

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                   |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| SPECIFICATION SHEET NO.          | T0813 – 1SMA4742AL742A                                                                                                                                                                                                                                                                                                                                                                             |                                                   |
| ORIGINAL MFG/PART NO.            |  LGE Diodes/1SMA4742A-L                                                                                                                                                                                                                                                                                           |                                                   |
| NEXTGEN PART CODE                | 1SMA4742AL742A                                                                                                                                                                                                                                                                                                                                                                                     | Indicate This Code For <a href="#">RFQ</a> /Order |
| DATE                             | Aug. 13, 2026                                                                                                                                                                                                                                                                                                                                                                                      |                                                   |
| REVISION                         | A2                                                                                                                                                                                                                                                                                                                                                                                                 | Updated With Most Recent Data                     |
| DESCRIPTION AND MAIN PARAMETRICS | <p>SMD Zener Diodes, Case DO-214AC/SMA, 1SMA Series, 2 Pads</p> <p>Zener reverse voltage (Nom) (Vzt): 12V,</p> <p>Power Dissipation at Ta=50°C: 1.0 Watts.</p> <p>Junction and Storage Temperature Range (TJ, TSTG): -55°C ~+150°C</p> <p>Package in Tape/Reel, 5000pcs/Reel</p> <p>RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)</p> |                                                   |
| CUSTOMER                         |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                   |
| CUSTOMER PART NUMBER             |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                   |
| CROSS REF. PART NUMBER           |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                   |
| MEMO                             |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                   |

|                               |                                                                                     |                                                                                      |                                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| VENDOR APPROVE                |                                                                                     |                                                                                      |                                                                                       |
| Issued/Checked/Approved       |  |  |  |
| Effective Date: Aug. 13, 2026 |                                                                                     |                                                                                      |                                                                                       |

|                  |  |
|------------------|--|
| CUSTOMER APPROVE |  |
|                  |  |
| Date:            |  |

## MAIN FEATURE

- Small Plastic Package Suitable For Surface Mounted Design.
- Built-in Strain Relief
- Glass Passivated Junction
- Low Inductance
- 1.0W Total Power Dissipation
- Wide Zener Reverse Voltage Range 3.3V To 330V.
- High temperature soldering guaranteed: 260°C / 10 seconds
- Meet MSL 1 Requirement
- Cross Competitors Parts and More.
- RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)



*Image shown is a representation only. Exact specifications should be obtained from the product dimension.*



## APPLICATION

- For Printed Circuit Board

## ELECTRICAL CHARACTERISTICS

- See Page 5 ~ Page 8 For Different Part Code.
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

## HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code 1SMA4742AL742A For RFQ and Order.

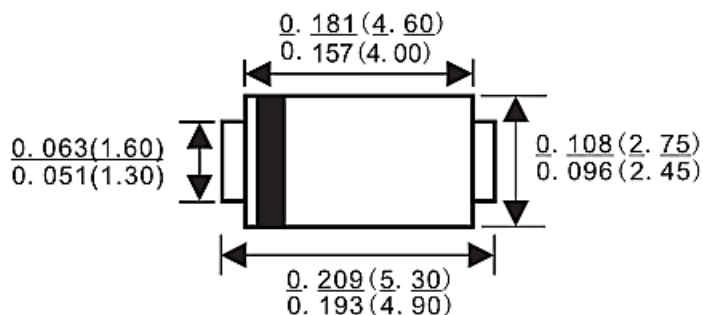
## PART CODE GUIDE

**RFQ**  
[Request For Quotation](#)

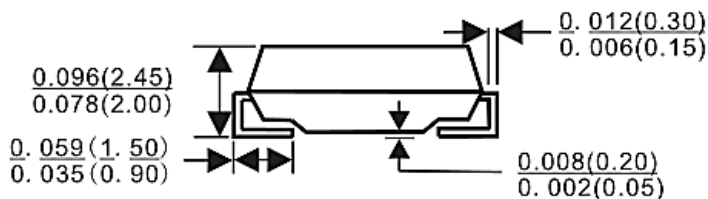
| CODE  | NAME                           | KEY SPECIFICATION OPTION                                                 |
|-------|--------------------------------|--------------------------------------------------------------------------|
| 1SMA  | Product Series Code            | SMD Zener Series Diodes, Case DO-214AC/SMA, 2 Pads, 1SMA series          |
| 4742A | Parameters Code                | Letter or Digits (A~Z, a~z or 0~9)                                       |
| L     | Internal Control Code          | Letter or Digits (A~Z, a~z or 0~9)                                       |
| 742A  | Marking Code                   | Marking “742A”                                                           |
| XX    | Special/Custom Parameters Code | Letter or Digits (A~Z, a~z or 0~9) for Special Parametric;<br>Blank: N/A |

DIMENSION - Unit: mm, Case DO-214AC/SMA, Inch/mm

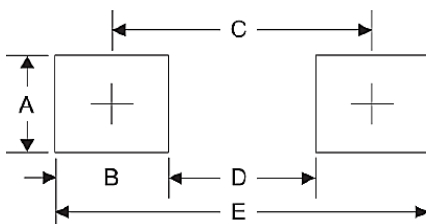
Top View



Side View



Recommend Pad Layout



| SYMBOL      | A     | B     | C     | D     | E     |
|-------------|-------|-------|-------|-------|-------|
| Unit (Inch) | 0.066 | 0.060 | 0.154 | 0.095 | 0.215 |
| Unit (mm)   | 1.68  | 1.52  | 3.9   | 2.41  | 5.45  |

**MECHANICAL DATA**

| CASE                                   | TERMINALS                               | POLARITY                        | MOUNTING POSITION | WEIGHT PER PIECE            |
|----------------------------------------|-----------------------------------------|---------------------------------|-------------------|-----------------------------|
| JEDEC SMA/DO-214AC molded plastic body | Solderable per MIL-STD-750, Method 2026 | Polarity symbol marking on body | Any               | 0.002 Ounce,<br>0.055 Grams |

**MAX. RATINGS & CHARACTERISTICS** -Ratings at 25 °C Ambient Temperature Unless Otherwise Specified.

| Parameter                               | SYMBOLS          | VALUE      | UNITS |
|-----------------------------------------|------------------|------------|-------|
| Power Dissipation at TA=50°C            | P <sub>D</sub>   | 1.0        | W     |
| Forward Voltage @ I <sub>F</sub> =200mA | V <sub>F</sub>   | 1.2        | V     |
| Operating Junction Temperature Range    | T <sub>J</sub>   | -55 ~ +150 | °C    |
| Storage Temperature Range               | T <sub>stg</sub> | -55 ~ +150 | °C    |

**MAX. RATINGS & ELECTRICAL CHARACTERISTICS at Ta = 25°C - FOR DIFFERENT PART CODE**

| Part Code      | Zener Voltage Range<br>(See Note 1)<br>V <sub>ZT</sub> @ I <sub>ZT</sub><br>(V) |     |      | Test<br>Current<br>I <sub>ZT</sub><br>(mA) | Dynamic<br>Impedance<br>Max. Z <sub>T</sub><br>@ I <sub>ZT</sub><br>(Ω) | Reverse<br>Current             |                            | Admissible<br>Zener<br>Current<br>I <sub>ZM</sub><br>(mA) | Marking<br>Code |
|----------------|---------------------------------------------------------------------------------|-----|------|--------------------------------------------|-------------------------------------------------------------------------|--------------------------------|----------------------------|-----------------------------------------------------------|-----------------|
|                | Min.                                                                            | Nom | Max. |                                            |                                                                         | Max.<br>I <sub>R</sub><br>(μA) | @<br>V <sub>R</sub><br>(V) |                                                           |                 |
| 1SMA4728AL728A | 3.1                                                                             | 3.3 | 3.5  | 75                                         | 10                                                                      | 100                            | 1                          | 285                                                       | 728A            |
| 1SMA4729AL729A | 3.4                                                                             | 3.6 | 3.8  | 69                                         | 10                                                                      | 100                            | 1                          | 263                                                       | 729A            |
| 1SMA4730AL730A | 3.7                                                                             | 3.9 | 4.1  | 64                                         | 9                                                                       | 50                             | 1                          | 243                                                       | 730A            |
| 1SMA4731AL731A | 4.06                                                                            | 4.3 | 4.56 | 58                                         | 9                                                                       | 25                             | 1                          | 219                                                       | 731A            |
| 1SMA4732AL732A | 4.5                                                                             | 4.7 | 4.93 | 53                                         | 8                                                                       | 10                             | 1                          | 203                                                       | 732A            |
| 1SMA4733AL733A | 4.84                                                                            | 5.1 | 5.36 | 49                                         | 7                                                                       | 10                             | 1                          | 186                                                       | 733A            |
| 1SMA4734AL734A | 5.32                                                                            | 5.6 | 5.92 | 45                                         | 5                                                                       | 10                             | 2                          | 170                                                       | 734A            |
| 1SMA4735AL735A | 5.86                                                                            | 6.2 | 6.51 | 41                                         | 2                                                                       | 10                             | 3                          | 154                                                       | 735A            |
| 1SMA4736AL736A | 6.46                                                                            | 6.8 | 7.18 | 37                                         | 3.5                                                                     | 10                             | 4                          | 140                                                       | 736A            |
| 1SMA4737AL737A | 7.12                                                                            | 7.5 | 7.88 | 34                                         | 4                                                                       | 10                             | 5                          | 127                                                       | 737A            |
| 1SMA4738AL738A | 7.79                                                                            | 8.2 | 8.67 | 31                                         | 4.5                                                                     | 10                             | 6                          | 116                                                       | 738A            |
| 1SMA4739AL739A | 8.6                                                                             | 9.1 | 9.59 | 28                                         | 5                                                                       | 10                             | 7                          | 104                                                       | 739A            |
| 1SMA4740AL740A | 9.5                                                                             | 10  | 10.5 | 25                                         | 7                                                                       | 10                             | 7                          | 95                                                        | 740A            |
| 1SMA4741AL741A | 10.4                                                                            | 11  | 11.6 | 23                                         | 8                                                                       | 5                              | 8                          | 86                                                        | 741A            |
| 1SMA4742AL742A | 11.4                                                                            | 12  | 12.6 | 21                                         | 9                                                                       | 5                              | 9                          | 79                                                        | 742A            |
| 1SMA4743AL743A | 12.4                                                                            | 13  | 14.1 | 19                                         | 10                                                                      | 5                              | 10                         | 71                                                        | 743A            |
| 1SMA4744AL744A | 13.8                                                                            | 15  | 15.8 | 17                                         | 14                                                                      | 5                              | 11                         | 63                                                        | 744A            |
| 1SMA4745AL745A | 15.2                                                                            | 16  | 17.1 | 16                                         | 16                                                                      | 5                              | 12                         | 58                                                        | 745A            |
| 1SMA4746AL746A | 16.8                                                                            | 18  | 19.2 | 14                                         | 20                                                                      | 5                              | 13                         | 52                                                        | 746A            |
| 1SMA4747AL747A | 19                                                                              | 20  | 21.2 | 13                                         | 22                                                                      | 5                              | 15                         | 47                                                        | 747A            |
| 1SMA4748AL748A | 20.8                                                                            | 22  | 23.3 | 12                                         | 23                                                                      | 5                              | 17                         | 43                                                        | 748A            |

**MAX. RATINGS & ELECTRICAL CHARACTERISTICS at Ta = 25°C - FOR DIFFERENT PART CODE**

| Part Code      | Zener Voltage Range<br>(See Note 1)<br>V <sub>ZT</sub> @ I <sub>ZT</sub><br>(V) |     |      | Test<br>Current<br>I <sub>ZT</sub><br>(mA) | Dynamic<br>Impedance<br>Max. Z <sub>T</sub><br>@ I <sub>ZT</sub><br>(Ω) | Reverse<br>Current             |                            | Admissible<br>Zener<br>Current<br>I <sub>ZM</sub><br>(mA) | Marking<br>Code |
|----------------|---------------------------------------------------------------------------------|-----|------|--------------------------------------------|-------------------------------------------------------------------------|--------------------------------|----------------------------|-----------------------------------------------------------|-----------------|
|                | Min.                                                                            | Nom | Max. |                                            |                                                                         | Max.<br>I <sub>R</sub><br>(μA) | @<br>V <sub>R</sub><br>(V) |                                                           |                 |
| 1SMA4749AL749A | 22.8                                                                            | 24  | 26   | 11                                         | 25                                                                      | 5                              | 18                         | 38                                                        | 749A            |
| 1SMA4750AL750A | 25.3                                                                            | 27  | 28.9 | 9.5                                        | 35                                                                      | 5                              | 21                         | 35                                                        | 750A            |
| 1SMA4751AL751A | 28.2                                                                            | 30  | 32   | 8.5                                        | 40                                                                      | 5                              | 23                         | 31                                                        | 751A            |
| 1SMA4752AL752A | 31.3                                                                            | 33  | 34.9 | 7.5                                        | 45                                                                      | 5                              | 25                         | 28                                                        | 752A            |
| 1SMA4753AL753A | 34.2                                                                            | 36  | 37.9 | 7                                          | 50                                                                      | 5                              | 27                         | 26                                                        | 753A            |
| 1SMA4754AL754A | 37.2                                                                            | 39  | 41.5 | 6.5                                        | 60                                                                      | 5                              | 30                         | 24                                                        | 754A            |
| 1SMA4755AL755A | 40.9                                                                            | 43  | 45.6 | 6                                          | 70                                                                      | 1                              | 32                         | 22                                                        | 755A            |
| 1SMA4756AL756A | 44.9                                                                            | 47  | 49.8 | 5.5                                        | 80                                                                      | 1                              | 35                         | 20                                                        | 756A            |
| 1SMA4757AL757A | 48.6                                                                            | 51  | 54   | 5                                          | 95                                                                      | 1                              | 38                         | 18                                                        | 757A            |
| 1SMA4758AL758A | 53.6                                                                            | 56  | 58.8 | 4.5                                        | 110                                                                     | 1                              | 42                         | 17                                                        | 758A            |
| 1SMA4759AL759A | 58.9                                                                            | 62  | 65.6 | 4                                          | 125                                                                     | 1                              | 47                         | 15                                                        | 759A            |
| 1SMA4760AL760A | 64.6                                                                            | 68  | 71.7 | 3.7                                        | 150                                                                     | 1                              | 52                         | 14                                                        | 760A            |
| 1SMA4761AL761A | 71.2                                                                            | 75  | 78.8 | 3.3                                        | 175                                                                     | 1                              | 56                         | 12                                                        | 761A            |
| 1SMA4762AL762A | 77.9                                                                            | 82  | 87   | 3                                          | 200                                                                     | 1                              | 62                         | 11                                                        | 762A            |
| 1SMA4763AL763A | 86                                                                              | 91  | 96   | 2.8                                        | 250                                                                     | 1                              | 69                         | 10                                                        | 763A            |
| 1SMA4764AL764A | 95                                                                              | 100 | 105  | 2.5                                        | 350                                                                     | 1                              | 76                         | 9.5                                                       | 764A            |
| 1SMA4765AL765A | 104                                                                             | 110 | 116  | 2.3                                        | 450                                                                     | 1                              | 84                         | 8.6                                                       | 765A            |
| 1SMA4766AL766A | 114                                                                             | 120 | 127  | 2                                          | 550                                                                     | 1                              | 91                         | 7.8                                                       | 766A            |
| 1SMA4767AL767A | 125                                                                             | 135 | 142  | 1.9                                        | 700                                                                     | 1                              | 100                        | 7                                                         | 767A            |
| 1SMA4768AL768A | 140                                                                             | 150 | 157  | 1.7                                        | 900                                                                     | 1                              | 110                        | 6.3                                                       | 768A            |
| 1SMA4769AL769A | 155                                                                             | 165 | 172  | 1.6                                        | 1100                                                                    | 1                              | 120                        | 5.8                                                       | 769A            |

**MAX. RATINGS & ELECTRICAL CHARACTERISTICS at Ta = 25°C - FOR DIFFERENT PART CODE**

| Part Code      | Zener Voltage Range<br>(See Note 1)<br>V <sub>ZT</sub> @ I <sub>ZT</sub><br>(V) |      |      | Test<br>Current<br>I <sub>ZT</sub><br>(mA) | Dynamic<br>Impedance<br>Max. Z <sub>OT</sub><br>@ I <sub>ZT</sub><br>(Ω) | Reverse<br>Current             |                            | Admissible<br>Zener<br>Current<br>I <sub>ZM</sub><br>(mA) | Marking<br>Code |
|----------------|---------------------------------------------------------------------------------|------|------|--------------------------------------------|--------------------------------------------------------------------------|--------------------------------|----------------------------|-----------------------------------------------------------|-----------------|
|                | Min.                                                                            | Nom. | Max. |                                            |                                                                          | Max.<br>I <sub>R</sub><br>(μA) | @<br>V <sub>R</sub><br>(V) |                                                           |                 |
| 1SMA4770AL770A | 170                                                                             | 180  | 191  | 1.4                                        | 1200                                                                     | 1                              | 135                        | 5.2                                                       | 770A            |
| 1SMA4771AL771A | 189                                                                             | 200  | 211  | 1.2                                        | 1400                                                                     | 1                              | 150                        | 4.7                                                       | 771A            |
| 1SMA4772AL772A | 209                                                                             | 220  | 231  | 1                                          | 1600                                                                     | 1                              | 165                        | 4.3                                                       | 772A            |
| 1SMA4773AL773A | 229                                                                             | 240  | 251  | 1                                          | 1800                                                                     | 1                              | 180                        | 3.9                                                       | 773A            |
| 1SMA4774AL774A | 249                                                                             | 260  | 271  | 1                                          | 2000                                                                     | 1                              | 190                        | 3.7                                                       | 774A            |
| 1SMA4775AL775A | 269                                                                             | 280  | 291  | 1                                          | 2100                                                                     | 1                              | 205                        | 3.4                                                       | 775A            |
| 1SMA4776AL776A | 289                                                                             | 300  | 315  | 1                                          | 2300                                                                     | 1                              | 230                        | 3.1                                                       | 776A            |
| 1SMA4777AL777A | 313                                                                             | 330  | 346  | 1                                          | 2500                                                                     | 1                              | 250                        | 2.8                                                       | 777A            |

**Notes**

- Suffix " A " indicates  $\pm 5.0\%$  tolerance..
- The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on I<sub>ZT</sub> per JEDEC Method.
- V<sub>ZT</sub> is tested with pulses (20 ms)

RATINGS AND CHARACTERISTICS CURVES- For Reference Only,  $T_a=25^{\circ}\text{C}$  Unless Otherwise Specified.

Figure 1. Power Temperature Derating Curve

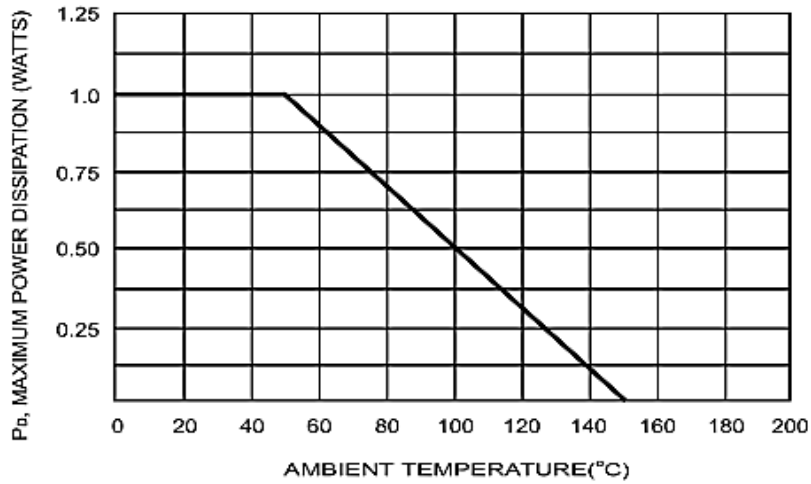
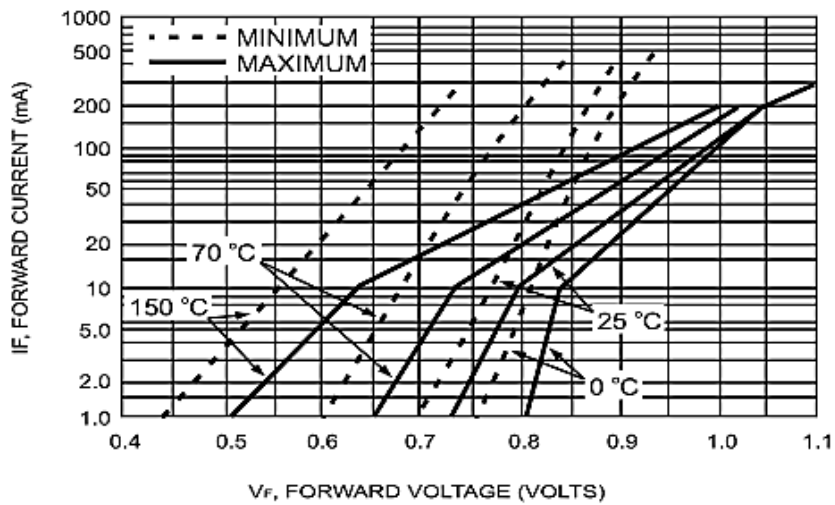


Figure 2. Typical Forward Characteristics Curve



RATINGS AND CHARACTERISTICS CURVES- For Reference Only,  $T_a=25^{\circ}\text{C}$  Unless Otherwise Specified.

Figure 3. Effect Of Zener Current On Zener Impedance Curve

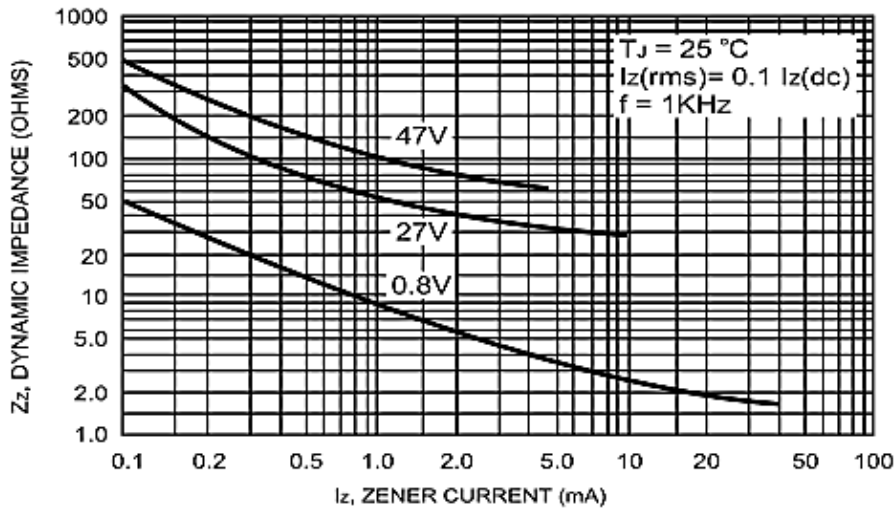
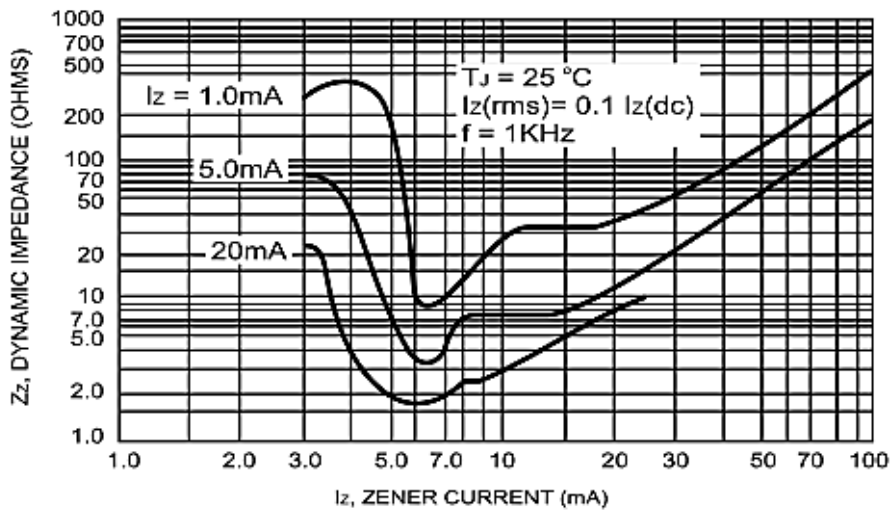
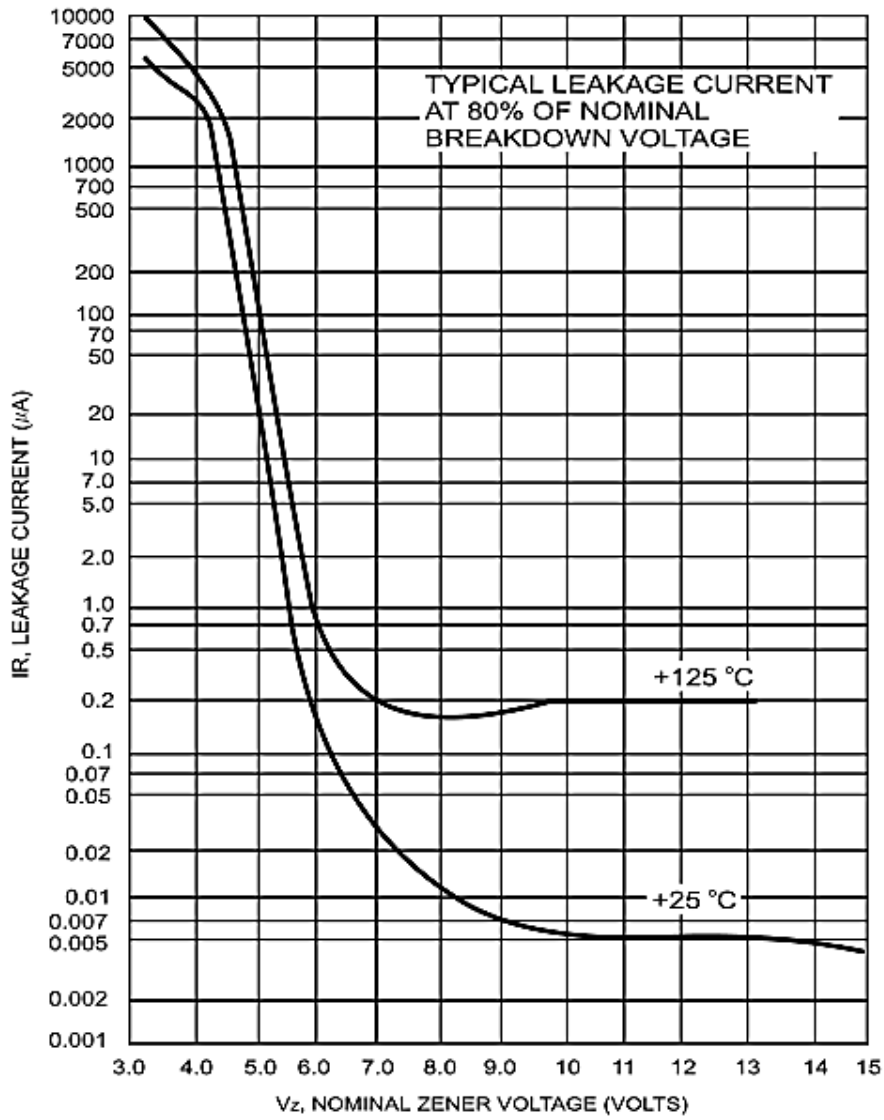


Figure 4. - Effect Of Zener Voltage On Zener Impedance Curve



RATINGS AND CHARACTERISTICS CURVES- For Reference Only, Ta=25°C Unless Otherwise Specified.

Figure 5. Typical Leakage Current Curve



RATINGS AND CHARACTERISTICS CURVES- For Reference Only, Ta=25°C Unless Otherwise Specified.

Figure 6. Typical Capacitance versus Vz Curve

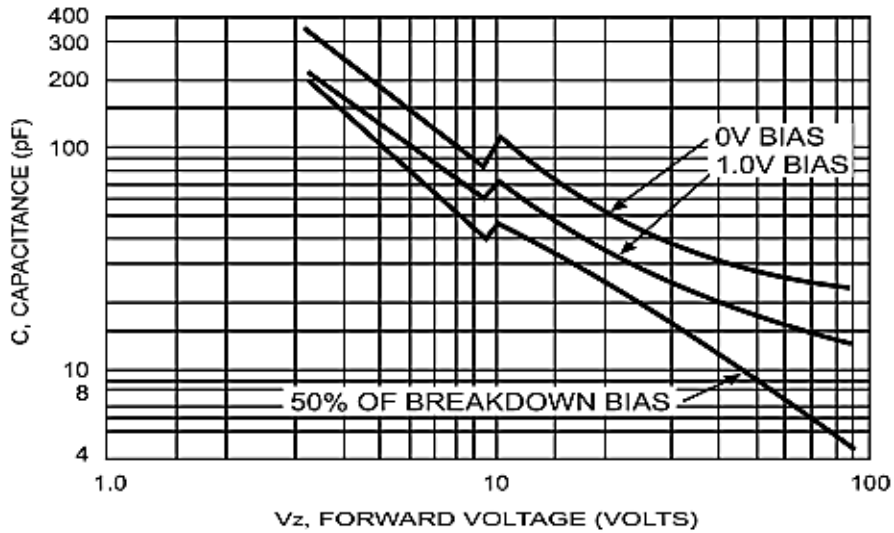
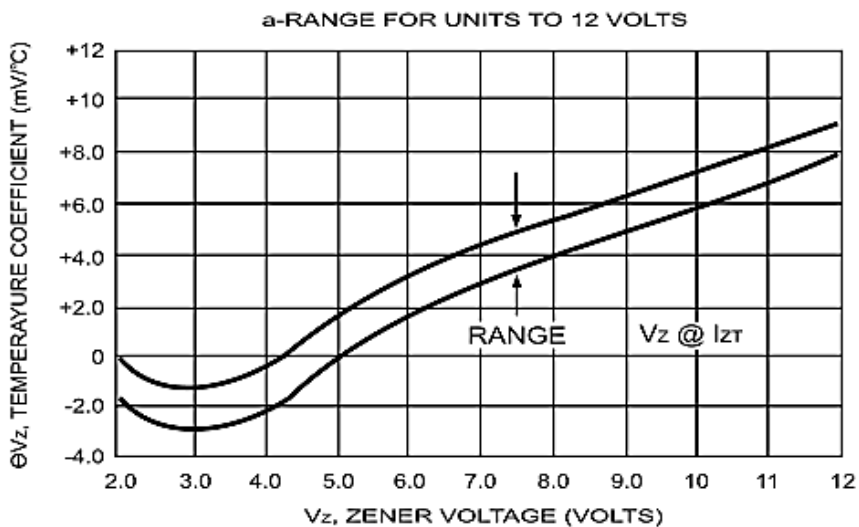


Figure 7. Temperature Coefficients Curve



RATINGS AND CHARACTERISTICS CURVES- For Reference Only,  $T_a=25^\circ\text{C}$  Unless Otherwise Specified.

Figure 8. Temperature Coefficients Curve

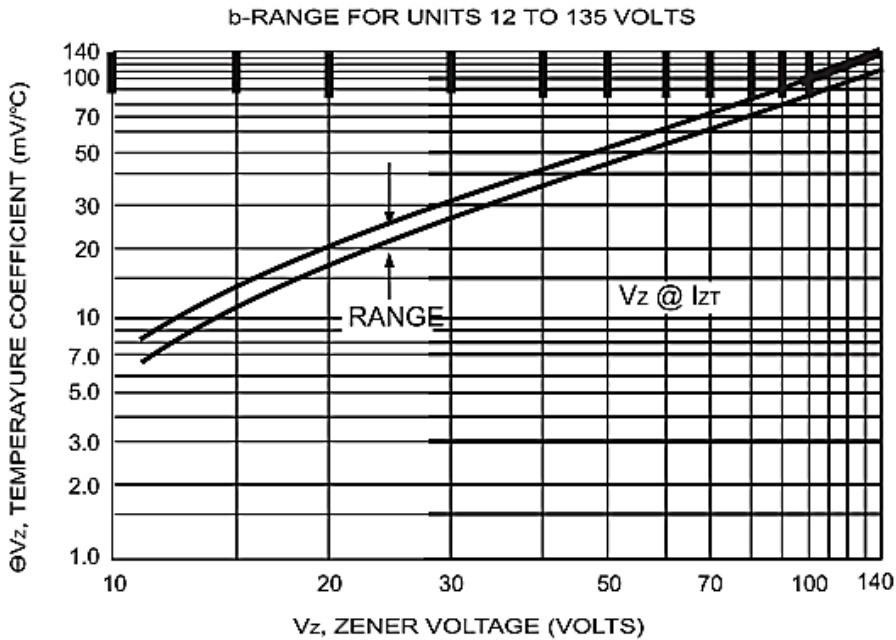
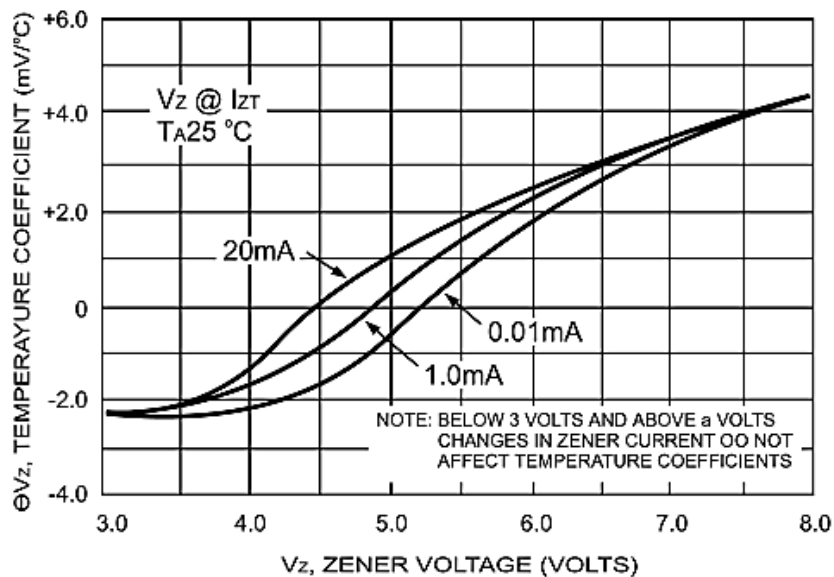
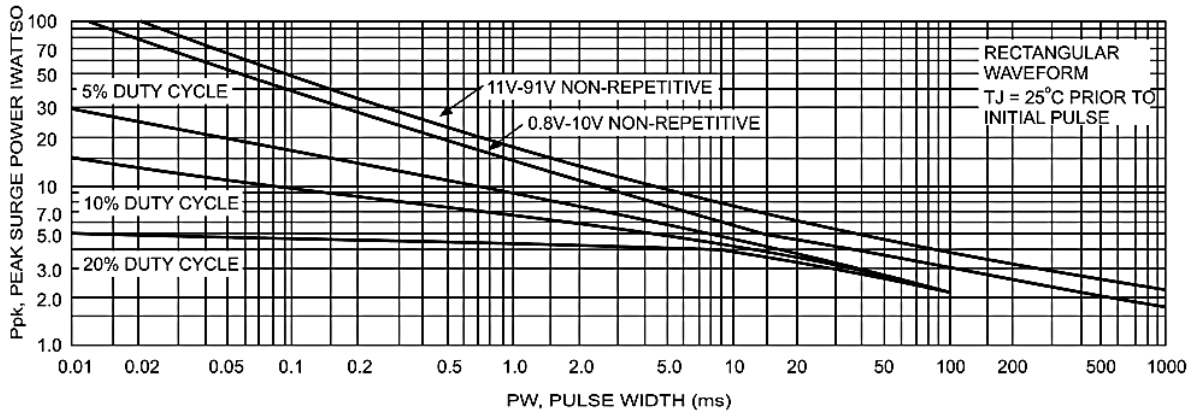


Figure 9. Effect Of Zener Current Curve

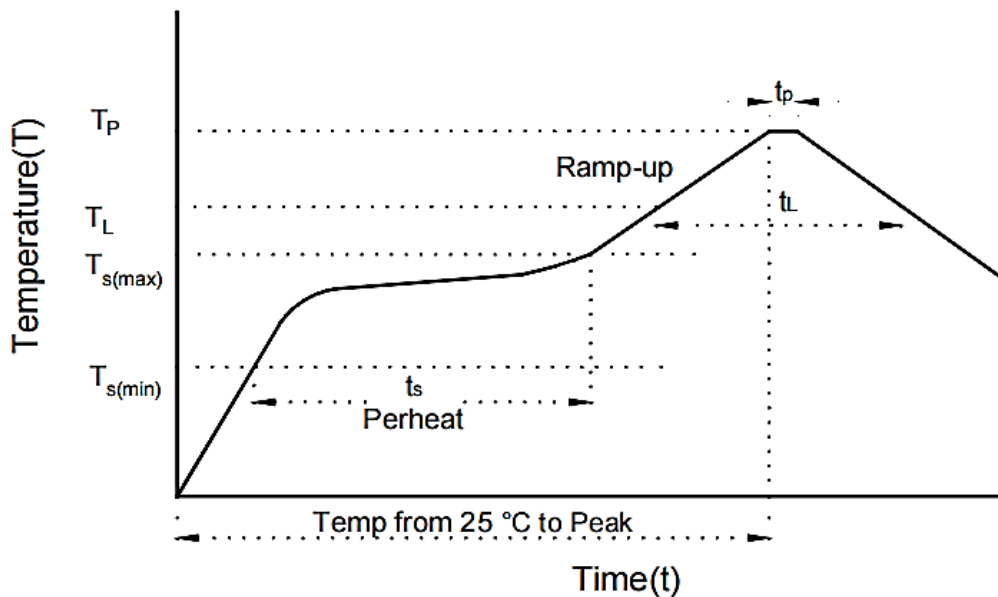


RATINGS AND CHARACTERISTICS CURVES- For Reference Only, Ta=25°C Unless Otherwise Specified.

Figure 10. Maximum Surge Power Curve

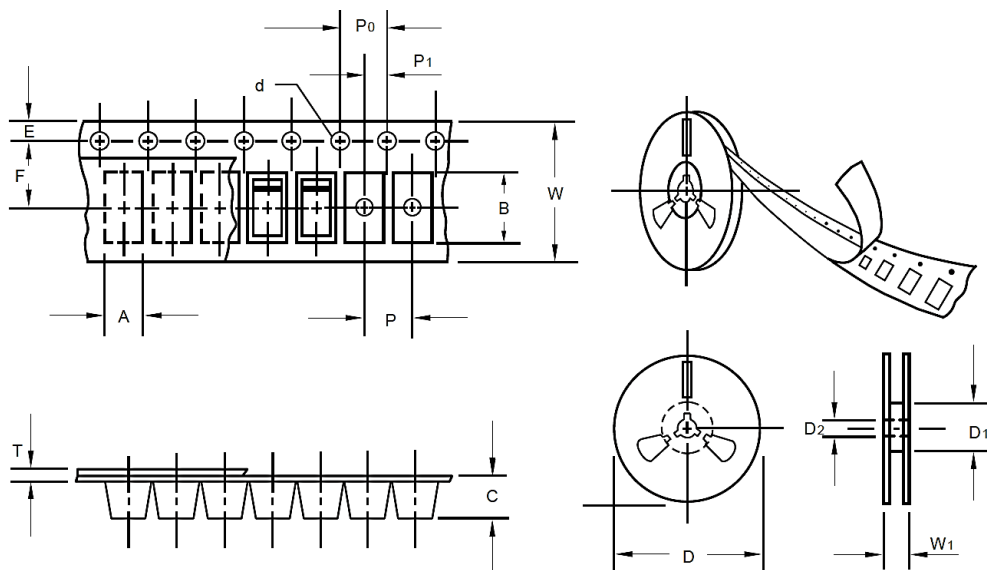


SUGGESTED REFLOW PROFILE - For Reference Only



| PROFILE FEATURE                                      |                                  | PB-FREE ASSEMBLY  |
|------------------------------------------------------|----------------------------------|-------------------|
| Average Ramp-up Rate ( $T_L$ Max to $T_p$ )          |                                  | 3°C/second Max    |
| Preheat                                              | Temperature Min ( $T_s$ Min.)    | 150°C             |
|                                                      | Temperature Max ( $T_s$ Max.)    | 200°C             |
|                                                      | Time ( $t_s$ Min. to $t_s$ Max.) | 60 ~ 180 seconds  |
| Time maintained above                                | Temperature ( $T_L$ )            | 217°C             |
|                                                      | Time ( $t_L$ )                   | 60 ~ 150 seconds  |
| Peak/Classification Temperature ( $T_p$ )            |                                  | 260 °C            |
| Time within 5°C of actual Peak Temperature ( $t_p$ ) |                                  | 10 seconds Max.   |
| Ramp-down Rate                                       |                                  | 6 °C /Second Max. |
| Time 25 °C to Peak Temperature                       |                                  | 8 Minutes Max.    |
| Suggest reflow times                                 |                                  | 3 Times Max.      |

TAPE/REEL - Unit: mm, All Devices are packed in accordance with EIA standard RS-481-A and specifications



| ITEM                     | SYMBOL | TOLERANCE | SMA/DO-214AC |
|--------------------------|--------|-----------|--------------|
| Carrier width            | A      | 0.1       | 2.8          |
| Carrier Length           | B      | 0.1       | 5.33         |
| Carrier Depth            | C      | 0.1       | 2.36         |
| Sprocket hole            | d      | 0.05      | 1.50         |
| 13"Reel outside diameter | D      | 2         | 330          |
| 13"Reel inner diameter   | D1     | Min.      | 50.0         |
| Feed hole diameter       | D2     | 0.5       | 13           |
| Sprocket hole position   | E      | 0.1       | 1.75         |
| Punch hole position      | F      | 0.1       | 5.5          |
| Punch hole pitch         | P      | 0.1       | 4            |
| Sprocket hole pitch      | P0     | 0.1       | 4            |
| Embossment center        | P1     | 0.1       | 2            |
| Overall tape thickness   | T      | 0.1       | 0.28         |
| Tape width               | W      | 0.3       | 12.0         |
| Reel width               | W1     | 1         | 18.0         |
| Qty. Per Reel (pcs)      | 5000   |           |              |

## IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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8. *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.