



## FEATURES:

- High Power LED Driver
- Wide (7:1) Input Voltage Range
- Remote Control Function
- 24 Pin DIP Package or 2x1 Inch Package Types
- Constant Output Current
- High Efficiency (Up to 96%)
- PWM Digital Dimming Function (10 – 90%)
- Analogue Dimming Function (0 – 100%)<sup>①</sup>

## Models Single output



| Model        | Input Voltage (Vdc) | Output Voltage (Vdc) | Maximum Rated Current (mA) | Efficiency Max (%) |
|--------------|---------------------|----------------------|----------------------------|--------------------|
| AMLD-3630IZ  | 5-36                | 2-32                 | 300                        | 96                 |
| AMLD-3635IZ  | 5-36                | 2-32                 | 350                        | 96                 |
| AMLD-3650IZ  | 5-36                | 2-32                 | 500                        | 96                 |
| AMLD-3660IZ  | 5-36                | 2-32                 | 600                        | 96                 |
| AMLD-3670IZ  | 5-36                | 2-32                 | 700                        | 96                 |
| AMLD-3680IZ  | 5-36                | 2-32                 | 800                        | 96                 |
| AMLD-3690IZ  | 5-36                | 2-32                 | 900                        | 96                 |
| AMLD-36100IZ | 5-36                | 2-32                 | 1000                       | 96                 |
| AMLD-36110IZ | 5-36                | 2-32                 | 1100                       | 96                 |
| AMLD-36120IZ | 5-36                | 2-32                 | 1200                       | 96                 |
| AMLD-36130IZ | 5-36                | 2-32                 | 1300                       | 95                 |
| AMLD-36140IZ | 5-36                | 2-32                 | 1400                       | 95                 |
| AMLD-36150IZ | 5-36                | 2-32                 | 1500                       | 95                 |
| AMLD-36160IZ | 5-36                | 2-32                 | 1600                       | 95                 |
| AMLD-36180IZ | 5-36                | 2-32                 | 1800                       | 95                 |
| AMLD-36200IZ | 5-36                | 2-32                 | 2000                       | 95                 |

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. <sup>①</sup> Analogue dimming is not supported on 1.6A, 1.8A, 2.0A models

## Input Specifications

| Parameters   | Nominal  | Typical | Maximum | Units |
|--|--|---------|---------|-------|
| Voltage range  | 24   | 5-36    | 36      | VDC   |
| On/Off Control (Analog Control)  | ON: Open or 0V > V < 0.6V  |         |         |       |
| Input voltage range (0-12Vdc)<br>(Leave open if not used)                                    | OFF: 0.6V > V < 5V (1mA Max)   |         |         |       |
| Dimming Control (Digital Control)  | Max PWM Frequency (10%~90%) 200Hz / 20KHz for all models   |         |         |       |
| Dimming Control (Analog Control)   | 0-4.5V (1mA max) Analog Voltage (0%~100%) models: AMLD-3630IZ, AMLD-3635IZ, AMLD-3650IZ  |         |         |       |
| Input voltage range (0-12Vdc)*<br>(Leave open if not used)<br>For models with 1.5A and below | 0-6.5V (1mA max) Analog Voltage (0%~100%) models: AMLD-3660IZ, AMLD-3670IZ, AMLD-3680IZ, AMLD-3690IZ, AMLD-36100IZ, AMLD-36110IZ, AMLD-36120IZ |         |         |       |

NOTE: Exceeding 12Vdc on Dimming Control pin will damage the converter.

## Output Specifications

| Parameters               | Conditions                                    | Typical | Maximum | Units  |
|--------------------------|---|---------|---------|--------|
| Current accuracy         |   | ±2      |         | %      |
| Short Circuit protection | Regulated at the rated current for each model |         |         |        |
| Output Open Protection   | No Load                                       |         |         |        |
| Max load capacitance     |   |         | 100     | µF     |
| Ripple & Noise           | 20MHz Bandwidth                               | 300     |         | mV p-p |

## General Specifications

| Parameters            | Conditions | Typical  | Maximum                            | Units |
|-----------------------|------------|--|------------------------------------|-------|
| Switching frequency   | 100% load  | 260  | 1.5MHz for 1.6A, 1.8A, 2.0A models | KHz   |
| Operating temperature |            | -40 to +85   |                                    | °C    |
|                       |            | -40 to +70 (1.2A, 1.3A, & 1.5A, 1.6A, 1.8A, 2.0A models) |                                    |       |
| Storage temperature   |            | -40 to +125  |                                    | °C    |

### General Specifications (continued)

| Parameters             | Conditions   | Typical | Maximum | Units |
|------------------------|--|---------|---------|-------|
| Max Case temperature   |  |         | 100     | °C    |
| Cooling                | Free Air Convection  |         |         |       |
| Thermal Impedance      |  | 13.17   |         | °C/W  |
| Humidity               |  |         | 95      | % RH  |
| Case material          | Non-Conductive Black Plastic, Nickel-Coated Copper 1.3A, 1.4A & 1.5A models)     |         |         |       |
| Potting material       | Epoxy (Flammability UL94V-0)   |         |         |       |
| Weight                 |  | 12      |         | g     |
| Dimensions (L x W x H) | 1.25 × 0.80 × 0.40 inches / 31.80 × 20.30 × 10.20 mm                             |         |         |       |
|                        | 1.25 × 0.80 × 0.45 inches / 31.80 × 20.30 × 11.30 mm (1.3A, 1.4A, & 1.5A models) |         |         |       |
|                        | 1.99 × 0.99 × 0.37 inches / 50.70 × 25.30 × 9.55 mm (1.6A, 1.8A, 2.0A models)    |         |         |       |

### Safety Specifications

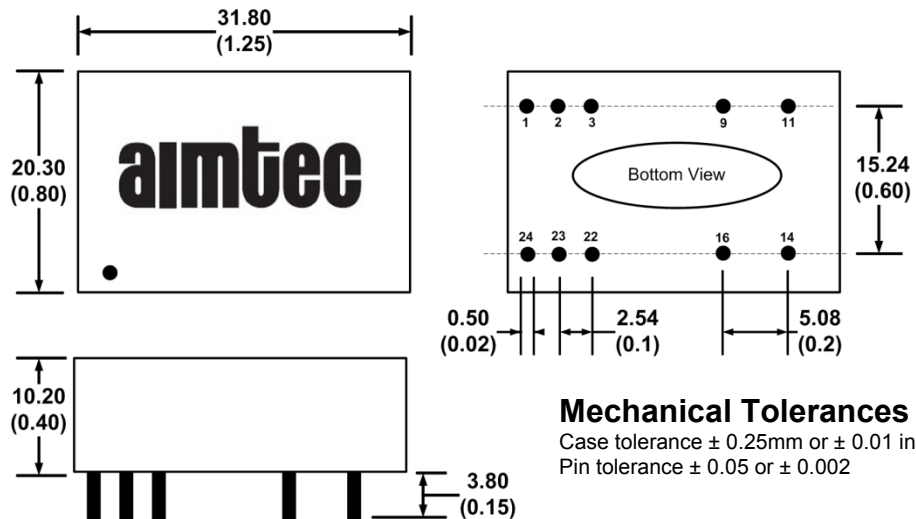
| Parameters       |                                  |
|------------------|----------------------------------|
| Agency approvals | CE                               |
| Standards        | EN 55022, class B                |
|                  | EN55024                          |
|                  | IEC 61000-4-2 (Perf. Criteria B) |
|                  | IEC 61000-4-3 (Perf. Criteria A) |
|                  | IEC 61000-4-6 (Perf. Criteria A) |
|                  | IEC 61000-4-8 (Perf. Criteria A) |

### Pin Out Specifications

| Pin | Single        |
|-----|---------------|
| 1   | Remote On/Off |
| 2   | -Vin          |
| 3   | -Vin          |
| 9   | NC            |
| 11  | NC            |
| 14  | LED +         |
| 16  | LED -         |
| 22  | +Vin          |
| 23  | +Vin          |
| 24  | DIM           |

NC: Not Connected

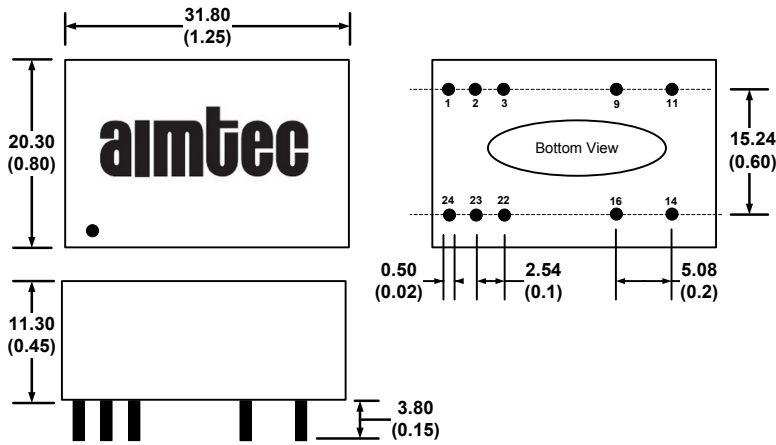
### Dimensions (0.3A to 1.2A models)



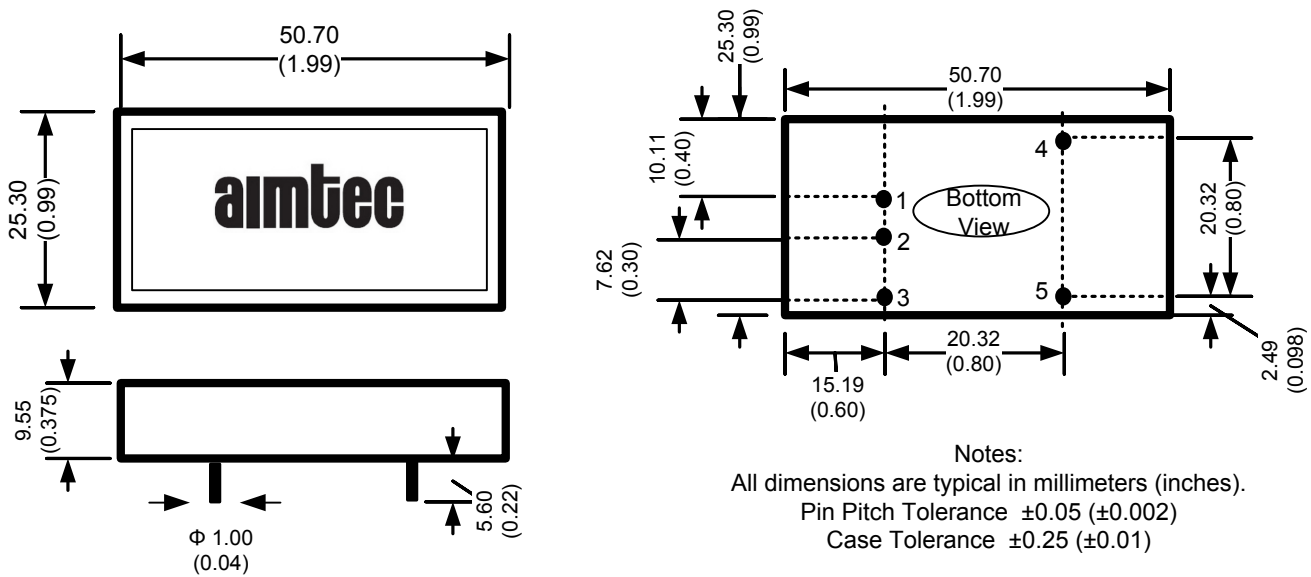
### Mechanical Tolerances

Case tolerance ± 0.25mm or ± 0.01 inches  
Pin tolerance ± 0.05 or ± 0.002

**Dimensions (1.3A, 1.4A, & 1.5A models)**

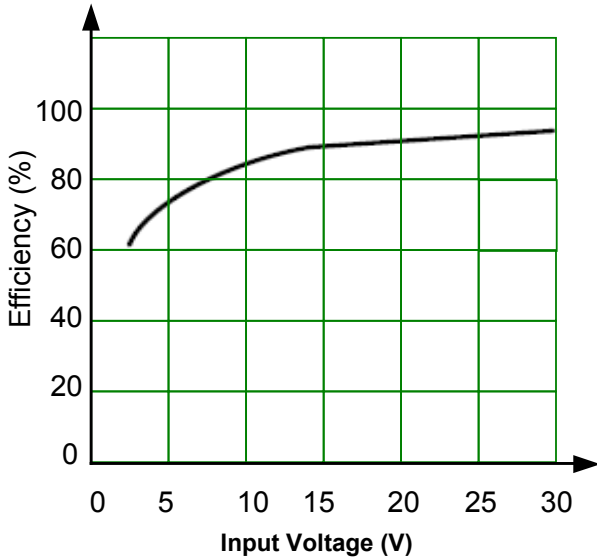


**Dimensions (1.6A, 1.8A, & 2.0A models)**



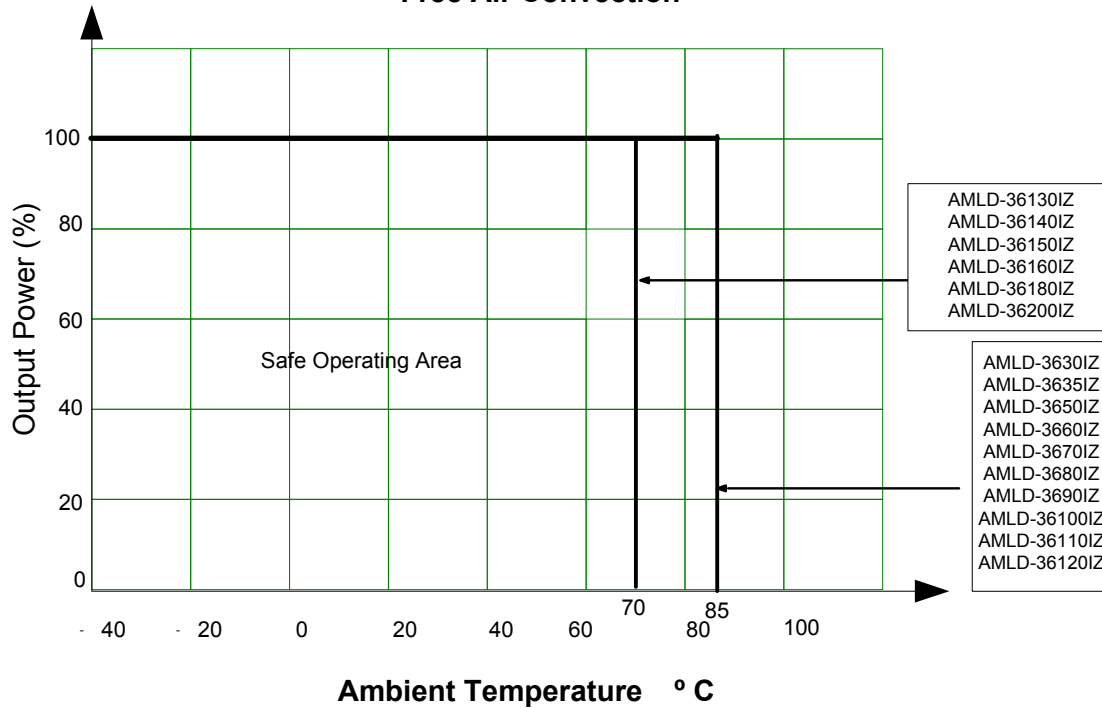
| Pin | Single                      |
|-----|-----------------------------|
| 1   | +Vin                        |
| 2   | -Vin                        |
| 3   | Remote On/Off & PWM Dimming |
| 4   | LED +                       |
| 5   | LED -                       |

**Efficiency versus Input Voltage**

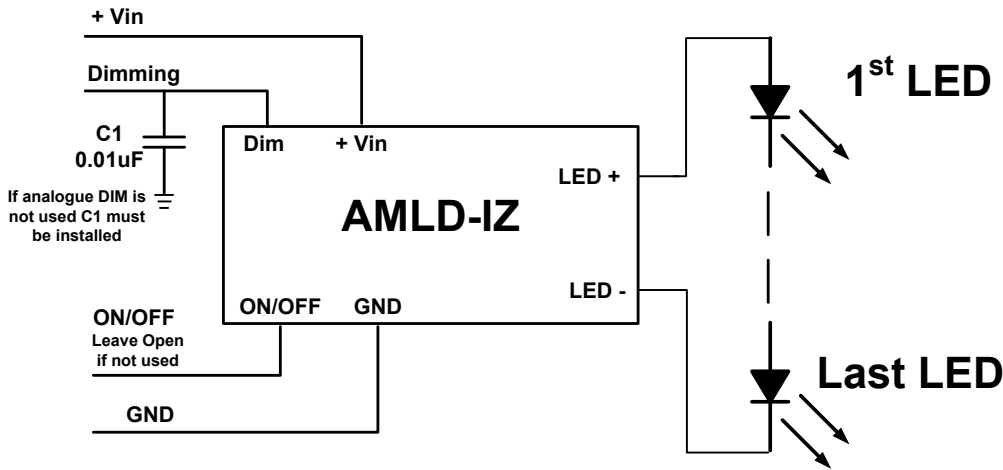


**Derating**

**Free Air Convection**

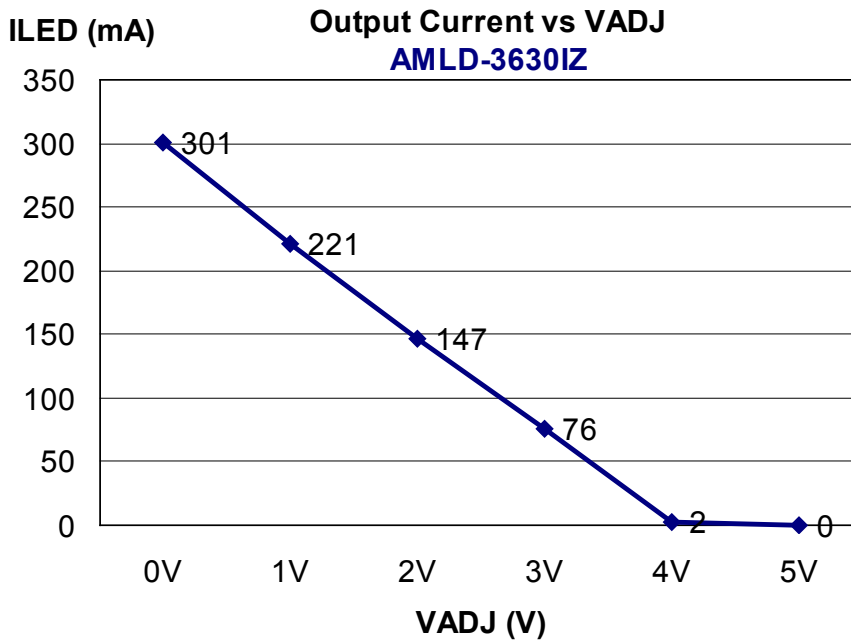


### Application Circuit

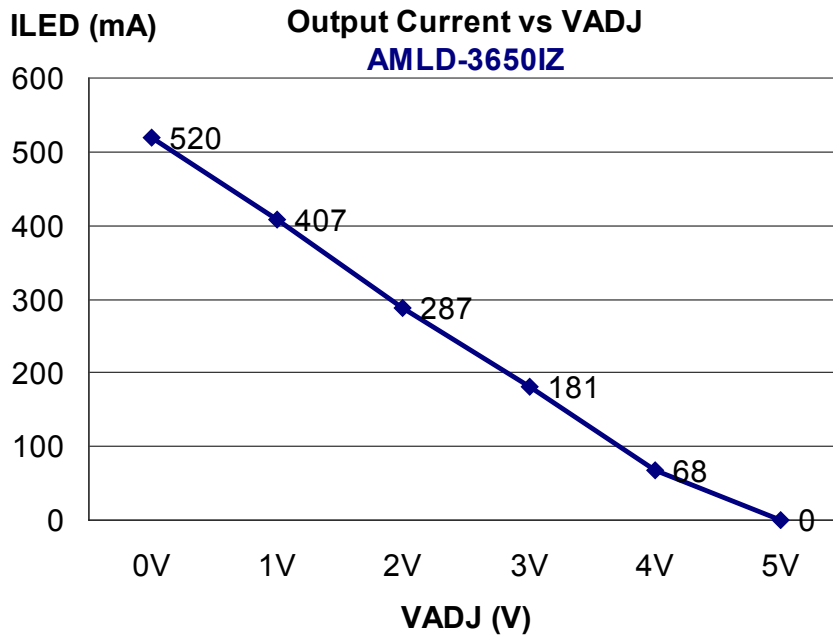
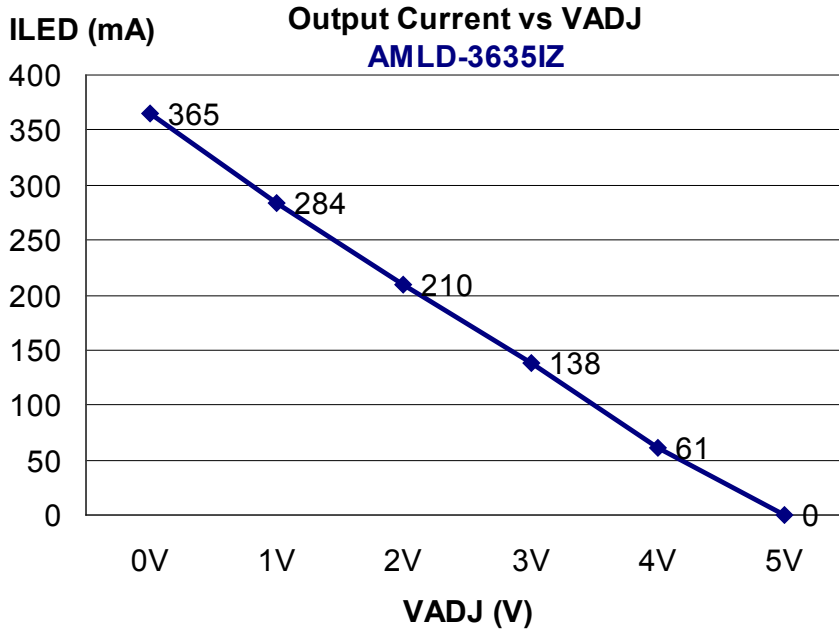


**Note:** The relation between input and output voltage for AMLD-IZ LED Driver step-down converter series is:  
 $V_{in} - 4V \geq V_{out} \geq \text{Total LED voltage}$   
 $V_{out} / \text{LED voltage} = \text{LED quantity}$

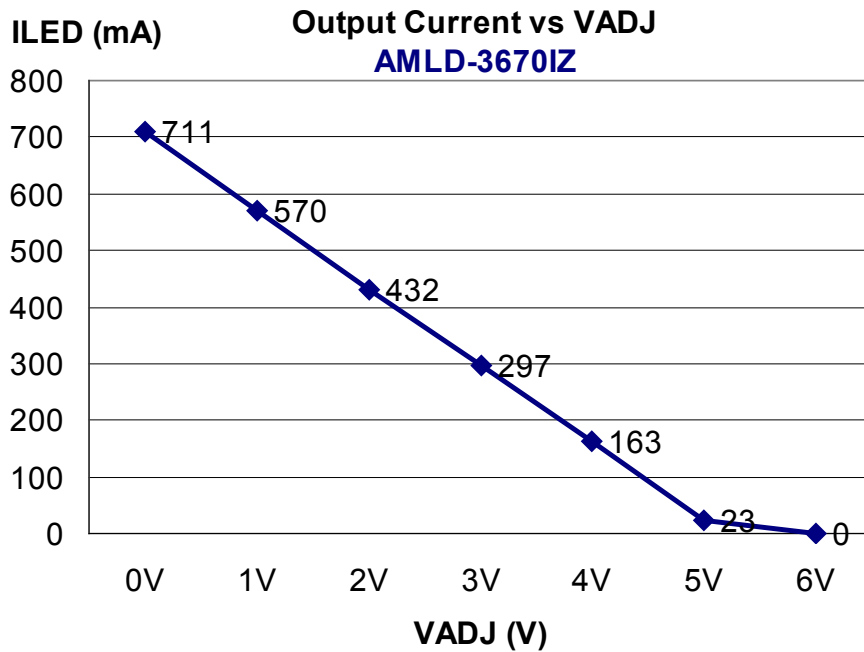
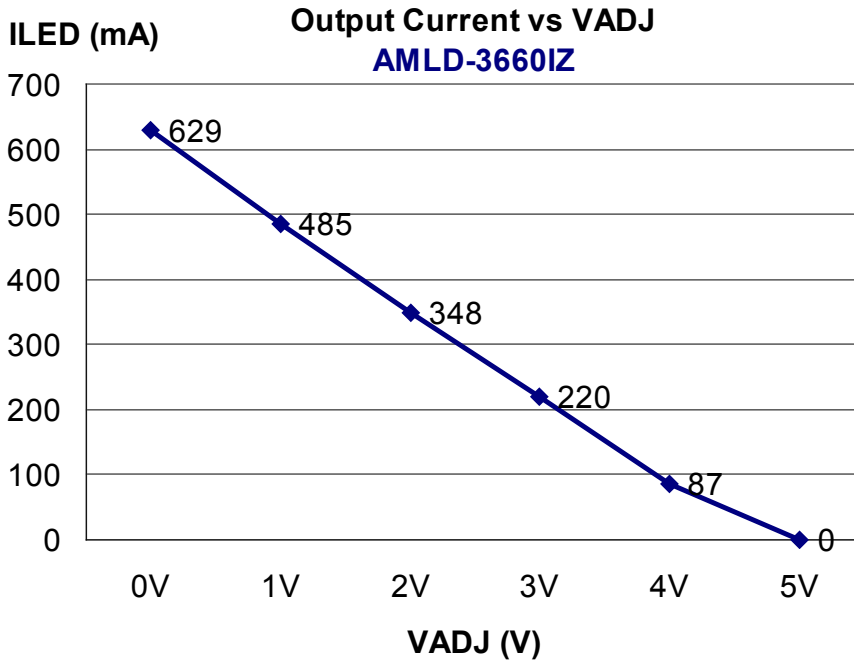
### Output Current versus Dimming Voltage



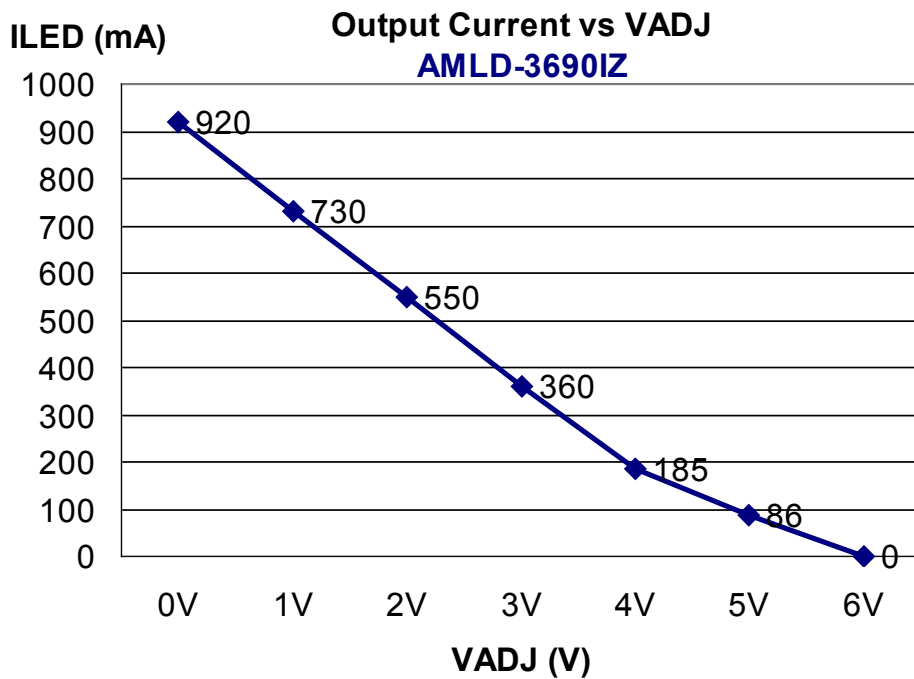
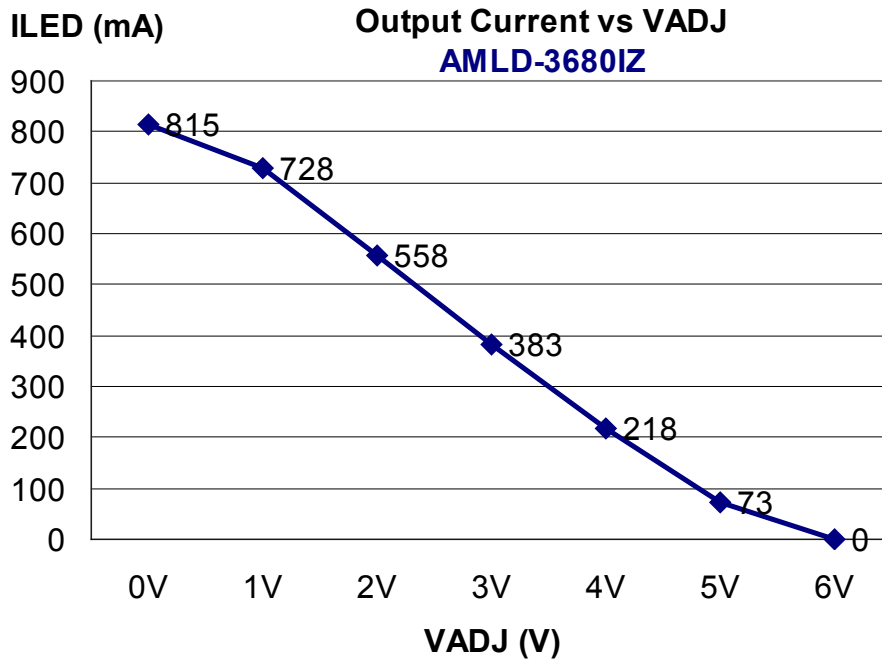
**Output Current versus Dimming Voltage (continued)**



**Output Current versus Dimming Voltage (continued)**

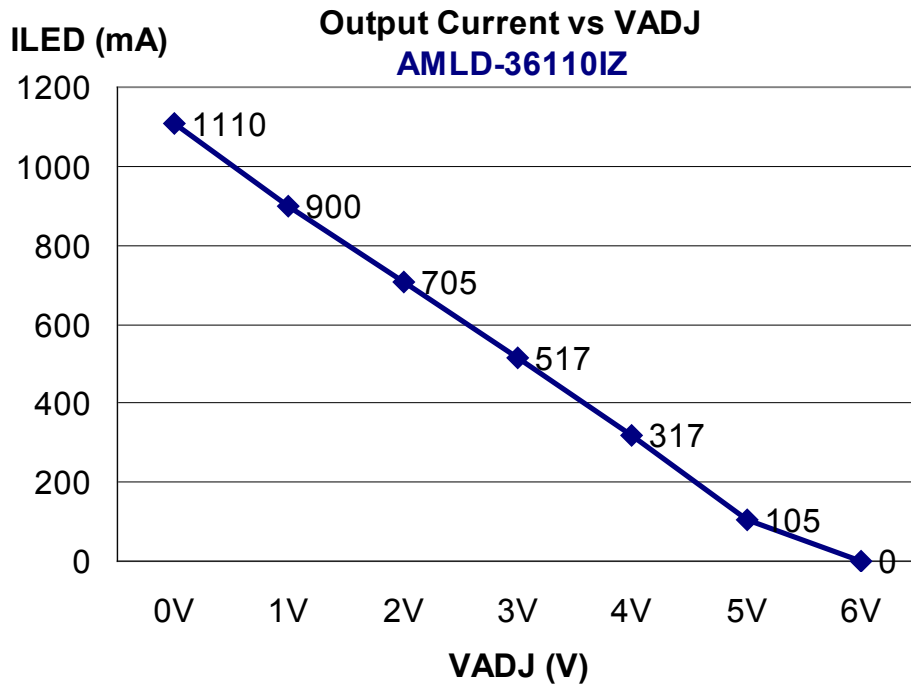
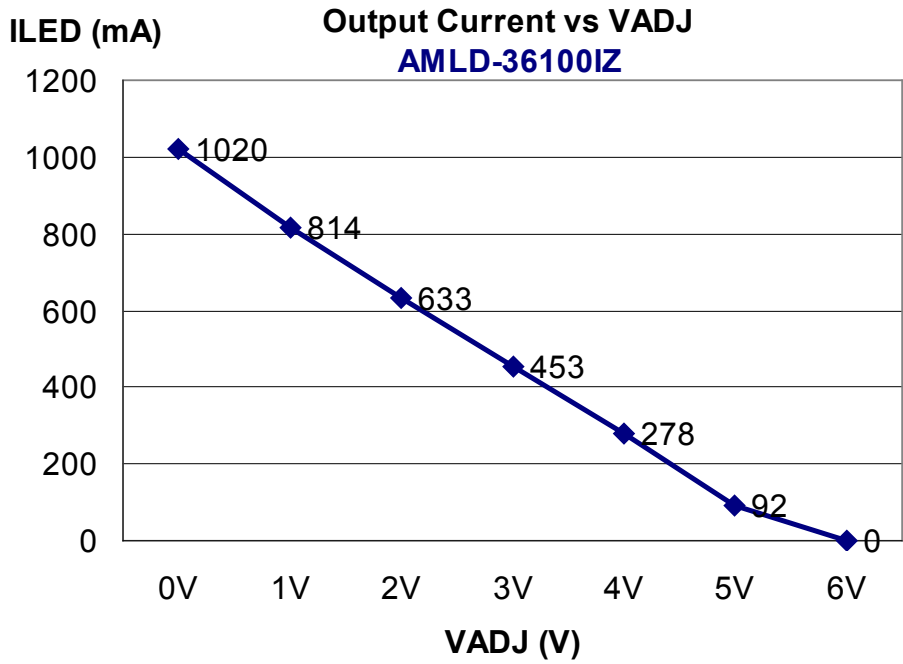


**Output Current versus Dimming Voltage (continued)**

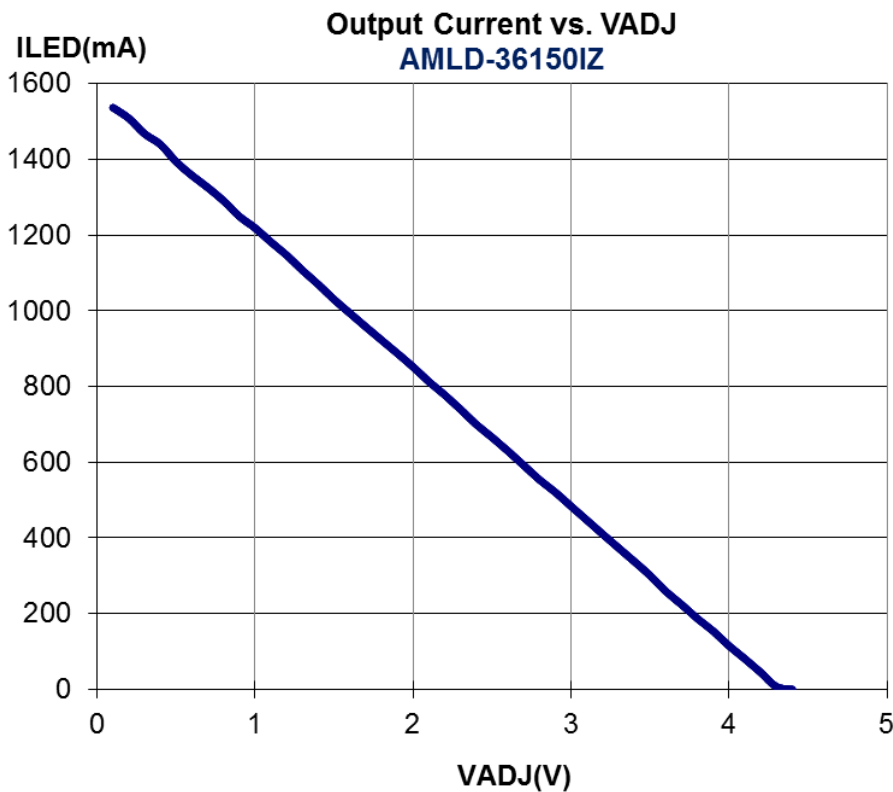
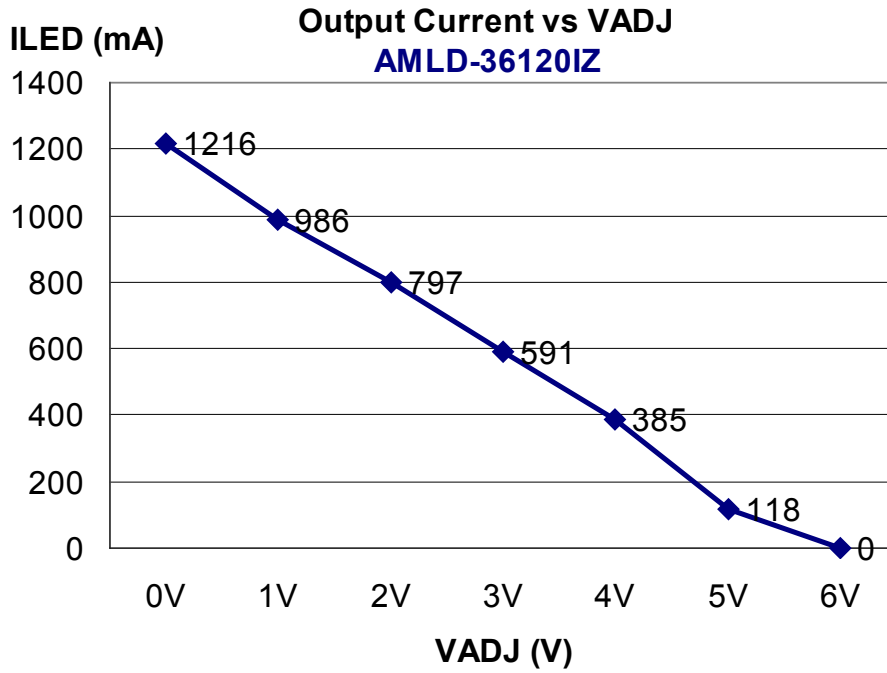




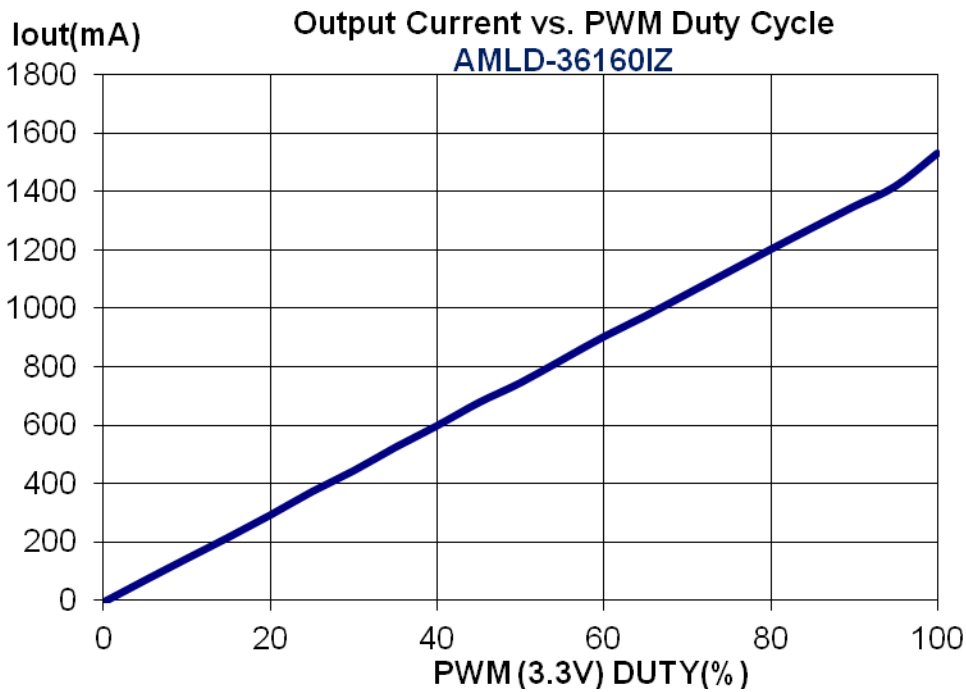
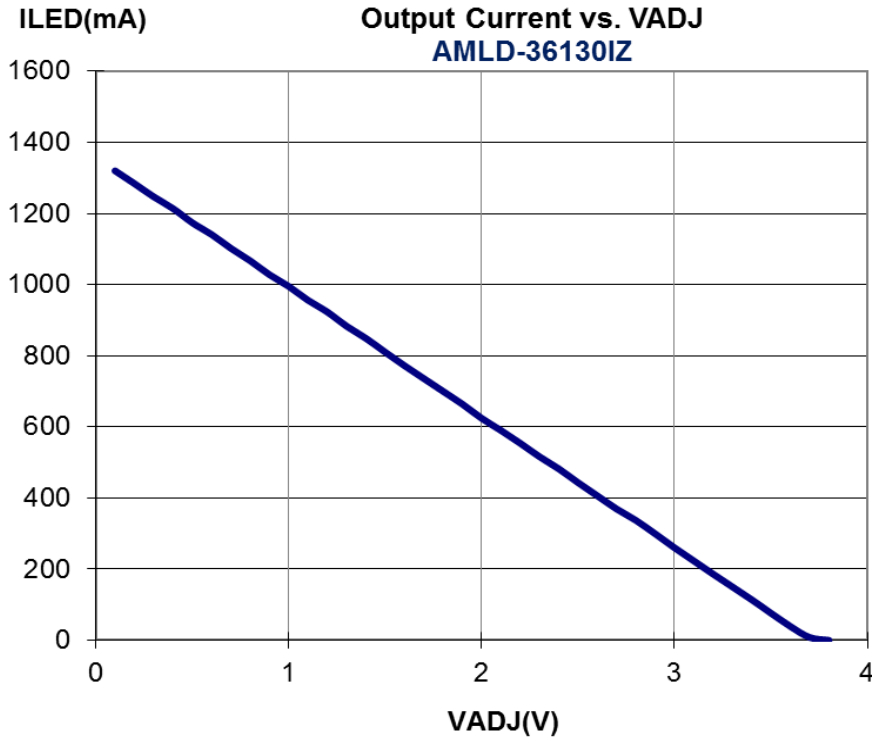
**Output Current versus Dimming Voltage (continued)**



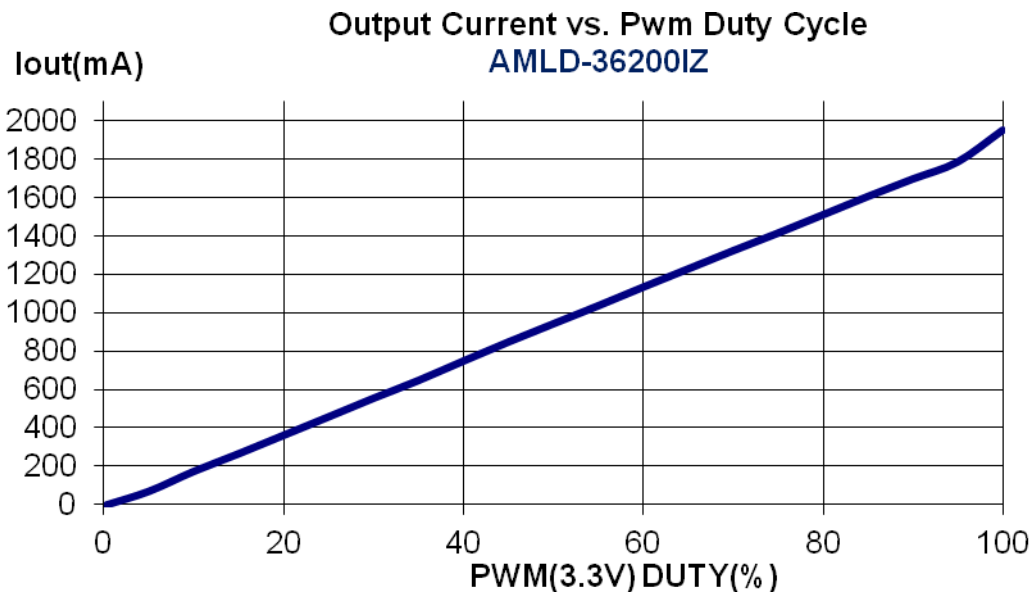
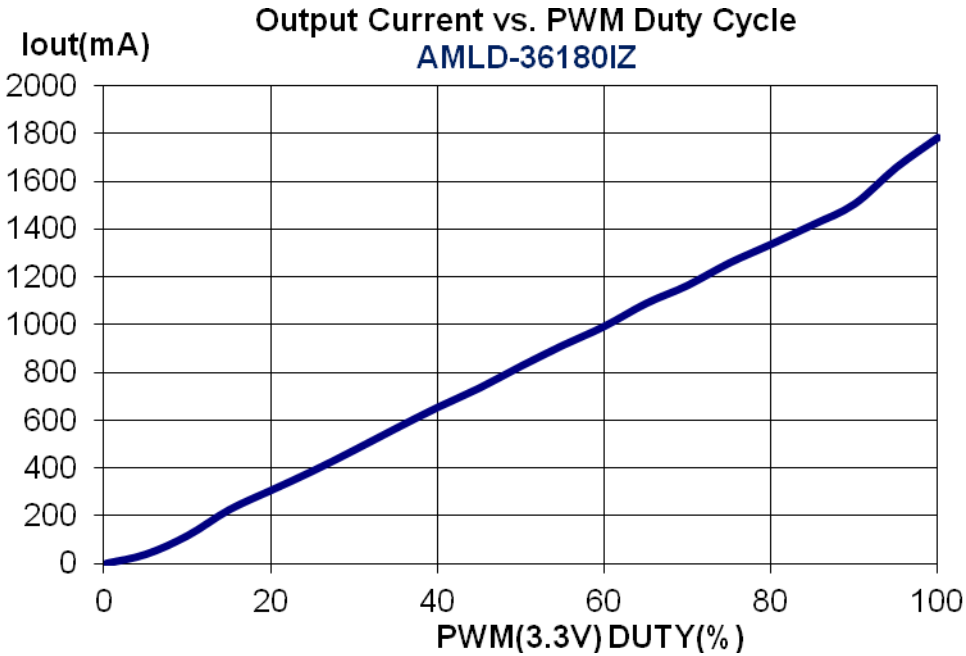
**Output Current versus Dimming Voltage (continued)**



**Output Current versus Dimming Voltage (continued)**



**Output Current versus Dimming Voltage (continued)**



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