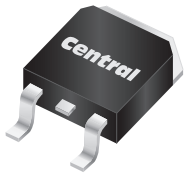
CDCLD200
CDCLD400
CDCLD500

SURFACE MOUNT SILICON CURRENT LIMITING DIODES



DPAK CASE



www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CDCLD200, CDCLD400, and CDCLD500 are Current Limiting Diodes (CLDs) specifically designed for applications requiring a constant current over a wide voltage range. The series is designed with a unique process that holds regulator current constant over temperature excursions (zero temperature coefficient). The devices are available in the thermally efficient DPAK package outline.

MARKING: FULL PART NUMBER

FEATURES:

- Zero temperature coefficient
- High regulator currents available
- Industry standard thermally efficient DPAK

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CDCLD200	CDCLD400	CDCLD500	UNITS
Peak Operating Voltage	P_{OV}	27	13.5	10.8	V
Peak Operating Voltage (T_C=35°C)	P_{OV}		50		V
Power Dissipation (Note 1)	P_D		6.25		W
Power Dissipation (T_C=35°C) (Note 1)	P_D		28.75		W
Thermal Resistance	Θ_{JC}		4.0		°C/W
Operating and Storage Junction Temperature	T_J, T_{stg}		-55 to +150		°C

Note 1: Mounted on 900mm^2 4-layer PCB with 2-ounce copper traces.

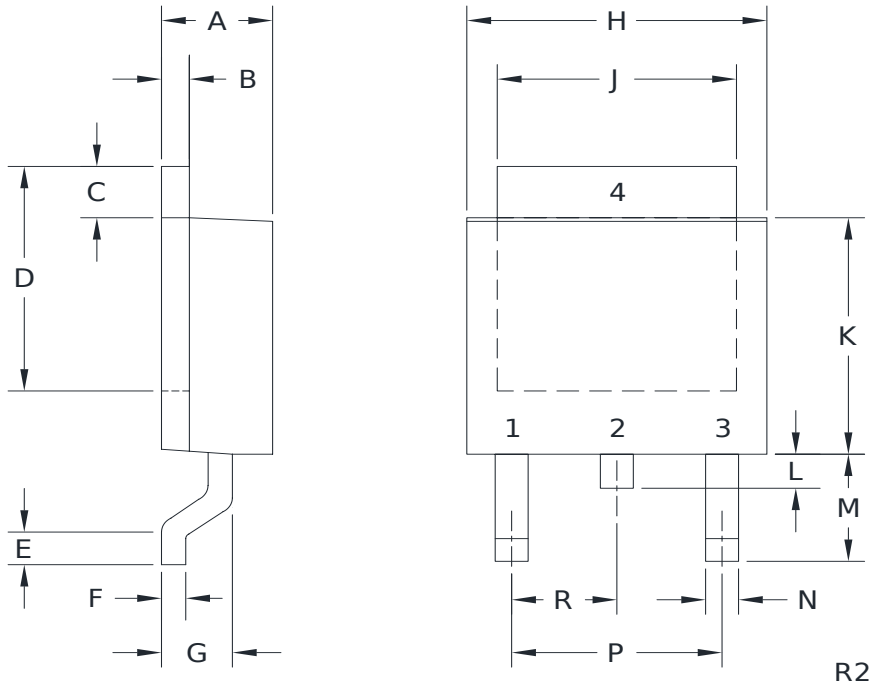
ELECTRICAL CHARACTERISTICS: (T_A=25°C)

Type	Regulator Current (tp=4.5ms) I_P @ V_T=5.0V			Maximum Limiting Voltage (tp=5.0ms) V_L @ 0.8 x I_P MIN
	MIN mA	NOM mA	MAX mA	V
CDCLD200	170	200	230	2.0
CDCLD400	340	400	460	2.0
CDCLD500	425	500	575	2.0

CDCLD200
CDCLD400
CDCLD500

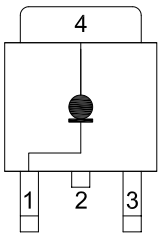
SURFACE MOUNT SILICON
CURRENT LIMITING DIODES

DPAK CASE - MECHANICAL OUTLINE



LEAD CODE:
1) Cathode
2) Anode
3) No Connection
4) Anode
Pin 2 is common to the tab (4)

MARKING: FULL PART NUMBER



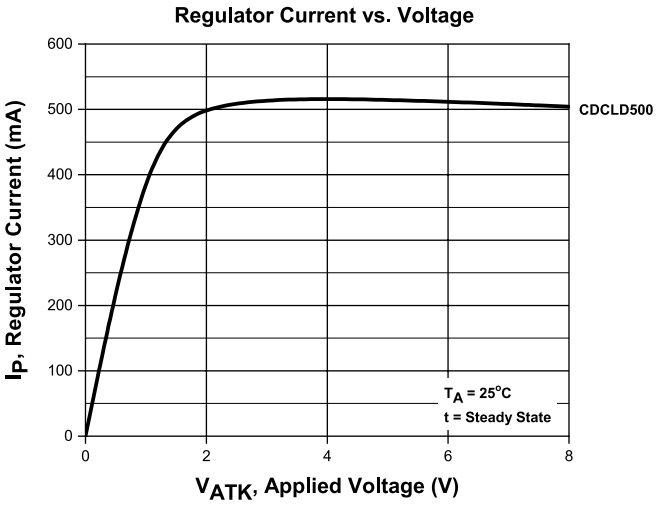
DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.083	0.108	2.10	2.75
B	0.016	0.035	0.40	0.89
C	0.035	0.063	0.89	1.60
D	0.203	0.228	5.15	5.79
E	0.020	-	0.51	-
F	0.016	0.024	0.40	0.60
G	0.061		1.55	
H	0.248	0.268	6.30	6.81
J	0.195	0.217	4.95	5.50
K	0.209	0.245	5.30	6.22
L	0.033		0.83	
M	0.090	0.115	2.30	2.91
N	0.012	0.045	0.30	1.14
P	0.180		4.60	
R	0.090		2.30	

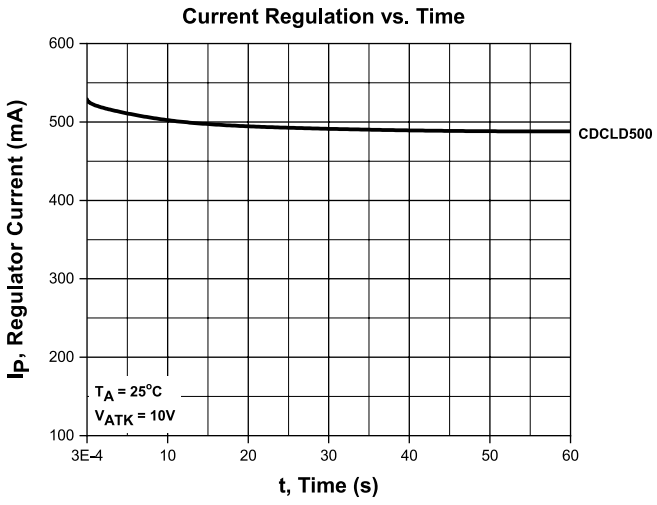
DPAK(REV:R2)

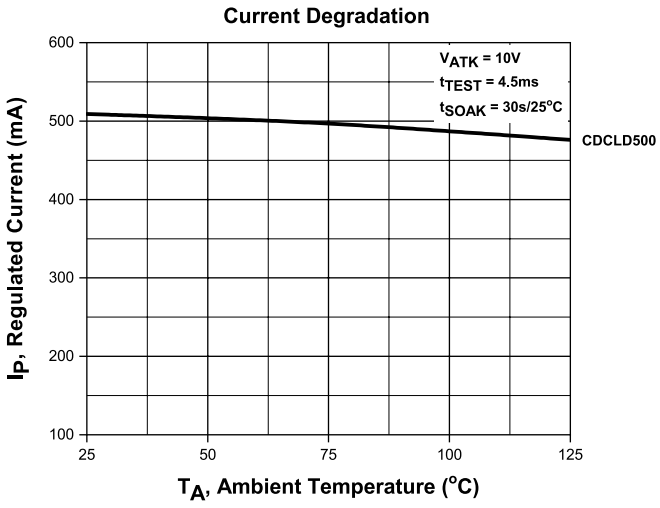
CDCLD200
CDCLD400
CDCLD500

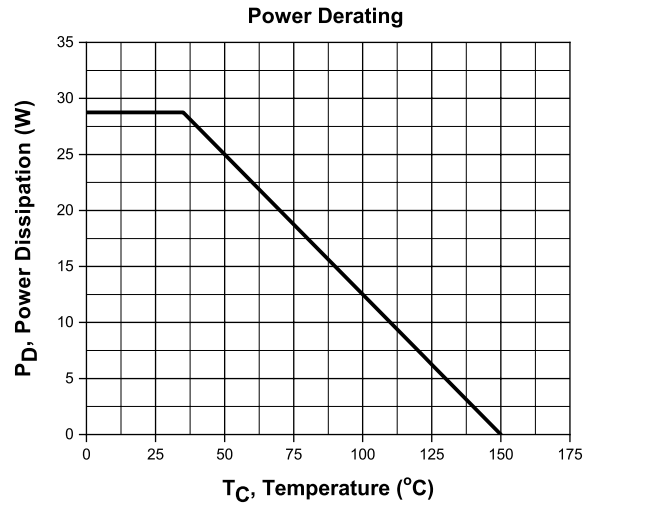
SURFACE MOUNT SILICON
CURRENT LIMITING DIODES

TYPICAL ELECTRICAL CHARACTERISTICS









CDCLD200
CDCLD400
CDCLD500

SURFACE MOUNT SILICON
CURRENT LIMITING DIODES

TYPICAL APPLICATIONS

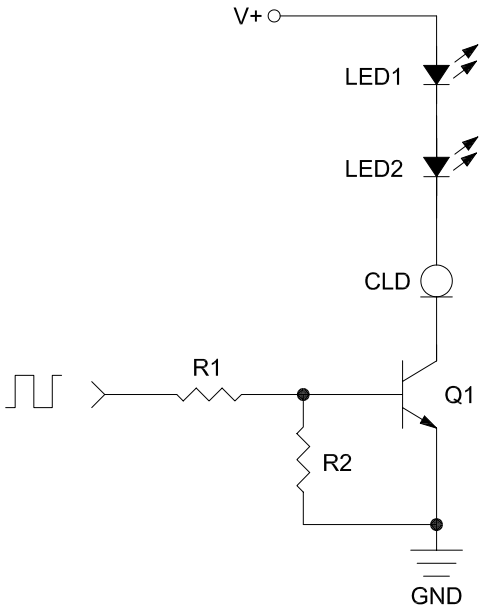


Figure 1. CLDs can be used to limit the current flowing through LED strings. Their dynamic performance make them an excellent replacement for current limiting resistors, as they allow for continuous current regulation regardless of input voltage. LED strings like this are commonly used in dimming lighting systems. By using a PWM input to control the transistor, the LED luminosity can be controlled by extending or decreasing the pulse width, allowing for control over the brightness of the LED.

CDCLD200
CDCLD400
CDCLD500

SURFACE MOUNT SILICON
CURRENT LIMITING DIODES

TYPICAL APPLICATIONS

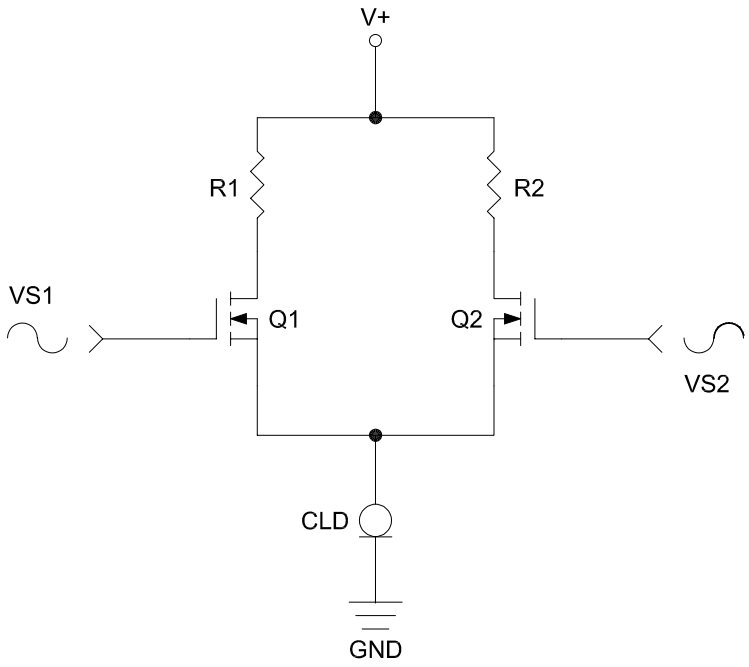
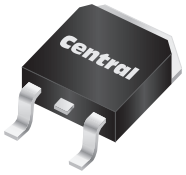
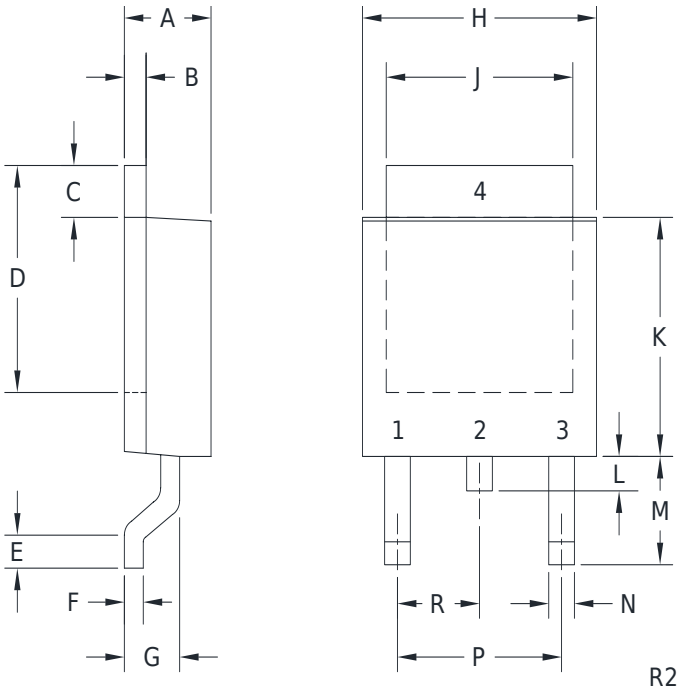


Figure 2. When designing differential amplifiers, it is essential to use a high impedance tail resistor to control both differential and common mode function. For differential signals, the tail resistor effectively splits the current amongst the transistors. This ensures proportional current increase and decrease between the transistors. The high impedance drives down the common mode gain and increases the common mode rejection ratio, thus yielding a more ideal amplifier. Ideally, an infinite impedance current source would be used in place of the tail resistor. While the ideal current source doesn't exist, CLDs serve as an excellent replacement for the tail resistor and also perform much like an active current source, both regulating the circuit to a constant current and presenting a large tail impedance. This yields a larger CMRR than using a high impedance tail resistor would.

Package Details
DPAK Case



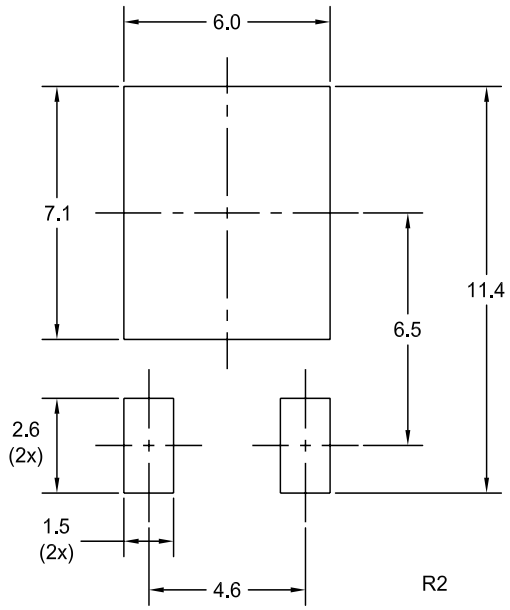
Mechanical Drawing



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.083	0.108	2.10	2.75
B	0.016	0.035	0.40	0.89
C	0.035	0.063	0.89	1.60
D	0.203	0.228	5.15	5.79
E	0.020	-	0.51	-
F	0.016	0.024	0.40	0.60
G	0.061		1.55	
H	0.248	0.268	6.30	6.81
J	0.195	0.217	4.95	5.50
K	0.209	0.245	5.30	6.22
L	0.033		0.83	
M	0.090	0.115	2.30	2.91
N	0.012	0.045	0.30	1.14
P	0.180		4.60	
R	0.090		2.30	
			DPAK (REV: R2)	

Lead Code:
Reference individual device datasheet.

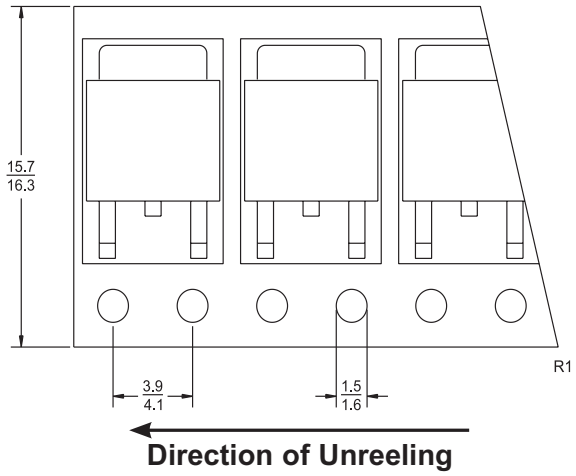
Mounting Pad Geometry (Dimensions in mm)



Package Details
DPAK Case

Tape Dimensions and Orientation (Dimensions in mm)

Tape Width: 16mm



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

Packaging Base

13” Reel = 2,500 pcs.

Reel Labeling Information

Each reel is labeled with the following information:
Central Part Number, Customer Part Number, Purchase Order Number, Quantity, Lot Number, Date Code and Ship Date.

Reel Packing Information

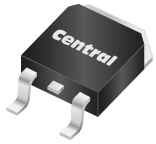
Reel Size	Reels per Box (Maximum)	Parts per Box (Maximum)	Box Dimensions		Shipping Weight (Max.)	
			INCH	CM	LB	KG
13”	4	10,000	15x4x15	38x10x38	14	7
	9	22,500	15x15x9	38x38x23	29	14
	18	45,000	15x15x18	38x38x46	57	26

Ordering Information

- For devices taped and reeled on 13” reels, add TR13 suffix to part number.
- All SMDs are available in small quantities for prototype and manual placement applications.

Material Composition Specification

DPAK Case



Device average mass . . . . . **297 mg**

Fluctuation margin . . . . . **+/-10%**

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	0.75%	2.2	Si	7440-21-3	0.74%	2.2	7,407
bond wire	aluminum or copper	1.55%	4.6	Al	7429-90-5	1.55%	4.6	15,488
				Cu	7440-50-8			
leadframe	Cu alloy	52.53%	156	Cu	7440-50-8	52.46%	155.8	524,579
				Fe	7439-89-6	0.07%	0.2	673
die attach	high temperature solder paste	4.04%	12	Pb	7439-92-1	3.74%	11.1	37,374
				Sn	7440-31-5	0.2%	0.6	2,020
				Ag	7440-22-4	0.1%	0.3	1,010
encapsulation*	EMC	38.25%	113.6	silica	7631-86-9	26.01%	77.26	260,135
				epoxy resin	29690-82-2	7.65%	22.73	76,532
				phenol resin	9003-35-4	3.82%	11.35	38,215
				Sb_2O_3	1309-64-4	0.38%	1.13	3,805
				Br	7726-95-6	0.38%	1.13	3,805
	EMC GREEN	38.25%	113.6	silica (fused)	60676-86-0	29.44%	87.43	294,377
				epoxy resin	29690-82-2	3.82%	11.36	38,249
				phenol resin	9003-35-4	3.71%	11.02	37,104
				carbon black	1333-86-4	0.11%	0.34	1,145
				metal hydroxide	1309-42-8	1.16%	3.45	11,616
plating**	tin/lead process	2.9%	8.6	Sn	7440-31-5	2.6%	7.74	26,061
				Pb	7439-92-1	0.29%	0.86	2,896
	matte tin	2.9%	8.6	Sn	7440-31-5	2.90%	8.60	28,956

*EMC GREEN molding compound is Halogen-Free.

**For Lead Free plating, add suffix “PB FREE” to part number.
For Tin/Lead plating, add suffix “TIN/LEAD” to part number.
No suffix designation allows for the supply of either lead-free or tin/lead plated product depending on availability.

Disclaimer
The information provided in this Material Composition data sheet is, to the best of our knowledge, correct. However, there is no guarantee to completeness or accuracy, as some information is derived from data sources outside the company.

OUTSTANDING SUPPORT AND SUPERIOR SERVICES

PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centralsemi.com

Worldwide Field Representatives:
www.centralsemi.com/wwreps

Worldwide Distributors:
www.centralsemi.com/wwdistributors

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centralsemi.com/terms

https://www.centralsemi.com

Product End of Life Notification

PDN ID:	PDN01286
Notification Date:	2/10/26
Last Buy Date:	Stock Only
Last Shipment Date	Stock Only

Please be advised that Central Semiconductor must immediately discontinue the product(s) listed in the attached PDN notice. Orders can only be accepted for products with available inventory on hand.

You may have purchased one or more of the products listed. Please do not hesitate to contact your local Central Semiconductor sales representative with any questions or needs you may have. Central regrets any inconvenience this may cause.

Sincerely,

Central Semiconductor, LLC

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.

https://www.centralsemi.com

Product End of Life Notification

PDN ID:	PDN01286
Notification Date:	2/10/26
Last Buy Date:	Stock Only
Last Shipment Date	Stock Only

Summary:The following Current Limiting Diodes are discontinued and now classified as End of Life (EOL)

Although Central Semiconductor makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by other manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's ongoing Product Portfolio Management. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

*** All Plating types (PBFREE,TIN/LEAD) for each item listed are included in this notice.**

Central Part Number	Suggested Replacement
CDCLD080 BK	N/A
CDCLD080 TR13	N/A
CDCLD100 BK	N/A
CDCLD100 TR13	N/A
CDCLD120 BK	N/A
CDCLD120 TR13	N/A
CDCLD200 BK	N/A
CDCLD200 TR13	N/A
CDCLD400 BK	N/A
CDCLD400 TR13	N/A
CDCLD500 BK	N/A
CDCLD500 TR13	N/A
CPL03-CEN500N-CM	N/A
CPL03-CEN500N-CM200	N/A
CPL03-CEN500N-CT	N/A
CPL03-CEN500N-PN	N/A
CPL03-CEN500N-WN	N/A

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. If you would like assistance, please visit https://my.centralsemi.com/submit-inquiry?type=ER to submit an online inquiry.

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.

ENTEGRECİ

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Elektronik komponent tedarikinde Entegreci

Entegreci, Eskişehir merkezli, Türkiye geneline satış yapan bir elektronik komponent mağazasıdır. Entegreler (IC), mikrodenetleyiciler, transistörler, diyotlar, pasif elemanlar, konnektörler, modüller ve geliştirme kartları tek adetten seri üretim adetlerine kadar satılır. Ürün sayfalarında güncel stok durumunu, fiyatı ve datasheet bağlantısını bulabilirsiniz.

Parça koduyla arama

Üretici parça numarasını yazın; stok ve fiyatı hemen görün.

www.entegreci.com

Ürün kategorileri

Entegreden kapasitöre tüm elektronik komponent kategorileri.

Kategorilere göz atın

Üreticiler

Aradığınız üreticinin ürünlerini tek sayfada inceleyin.

Üreticileri görün

Toplu alım ve teklif

Listede olmayan ya da yüksek adetli parçalar için teklif isteyin.

Teklif isteyin

www.entegreci.com | **destek@entegreci.com** | **0850 305 90 34**

Entegreci is an online electronic components store based in Türkiye. Search by manufacturer part number to see stock, prices and datasheets for integrated circuits, microcontrollers, transistors, passive components and connectors, or request a quote for parts that are not listed.

Bu sayfa Entegreci tarafından eklenmiştir. Belgenin önceki sayfaları asıl yayıncısına aittir ve içeriği değiştirilmemiştir; en güncel sürüm için belgenin yayıncısına başvurun.