

**CURRENT REGULATOR DIODES – LEADLESS PACKAGE FOR SURFACE MOUNT**  
**– METALLURGICALLY BONDED**

Qualified per MIL-PRF-19500/463

DEVICES

**1N5283UR-1 Thru 1N5314UR-1**  
**CDLL5283 Thru CDLL5314**

QUALIFIED LEVELS

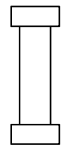
**JAN**  
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**MAXIMUM RATING AT 25°C**

Operating Temperature: -65°C to +175°C  
 Storage Temperature: -65°C to +175°C  
 DC Power Dissipation: 500mW @ +75°C @ T<sub>EC</sub> = +125°C  
 Power Derating: 10mW / °C above T<sub>EC</sub> = +125°C  
 Peak Operating Voltage: 100 Volts

**ELECTRICAL CHARACTERISTICS (TA = 25°C, unless otherwise specified)**

| TYPE NUMBER | REGULATOR CURRENT<br>I <sub>p</sub> (mA) @ V <sub>S</sub> = 25V |       |       | MINIMUM DYNAMIC IMPEDANCE<br>@ V <sub>S</sub> = 25<br>Z <sub>S</sub> (M)<br>(Note 1) | MINIMUM KNEE IMPEDANCE<br>@ V <sub>K</sub> = 6.0V<br>Z <sub>K</sub> (M)<br>(Note 2) | MAXIMUM LIMITING VOLTAGE<br>@ I <sub>L</sub> = 0.8 I <sub>p</sub> (min)<br>V <sub>L</sub> (VOLTS) |
|-------------|-----------------------------------------------------------------|-------|-------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
|             | NOM                                                             | MIN   | MAX   |                                                                                      |                                                                                     |                                                                                                   |
| CDLL5283    | 0.22                                                            | 0.198 | 0.242 | 25.0                                                                                 | 2.75                                                                                | 1.00                                                                                              |
| CDLL5284    | 0.24                                                            | 0.216 | 0.264 | 19.0                                                                                 | 2.35                                                                                | 1.00                                                                                              |
| CDLL5285    | 0.27                                                            | 0.243 | 0.297 | 14.0                                                                                 | 1.95                                                                                | 1.00                                                                                              |
| CDLL5286    | 0.30                                                            | 0.270 | 0.330 | 9.0                                                                                  | 1.60                                                                                | 1.00                                                                                              |
| CDLL5287    | 0.33                                                            | 0.297 | 0.363 | 6.6                                                                                  | 1.35                                                                                | 1.00                                                                                              |
| CDLL5288    | 0.39                                                            | 0.351 | 0.429 | 4.10                                                                                 | 1.00                                                                                | 1.05                                                                                              |
| CDLL5289    | 0.43                                                            | 0.387 | 0.473 | 3.30                                                                                 | 0.870                                                                               | 1.05                                                                                              |
| CDLL5290    | 0.47                                                            | 0.423 | 0.517 | 2.70                                                                                 | 0.750                                                                               | 1.05                                                                                              |
| CDLL5291    | 0.56                                                            | 0.504 | 0.616 | 1.90                                                                                 | 0.560                                                                               | 1.10                                                                                              |
| CDLL5292    | 0.62                                                            | 0.558 | 0.682 | 1.55                                                                                 | 0.470                                                                               | 1.13                                                                                              |
| CDLL5293    | 0.68                                                            | 0.612 | 0.748 | 1.35                                                                                 | 0.400                                                                               | 1.15                                                                                              |
| CDLL5294    | 0.75                                                            | 0.675 | 0.825 | 1.15                                                                                 | 0.335                                                                               | 1.20                                                                                              |
| CDLL5295    | 0.82                                                            | 0.738 | 0.902 | 1.00                                                                                 | 0.290                                                                               | 1.25                                                                                              |
| CDLL5296    | 0.91                                                            | 0.819 | 1.001 | 0.880                                                                                | 0.240                                                                               | 1.29                                                                                              |
| CDLL5297    | 1.00                                                            | 0.900 | 1.100 | 0.800                                                                                | 0.205                                                                               | 1.35                                                                                              |
| CDLL5298    | 1.10                                                            | 0.990 | 1.210 | 0.700                                                                                | 0.180                                                                               | 1.40                                                                                              |
| CDLL5299    | 1.20                                                            | 1.08  | 1.32  | 0.640                                                                                | 0.155                                                                               | 1.45                                                                                              |
| CDLL5300    | 1.30                                                            | 1.17  | 1.43  | 0.580                                                                                | 0.135                                                                               | 1.50                                                                                              |
| CDLL5301    | 1.40                                                            | 1.26  | 1.54  | 0.540                                                                                | 0.115                                                                               | 1.55                                                                                              |
| CDLL5302    | 1.50                                                            | 1.35  | 1.65  | 0.510                                                                                | 0.105                                                                               | 1.60                                                                                              |
| CDLL5303    | 1.60                                                            | 1.44  | 1.76  | 0.475                                                                                | 0.092                                                                               | 1.65                                                                                              |
| CDLL5304    | 1.80                                                            | 1.62  | 1.98  | 0.420                                                                                | 0.074                                                                               | 1.75                                                                                              |
| CDLL5305    | 2.00                                                            | 1.80  | 2.20  | 0.395                                                                                | 0.061                                                                               | 1.85                                                                                              |
| CDLL5306    | 2.20                                                            | 1.98  | 2.42  | 0.370                                                                                | 0.052                                                                               | 1.95                                                                                              |
| CDLL5307    | 2.40                                                            | 2.16  | 2.64  | 0.345                                                                                | 0.044                                                                               | 2.00                                                                                              |
| CDLL5308    | 2.70                                                            | 2.43  | 2.97  | 0.320                                                                                | 0.035                                                                               | 2.15                                                                                              |
| CDLL5309    | 3.00                                                            | 2.70  | 3.30  | 0.300                                                                                | 0.029                                                                               | 2.25                                                                                              |
| CDLL5310    | 3.30                                                            | 2.97  | 3.63  | 0.280                                                                                | 0.024                                                                               | 2.35                                                                                              |
| CDLL5311    | 3.60                                                            | 3.24  | 3.96  | 0.265                                                                                | 0.020                                                                               | 2.50                                                                                              |
| CDLL5312    | 3.90                                                            | 3.51  | 4.29  | 0.255                                                                                | 0.017                                                                               | 2.60                                                                                              |
| CDLL5313    | 4.30                                                            | 3.87  | 4.73  | 0.245                                                                                | 0.014                                                                               | 2.75                                                                                              |
| CDLL5314    | 4.70                                                            | 4.23  | 5.17  | 0.235                                                                                | 0.012                                                                               | 2.90                                                                                              |



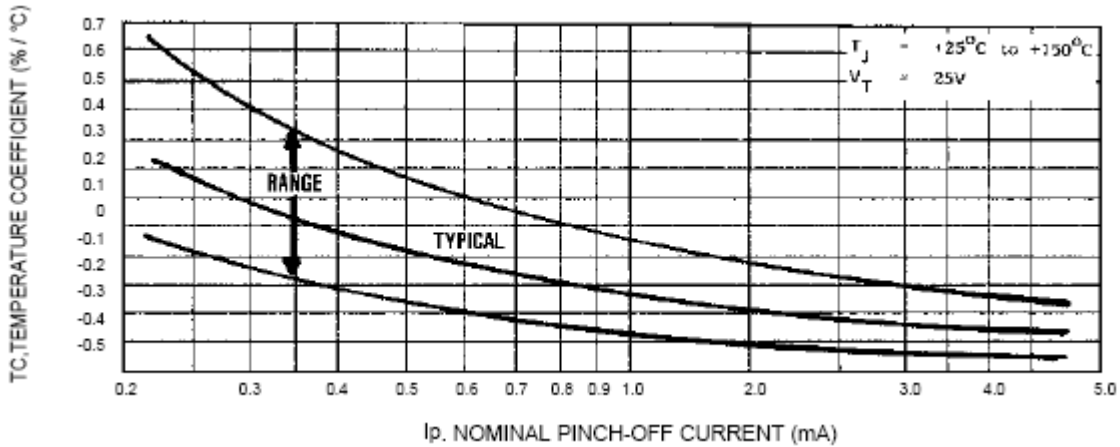
DO-213AB

**NOTE 1:** Z<sub>S</sub> is derived by superimposing A 90Hz RMS signal equal to 10% of V<sub>S</sub> on V<sub>S</sub>

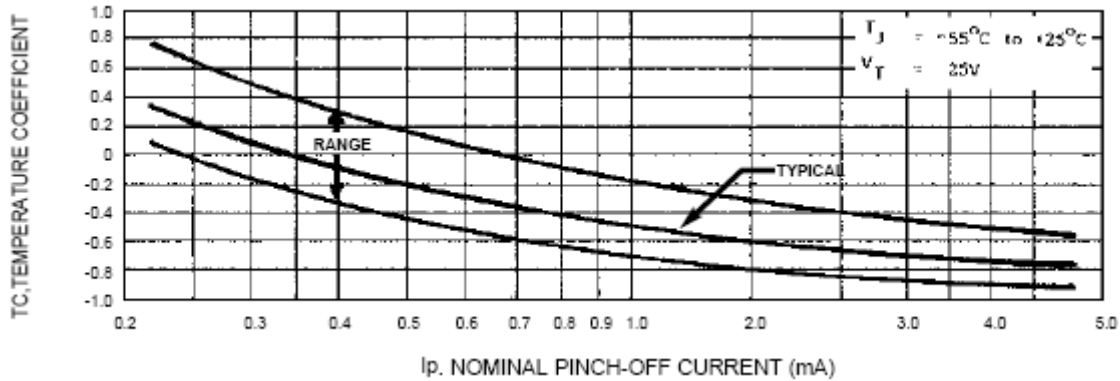
**NOTE 2:** Z<sub>K</sub> is derived by superimposing A 90Hz RMS signal equal to 10% of V<sub>K</sub> on V<sub>K</sub>

## GRAPHS

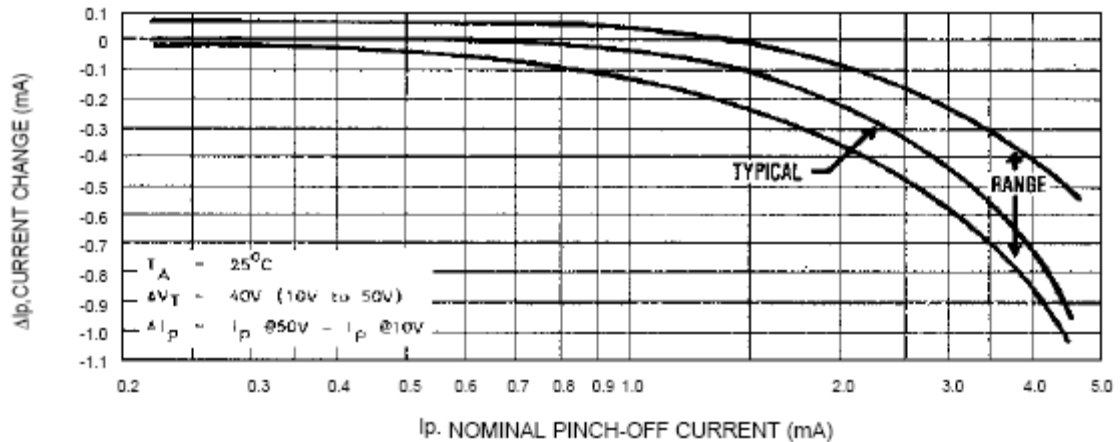
**FIGURE 2: TEMPERATURE COEFFICIENT**

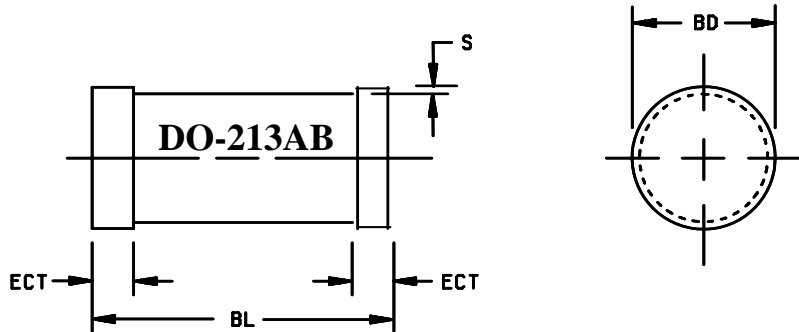


**FIGURE 3: TEMPERATURE COEFFICIENT**



**FIGURE 4: CURRENT REGULATION FACTOR**



**PACKAGE DIMENSIONS**

**NOTE:**

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. In accordance with ASME Y14.5M, diameters are equivalent to  $\Phi x$  symbology.

| Ltr | Dimensions |      |             |      |
|-----|------------|------|-------------|------|
|     | Inches     |      | Millimeters |      |
|     | Min        | Max  | Min         | Max  |
| BD  | .094       | .105 | 2.39        | 2.67 |
| BL  | .189       | .205 | 4.80        | 5.21 |
| ECT | .016       | .022 | 0.41        | 0.55 |
| S   | .001 min   |      | 0.03 min    |      |

**FIGURE 1.** Physical dimensions (DO-213AB).

**DESIGN DATA**

**CASE:** DO-213AB, Hermetically sealed glass case. (MELF, LL41).

**LEAD FINISH:** Tin / Lead

**THERMAL RESISTANCE:** ( $R_{\theta EC}$ ): 50°C/W maximum at L = 0 inch

**THERMAL IMPEDANCE:** ( $Z_{\theta JX}$ ): 25°C/W maximum

**POLARITY:** Diode to be operated with the banded (Cathode) end negative.

**MOUNTING SURFACE SELECTION:** The Axial Coefficient of Expansion (COE) of this device is approximately +6PPM/°C. The COE of the Mounting Surface System should be selected to provide A suitable match with this device.