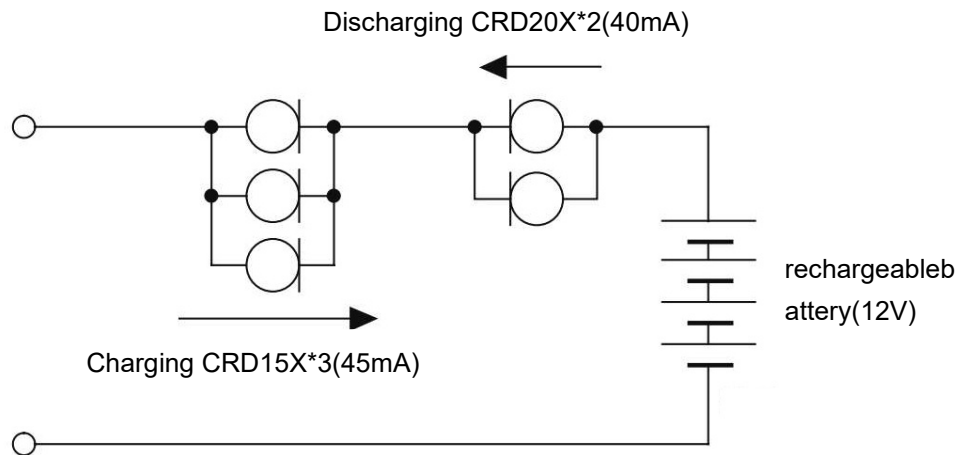


**3. Charge discharge circuit**

(1) Current charging circuit

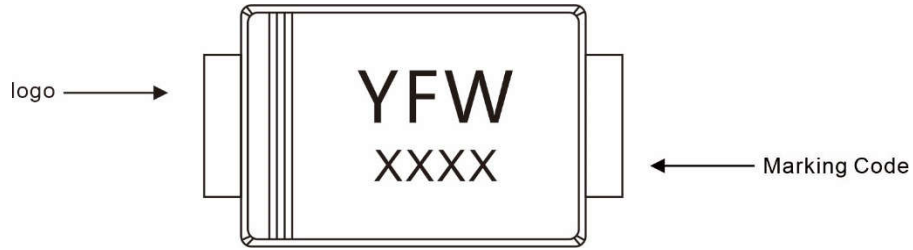


(2) Battery charging and discharging current limiting circuit



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

Marking Diagram



Ordering information

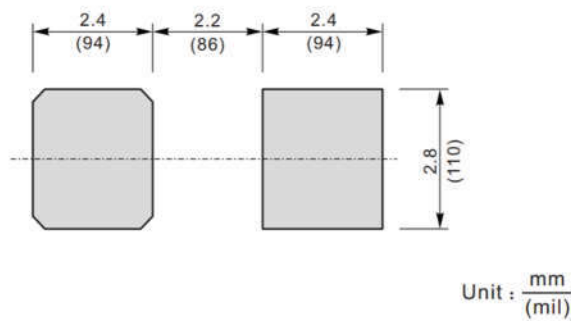
Package	Packing Description	Packing Quantity
DO-214AA SMB	Tape/Reel, 13" reel	3000PCS/Reel 30000PCS/Carton

Package Dimensions

DO-214AA SMB

Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	2.13	2.44	84	96
E	4.06	4.70	160	185
D	3.3	3.94	130	155
E <sub>1</sub>	5.08	5.59	200	220
A <sub>1</sub>	0.05	0.20	2.0	7.9
L	0.8	1.5	32	59
C	0.152	0.305	6	12
b	1.9	2.2	75	87

The recommended mounting pad size



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