

RoHS & REACH Compliant

## CMJA5050

### 50V, 50-80mA Adjustable Current Limiting Diode in the DFN123F package



Central Semiconductor's **CMJA5050** is a 50V Current Limiting Diode (CLD) developed to meet design requirements for maintaining a constant current with adjustable current regulation from 50mA to 80mA. This adjustable device eliminates the need to use multiple CLDs in order to meet the current regulation values required. Packaged in the low profile DFN123F surface mount case, this device is ideal for any application requiring a space saving current regulating device, including LED lighting and test/measurement equipment.

### Features

- Constant current range
- Adjustable regulation up to 80mA
- Wide operating voltage
- Negative temperature coefficient for LED protection

### Applications

- LED lighting and displays
- AC lighting panels
- Decorative lighting
- Test and measurement equipment

### Benefits

- Eliminates need for additional regulation
- Space savings
- Low profile package
- RoHS and REACH compliant

Steady State Regulator Current*			Maximum Limiting Voltage	Maximum Temperature Coefficient**
$I_L @ V_T=12V$			$V_L @ I_L=0.8 \times I_p \text{ MIN}$	TC
MIN mA	NOM mA	MAX mA	V	mA/°C
45	50	55	8.5	-0.3

Pulsed Regulator Current*			Maximum Limiting Voltage	Maximum Temperature Coefficient**
$I_p @ V_T=20V$			$V_L @ I_L=0.8 \times I_p \text{ MIN}$	TC
MIN mA	NOM mA	MAX mA	V	mA/°C
72	80	88	8.0	-0.3

\*Measured after applying DC test voltage for 90 seconds duration or greater with device mounted on FR-4 PC Board with 2oz. copper mounting pad area of 300mm<sup>2</sup> in still air.

\*\*Measured between 25°C and 50°C.

\*Pulse width  $\leq 1.0\text{ms}$

\*\*Measured between 25°C and 50°C.

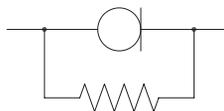
#### Adjustment Compensation Resistance:

Placing resistors in parallel with a CLD allows the regulator current to be adjusted from 50mA to 80mA. This also corrects any current decrease when the applied voltage increases due to self heating.

#### REGULATOR CURRENT PER RESISTANCE:

Steady State Regulator Current			Resistor (1/4W)
$I_L @ V_T=12V$			$\Omega$
MIN mA	NOM mA	MAX mA	$\Omega$
45	50	55	none***
49.5	55	60.5	1000
54	60	66	800
58.5	65	71.5	600
67.5	75	82.5	500
72	80	88	400

\*\*\*A 3000 $\Omega$  resistor may be added to achieve more linear regulator current characteristics.



#### Custom solutions also available:

- custom device development
- special wafer diffusions
- custom interconnect options
- packaging options
- specialized parametric testing
- up-screening to MIL standard equivalents or to customer-specific criteria

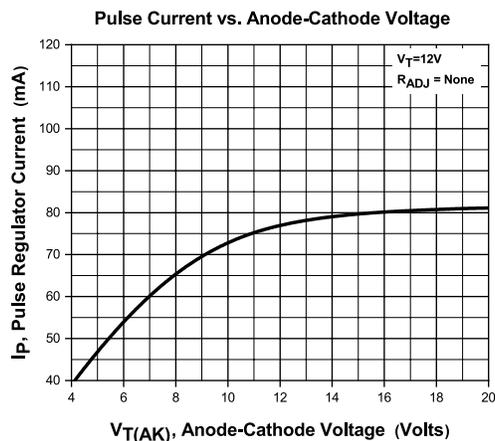
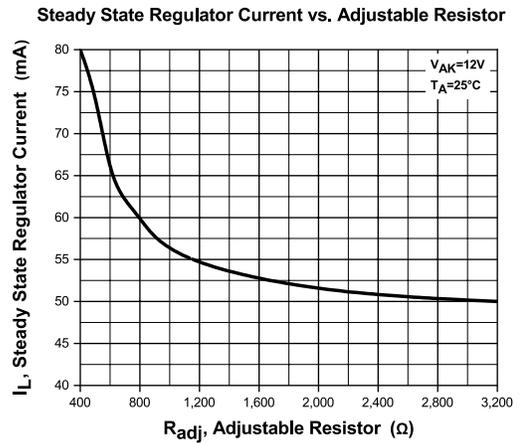
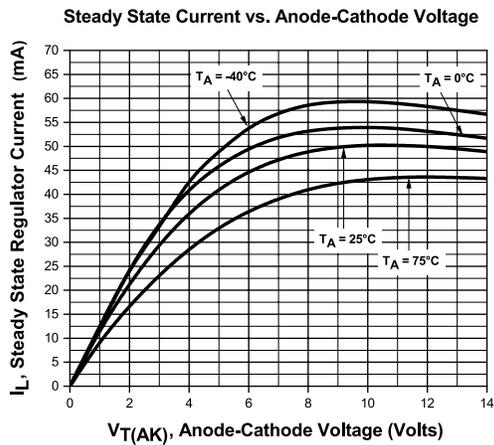
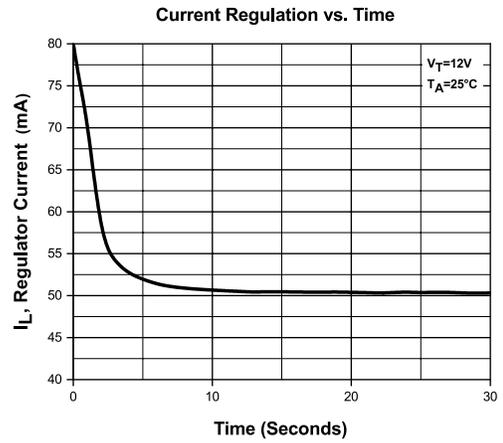
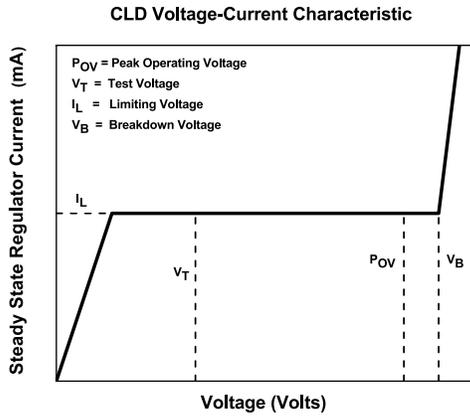
#### SPICE Models, Package Details and other technical resources:

Engineering resources are available at [www.centalsemi.com](http://www.centalsemi.com).

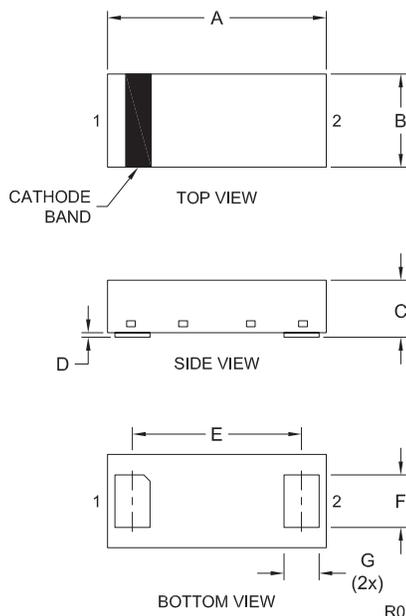
#### RoHS and REACH compliance declarations

Visit the Quality section of Central's website to access.

## TYPICAL ELECTRICAL CHARACTERISTICS



### Mechanical Drawing: DFN123F

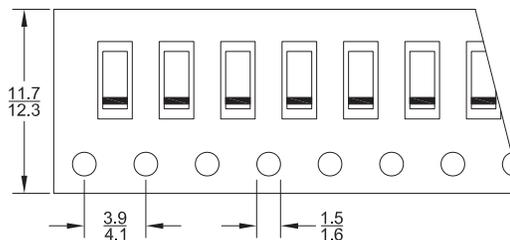


DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.144	0.152	3.65	3.85
B	0.059	0.067	1.50	1.70
C	0.031	0.039	0.80	1.00
D	0.000	0.002	0.00	0.05
E	0.110	0.118	2.80	3.00
F	0.033	0.037	0.85	0.95
G	0.020	0.028	0.50	0.70

DFN123F (REV: R0)

**Part Marking:** 4-6 Character Alpha/Numeric Code

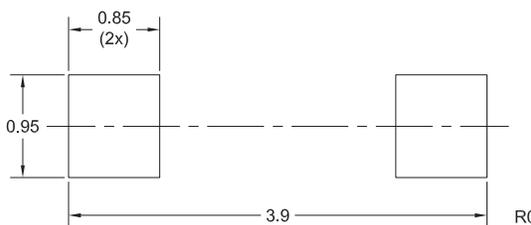
### Tape Dimensions and Orientation (Dimensions in mm)



Devices are taped in accordance with Electronic Industries Association Standard EIA-481-D

Tape Width: 12mm

### Mounting Pad Geometry (Dimensions in mm)



### Packaging Base

Reel Size	Quantity
7"	3,000 pcs.
13"	10,000 pcs.

### Reel Packing Information

Reel Size	Reels per Box (Maximum)	Parts per Box (Maximum)	Box Dimensions		Shipping Weight (Max.)	
			INCH	CM	LB	KG
7"	9	27,000	9x9x5	23x23x13	7	4
	18	54,000	9x9x9	23x23x23	14	7
	40	120,000	21x9x9	53x23x23	30	14
	108	324,000	27x9x17	69x23x43	78	36
13"	5	25,000	15x4x15	38x10x38	7	4
	14	70,000	15x15x9	38x38x23	17	8
	26	130,000	15x15x18	38x38x46	30	14

### Ordering Information

Reel Size	Orderable Part No.	Marking Code
7"	Add "TR" as suffix to Central part no. (example: CMJA5050 TR)	CA50
13"	Add "TR13" as suffix to Central part no. (example: CMJA5050 TR13)	

For more information on Central's products and solutions:

Call us at: **1.631.435.1110**

Or view online: [www.centrasemi.com/featured-products](http://www.centrasemi.com/featured-products)

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