

CMJA5050 Adjustable Current Limiting Diode in the DFN123F package



Rethink the Possibilities[™]

Discretes do Matter™

CMJA5050 Current Limiting Diode

New Adjustable Current Limiting Diode



DFN123F





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New CMJA5050

Rethink the Possibilities[™]

- Market Drivers:
 - Cost effective regulated current source
 - Small package outline
 - Test and measurement end-markets
 - Solid State Lighting (SSL) end-markets
 - Medical end-markets
- **Competitive Solution**
 - Central's solution has a smaller package outline
 - Central's solution has a lower profile
 - Central's solution has a high 50 volt capability
- 50V with 50mA to 80mA adjustable range ٠











Current Limiting Diodes

Current Limiting Diodes

DFN123F

FEATURES

- Provides constant current
- Adjustable regulation currents (50mA -80mA)
- Industry standard DFN package

APPLICATIONS

- Solid State Lighting (SSL)
- Test equipment
- Security devices and Industrial controllers

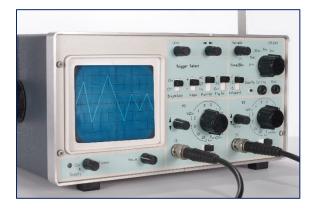
BENEFITS

- Efficient regulation of current source
- Replaces the need for several different
 discrete devices to create current regulation

CURRENT STATUS

lectronica

- The CMJA5050 will be available Q1-2021
- Sample available upon request







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

Pulsed Regulator

Current*

Ip @ VT=20V

NOM

mA

80

*Pulse width <1.0ms

MIN

mA 72 MAX

mA

88

**Measured between 25°C and 50°C.

Benefits

- Eliminates need for additional regulation
- · Space savings

Maximum Limiting

Voltage

VL @ IL=0.8 x IP MIN

ν

8.0

- · Low profile package
- · RoHS and REACH compliant

Maximum Temperature Coefficient**

TC

mA/°C

-0.3

Ste Regul	ady St ator Cu			Maximum Temperature Coefficient**
IL (@ V _T =1	2V	V _L @ I _L =0.8 x I _P MIN	тс
MIN mA	NOM mA	MAX mA	v	mA/°C
45	50	55	8.5	-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 300mm² in still air.

**Measured between 25°C and 50°C.



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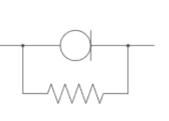


Adjustment Compensation Resistance:

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:

Re	Resistor (1/4W)		
MIN mA	NOM mA	MAX mA	Ω
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

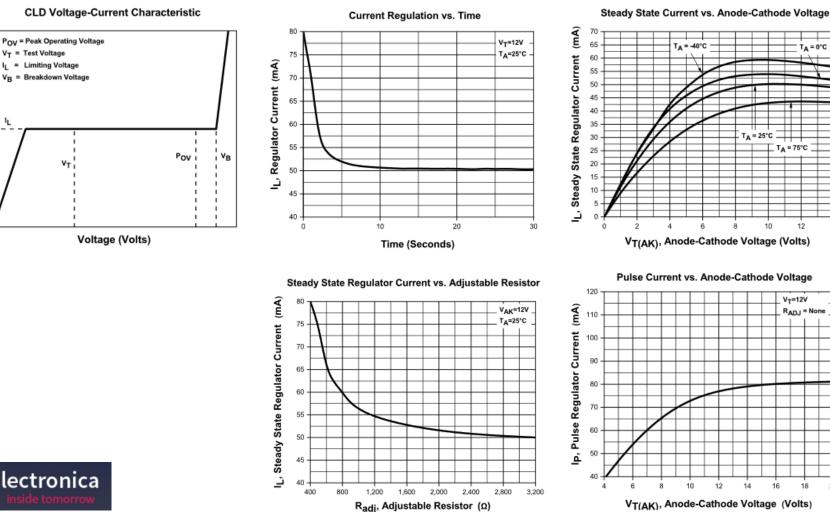


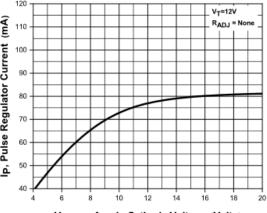
***A 3000 Ω resistor may be added to achieve more linear regulator current characteristics.













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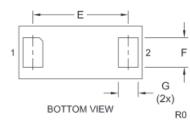
Current Limiting Diodes

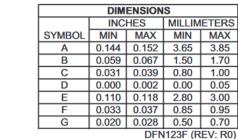
New CMJA5050



Mechanical Drawing: DFN123F А В 2 CATHODE TOP VIEW BAND

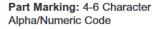




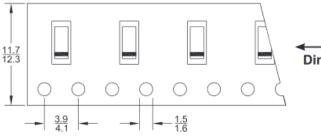


(Dimensions in mm)





Tape Dimensions and Orientation Devices are taped in Electronic Industries



Direction of Unreeling

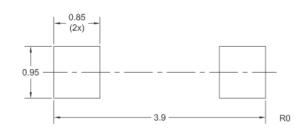
Association Standard EIA-481-D

accordance with

Tape Width: 12mm

Mounting Pad Geometry







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Reel Packing Information

Reel	Reels per Box	Parts per Box	Box Dim	iensions	Shipping Weight (Max.)		
Size	(Maximum)	(Maximum)	INCH	СМ	LB	KG	
13"	5 14 26	25,000 70,000 130,000	15x4x15 15x15x9 15x15x18	38x10x38 38x38x23 38x38x46	7 17 30	4 8 14	

Packaging Base

Reel Size	Quantity
13"	5,000 pcs.

Ordering Information & Marking Code

Central Part No.	Marking Code	Orderable Part No.
CMJA5050	CA50	Add "TR13" as suffix to Central Part No. (ex: CMJA5050 TR13)





Current Limiting Diodes

DFN123F

New CMJA5050

toHS	REA	CH Com	pliant	*		226	-		1	1/85 100	
:м.	14	505	0								
0V,	50	-80n	nA A	djustab packag		ent Lin	nitin	g D	iode	P	Top View Boltom View DFN123F
ainta eed t rofile	iining o use DFN1	a cons severa 123F su	tant curr Il individ urface m	ent with adju: ual different (stable current LDs in order is device is id	regulation to meet the eal for any	from 5 currer	OmÁto nt regu	80m/	ed to meet design re A. This adjustable de values required. Pac g a space saving cur	vice eliminates the
ea	tu	res			Appli	catio	ns			Benefit	s
• Ad • Wi • Ne	justab de op gative	ile regu erating	voltage erature o	p to 80mA	 AC lig Deco 	ighting and hting pane rative lightii and measu ment	ls ng			regulation Space sav Low profile 	
Ste Regul	ady S ator C	tate urrent*		um Limiting Ioltage	Maximum Ten Coefficie			od Reg Curren		Maximum Limiting Voltage	Maximum Temperature Coefficient**
	@ V _T =		Vi@li	- =0.8 x lp MIN			lp	@ V _T ≍	20 V	- Vi@li=0.8 x lp MIN	тс
MIN mA	NOM mA	MAX mA		v	mA/∾	;	MIN mA	NOM mA	MAX mA	v	mA/°C
45	50	55		8.5	-0.3		72	80	88	8.0	-0.3
Measu											
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Product Brief

SUR	CMJA50	T SILICON			www.centralsemi.con
CUR	ADJUSTAE RENT LIMITII 50V, 50-80	NG DIODE	silicon field effec	t adjustable lications rec	JCTOR CMJA5050 is a current regulating diode uiring a constant current
		0	MARKING COD	E: CA50	
	DFN123F C	ASE	FEATURES:		
APPLICAT	IONS:		Constant current	range	
	and displays		 Adjustable regula 	ition up to 80r	nA
 AC lighting 			 Wide operating vi 		
Decorative Test and m	lighting easurement equ	inmont	 Negative tempera Eliminates need f 		nt for LED protection
			 Eliminates need i 	or additional	egulation
MAXIMUM R	ATINGS: (TA=	25°C)	SYMBOL		UNITS
Peak Operati Power Dissip			Pov	50 570	V mW
	ation ation (Note 1)		PD PD	1.0	W
	id Storage Juncl	ion Tomporatur		-65 to +150	
Thermal Res		on remperature	Θ.IA	220	°C/W
	istance (Note 1)		OJA OJA	125	°C/W
Note 1: Mounte	ed on 300mm ² 4-la	yer PCB with 2-or	unce copper traces.		
	L CHARACTER	etice. /T. =20	°C)		
ELECTRICA	Steady State	ISTICS: (1A=25	Maximum Limiting		Maximum Temperature
R	egulator Curre	nt*	Voltage		Coefficient**
	IL @ VT=12V		VL @ IL=0.8 x IP MIN	1	TC
MIN	NOM mA	MAX	v		mA/°C
45	50	55	8.5		-0.3
2oz. copper mo	r applying DC test ounting pad area o tween 25°C and 5	300mm ² in still a	onds duration or greater with de ir.	evice mounted	on FR-4 PC Board with
F	Pulsed Regulat Current*	or	Maximum Limiting Voltage		Maximum Temperature Coefficient**
	Ip @ VT=20V		VL @ IL=0.8 x IP MIN	4	тс
MIN mA	NOM mA	MAX	v		mA/°C
72	80	88	8.0	_	-0.3
Pulse width <1	1.0ms				
"Measured be	tween 25°C and 5)*C.			R3 (10-August 2020)

Datasheet







- Standard Packing Base: 5,000 on 13" Reel
- Inventory: Available Q1-2021
- Distribution:



- Social media, ads, press release in process
- Available documents:
 - Datasheet
 - Product Brief





Adjustable Current Limiting Diodes (CLDs) in the DFN-123F
 50V, 50-80mA



For further information, please contact your Central Sales representation.



www.centralsemi.com Tel: 631.435.1110



Superior service is our passion





CMJA5050 Adjustable Current Limiting Diode in the DFN123F package



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