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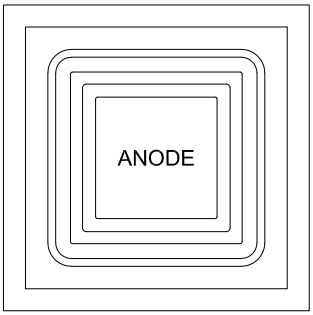
CPL03-CMJD0130 THRU CPL03-CMJD5750
Current Limiting Diode Die



BACKSIDE CATHODE R2

MECHANICAL SPECIFICATIONS:

Die Size	15.7 x 15.7 MILS
Die Thickness	7.9 MILS
Anode Bonding Pad Size	7.24 x 7.24 MILS
Top Side Metalization	Al – 20,000Å
Back Side Metalization	Ti/Ni/Ag – 1,000Å/3,000Å/10,000Å
Scribe Alley Width	2.36 MILS
Wafer Diameter	6 INCHES
Gross Die Per Wafer	101,000

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**		**UNITS**
Peak Operating Voltage	P_{OV}	100	V
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

Type	Regulator Current (Note 1) I_P @ V_T=25V			Minimum Dynamic Impedance Z_T @ V_T=25V	Minimum Knee Impedance Z_K @ V_K=6.0V	Maximum Limiting Voltage V_L @ I_L=0.8 x I_P MIN	Temperature Coefficient (Note 2) TC
	MIN mA	NOM mA	MAX mA	MΩ	kΩ	V	%/°C
CPL03-CMJD0130	0.05	0.13	0.21	6.0	2,000	0.6	+2.10 to +0.10
CPL03-CMJD0300	0.20	0.31	0.42	4.0	1,000	0.8	+0.80 to -0.20
CPL03-CMJD0500	0.40	0.515	0.63	2.0	500	1.1	+0.50 to -0.25
CPL03-CMJD0750	0.60	0.76	0.92	1.0	200	1.4	+0.20 to -0.32
CPL03-CMJD1000	0.88	1.1	1.32	0.65	100	1.7	-0.10 to -0.37
CPL03-CMJD1500	1.28	1.5	1.72	0.45	70	2.0	-0.13 to -0.40
CPL03-CMJD2000	1.68	2.0	2.32	0.35	50	2.3	-0.15 to -0.42
CPL03-CMJD2700	2.28	2.69	3.1	0.30	30	2.7	-0.18 to -0.45
CPL03-CMJD3000	2.52	3.0	3.48	0.27	25	3.0	-0.19 to -0.46
CPL03-CMJD3500	3.0	3.55	4.1	0.25	20	3.2	-0.20 to -0.47
CPL03-CMJD4500	3.9	4.5	5.1	0.20	10	3.7	-0.22 to -0.50
CPL03-CMJD5750	5.0	5.75	6.5	0.05	5.0	4.5	-0.25 to -0.53

Notes: 1) Pulsed Method: Pulse Width (ms) = 27.5 divided by I_P NOM (mA)
2) The Temperature Coefficient is measured between + 25°C and +50°C.

CPL03-CMJD0130 THRU CPL03-CMJD5750
Typical Electrical Characteristics

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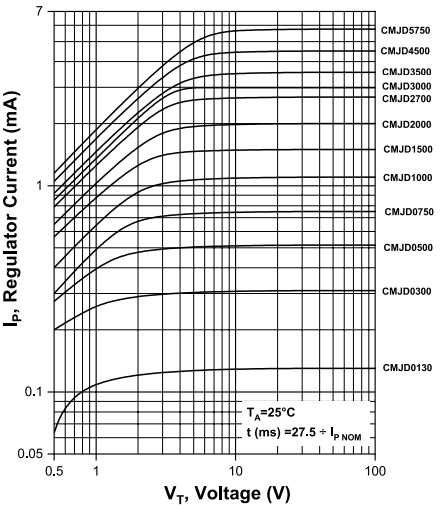
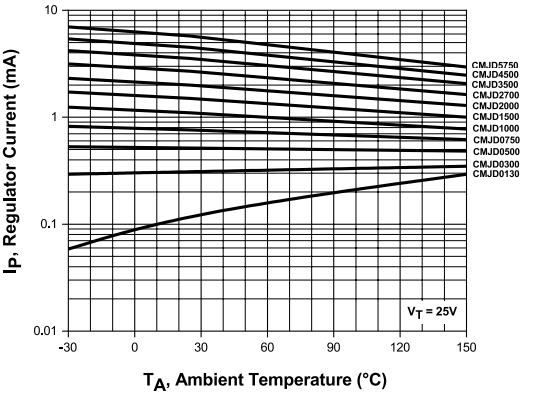
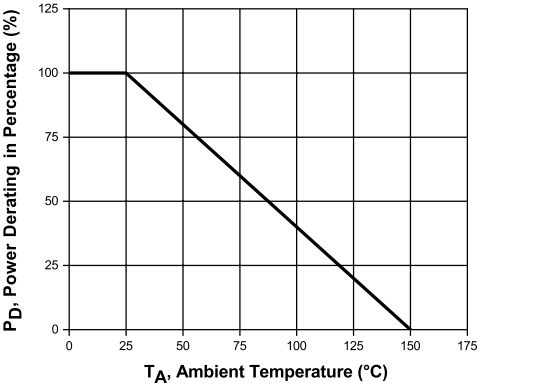
Regulator Current vs Voltage



Nominal Regulator Current vs Temperature



Normalized Power Derating



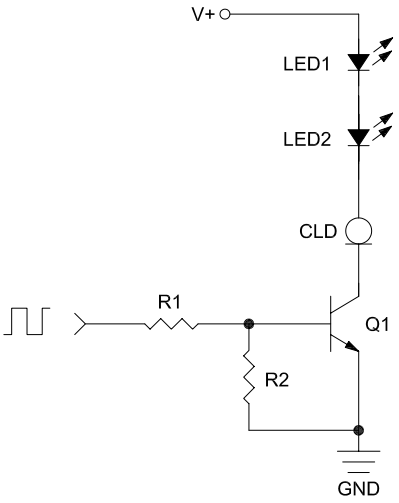


Figure 1. CLDs can be used to limit the current flowing through LED strings. Their dynamic performance make them an excellent replacement for current limiting resistors, as they allow for continuous current regulation regardless of input voltage. LED strings like this are commonly used in dimming lighting 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.

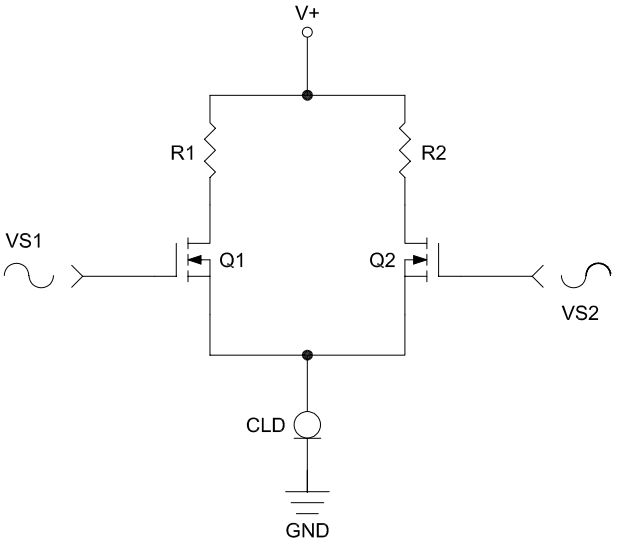
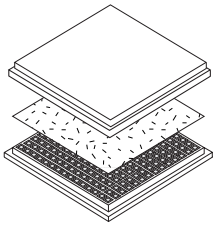


Figure 2. When designing differential amplifiers, it is essential to use a high impedance tail resistor to control both differential and common mode function. For differential signals, the tail resistor effectively splits the current amongst the transistors. This ensures proportional current increase 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.

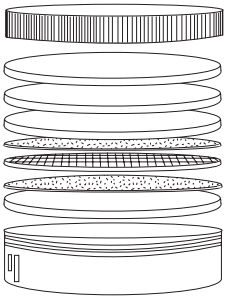
BARE DIE PACKING OPTIONS



BARE DIE IN TRAY (WAFFLE) PACK

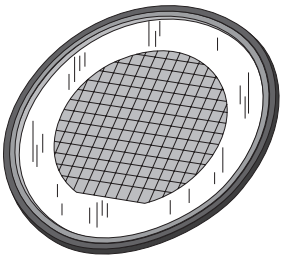
CT: Singulated die in tray (waffle) pack.
(example: CP211-PART NUMBER-CT)

CM: Singulated die in tray (waffle) pack 100% visually inspected as per MIL-STD-750, (method 2072 transistors, method 2073 diodes).
(example: CP211-PART NUMBER-CM)



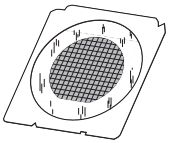
UNSAWN WAFER

WN: Full wafer, unsawn, 100% tested with reject die inked.
(example: CP211-PART NUMBER-WN)



SAWN WAFER ON PLASTIC RING

WR: Full wafer, sawn and mounted on plastic ring, 100% tested with reject die inked.
(example: CP211-PART NUMBER-WR)



Please note: Sawn Wafer on Metal Frame (WS) is possible as a special order. Please contact your Central Sales Representative at 631-435-1110.

Visit the Central website for a complete listing of specifications:
www.centralsemi.com/bdspecs

R2 (3-April 2017)

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

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