



1SMA4728~1SMA4757

SURFACE MOUNT SILICON ZENERDIODE

VOLTAGE 3.3 to 51 Volt **POWER** 1 Watt

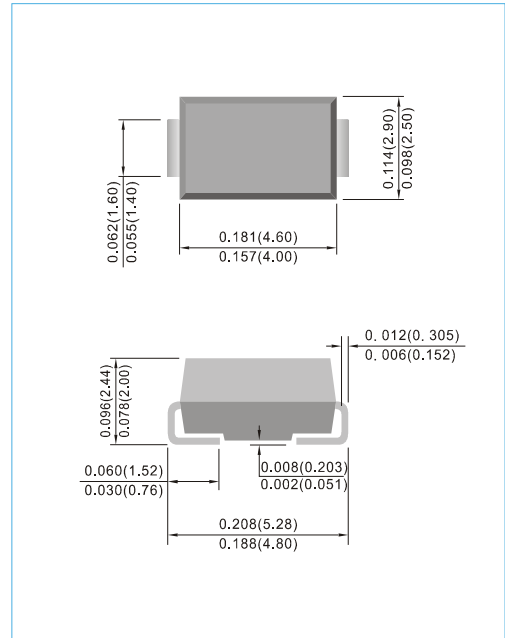
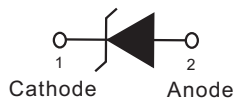
SMA / DO-214AC Unit : inch(mm)

FEATURES

- For surface mounted applications in order to optimize board space
- Low inductance
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

- Case: JEDEC DO-214AC, Molded plastic over passivated junction.
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Standard Packaging: 12mm tape (EIA-481)
- Weight: 0.0023 ounces, 0.0679 grams



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Units |
|--|-----------------|--------------|-------|
| Peak Pulse Power Dissipation on $T_A = 50^\circ\text{C}$ (Notes A) Derate above 50 °C | P_D | 1.0 | Watts |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load | I_{FSM} | 10 | Amps |
| Typical Thermal Resistance (Notes D) | $R_{\theta JA}$ | 150 | °C/W |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55 to + 150 | °C |

NOTES:

- Mounted on 5mm² (0.013mm thick) land areas.
- Measured on 8.3ms, and single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
- Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ± 5%.
- Mounted on minimum recommended pad layout.



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| Part Number | Nominal Zener Voltage | | | Maximum Zener Impedance | | | | Max Reverse Leakage Current | | Marking Code |
|-------------|----------------------------------|--------|--------|-----------------------------------|------|-----------------------------------|------|---------------------------------|------|--------------|
| | V _Z @ I _{ZT} | | | Z _{ZT} @ I _{ZT} | | Z _{ZK} @ I _{ZK} | | I _R @ V _R | | |
| | Nom. V | Min. V | Max. V | Ω | mA | Ω | mA | μA Max. | V | |
| 1SMA4728 | 3.3 | 3.1 | 3.5 | 10 | 76 | 400 | 1 | 100 | 1 | 728B |
| 1SMA4730 | 3.9 | 3.7 | 4.1 | 9 | 64 | 400 | 1 | 50 | 1 | 730B |
| 1SMA4731 | 4.3 | 4.1 | 4.5 | 9 | 58 | 400 | 1 | 10 | 1 | 731B |
| 1SMA4732 | 4.7 | 4.5 | 4.9 | 8 | 53 | 500 | 1 | 10 | 1 | 732B |
| 1SMA4733 | 5.1 | 4.8 | 5.4 | 7 | 49 | 550 | 1 | 10 | 1 | 733B |
| 1SMA4734 | 5.6 | 5.3 | 5.9 | 5 | 45 | 600 | 1 | 10 | 2 | 734B |
| 1SMA4735 | 6.2 | 5.9 | 6.5 | 2 | 41 | 700 | 1 | 10 | 3 | 735B |
| 1SMA4736 | 6.8 | 6.46 | 7.14 | 3.5 | 37 | 700 | 1 | 5 | 4 | 736B |
| 1SMA4737 | 7.5 | 7.13 | 7.88 | 4 | 34 | 700 | 0.5 | 5 | 5 | 737B |
| 1SMA4738 | 8.2 | 7.79 | 8.61 | 4.5 | 31 | 700 | 0.5 | 5 | 6 | 738B |
| 1SMA4739 | 9.1 | 8.65 | 9.56 | 5 | 28 | 700 | 0.5 | 0.5 | 7 | 739B |
| 1SMA4740 | 10 | 9.5 | 10.5 | 7 | 25 | 700 | 0.25 | 0.5 | 7.6 | 740B |
| 1SMA4741 | 11 | 10.45 | 11.55 | 8 | 23 | 700 | 0.25 | 0.1 | 8.4 | 741B |
| 1SMA4742 | 12 | 11.4 | 12.6 | 9 | 21 | 700 | 0.25 | 0.1 | 9.1 | 742B |
| 1SMA4743 | 13 | 12.35 | 13.65 | 10 | 19 | 700 | 0.25 | 0.1 | 9.9 | 743B |
| 1SMA4744 | 15 | 14.25 | 15.75 | 14 | 17 | 700 | 0.25 | 0.1 | 11.4 | 744B |
| 1SMA4745 | 16 | 15.2 | 16.8 | 16 | 15.5 | 700 | 0.25 | 0.1 | 12.2 | 745B |
| 1SMA4746 | 18 | 17.1 | 18.9 | 20 | 14 | 750 | 0.25 | 0.1 | 13.7 | 746B |
| 1SMA4747 | 20 | 19 | 21 | 22 | 12.5 | 750 | 0.25 | 0.1 | 15.2 | 747B |
| 1SMA4748 | 22 | 20.9 | 23.1 | 23 | 11.5 | 750 | 0.25 | 0.1 | 16.7 | 748B |
| 1SMA4749 | 24 | 22.8 | 25.2 | 25 | 10.5 | 750 | 0.25 | 0.1 | 18.2 | 749B |
| 1SMA4750 | 27 | 25.65 | 28.35 | 35 | 9.5 | 750 | 0.25 | 0.1 | 20.6 | 750B |
| 1SMA4751 | 30 | 28.5 | 31.5 | 40 | 8.5 | 1000 | 0.25 | 0.1 | 22.8 | 751B |
| 1SMA4752 | 33 | 31.35 | 34.65 | 45 | 7.5 | 1000 | 0.25 | 0.1 | 25.1 | 752B |
| 1SMA4753 | 36 | 34.2 | 37.8 | 50 | 7 | 1000 | 0.25 | 0.1 | 27.4 | 753B |
| 1SMA4754 | 39 | 37.05 | 40.95 | 60 | 6.5 | 1000 | 0.25 | 0.1 | 29.7 | 754B |
| 1SMA4755 | 43 | 40.85 | 45.15 | 70 | 6 | 1500 | 0.25 | 0.1 | 32.7 | 755B |
| 1SMA4756 | 47 | 44.65 | 49.35 | 80 | 5.5 | 1500 | 0.25 | 0.1 | 35.8 | 756B |
| 1SMA4757 | 51 | 48.45 | 53.55 | 95 | 5 | 1500 | 0.25 | 0.1 | 38.8 | 757B |



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RATING AND CHARACTERISTICS CURVES

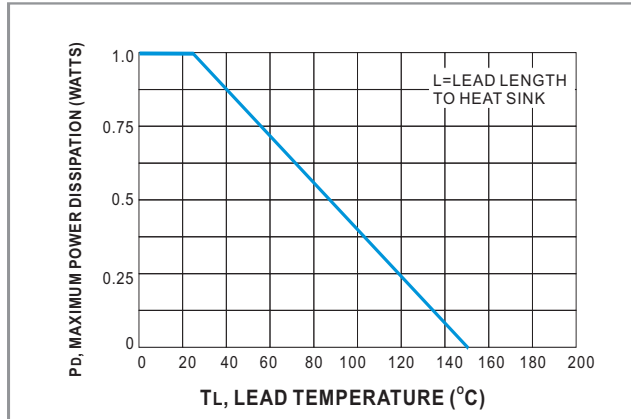


FIGURE.1 POWER TEMPERATURE DERATING CURVE

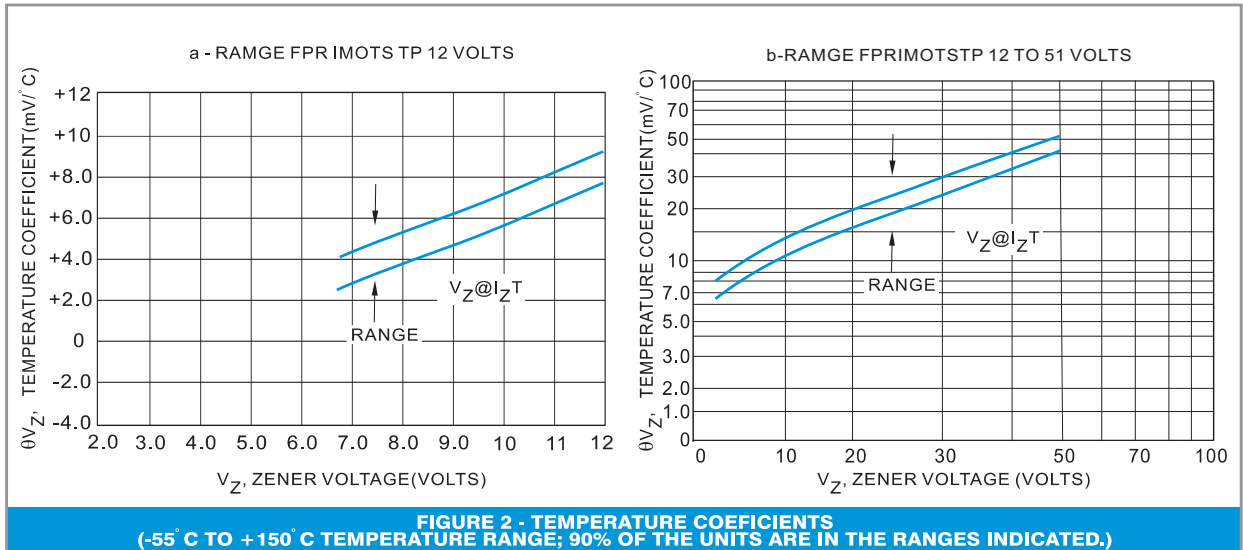


FIGURE 2 - TEMPERATURE COEFFICIENTS (-55° C TO +150° C TEMPERATURE RANGE; 90% OF THE UNITS ARE IN THE RANGES INDICATED.)

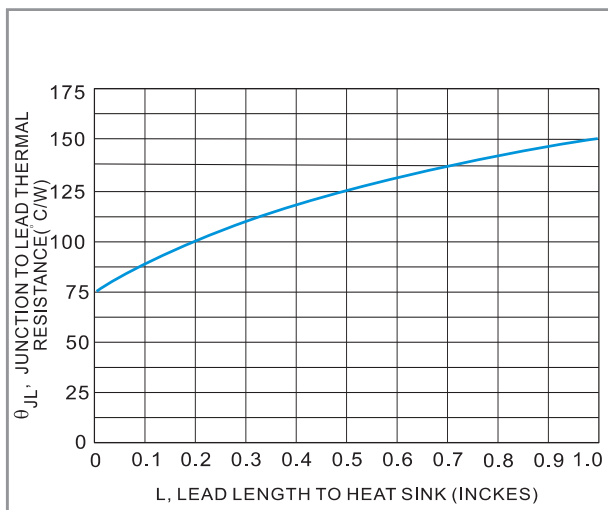


FIGURE 3 - TYPICAL THERMAL RESISTANCE versus LEAD LENGTH

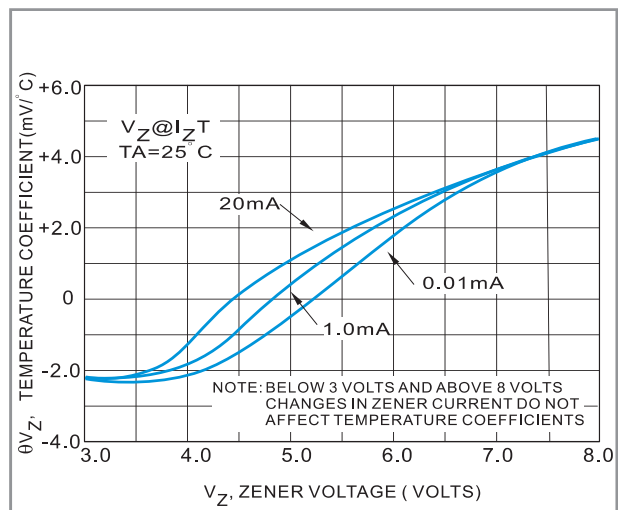
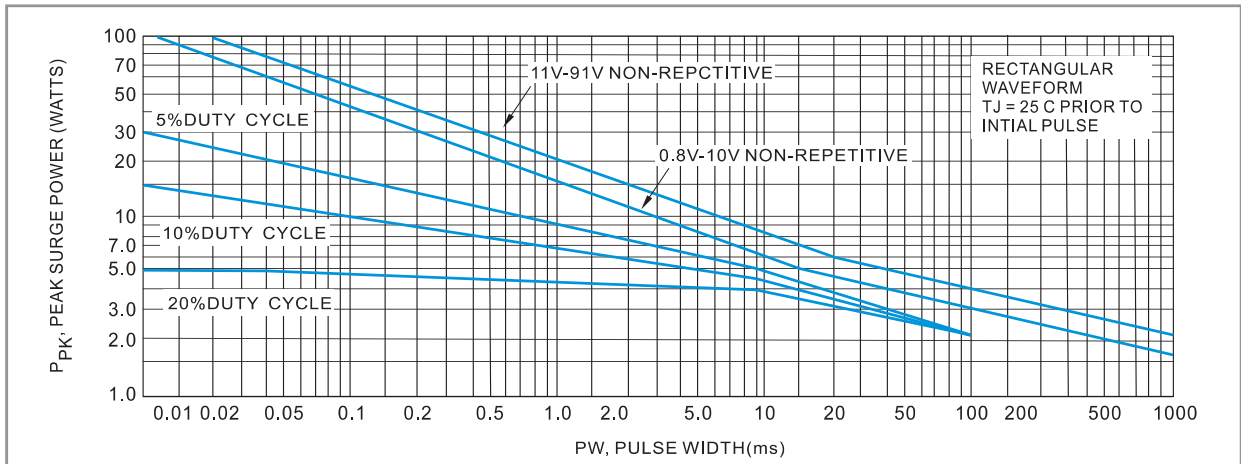


FIGURE 4 - EFFECT OF ZENER CURRENT



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This graph represents 90 percentile data points.
FOR worst-case design characteristics, multiply surge power by 2/3

FIGURE 5 - MAXIMUM SURGE POWER

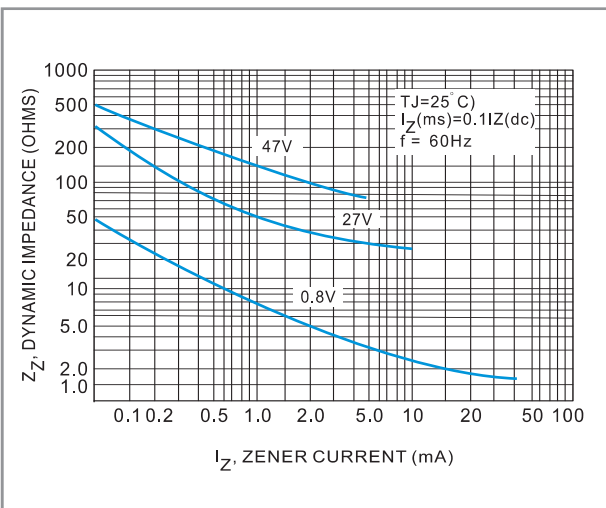


FIGURE 6 - EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

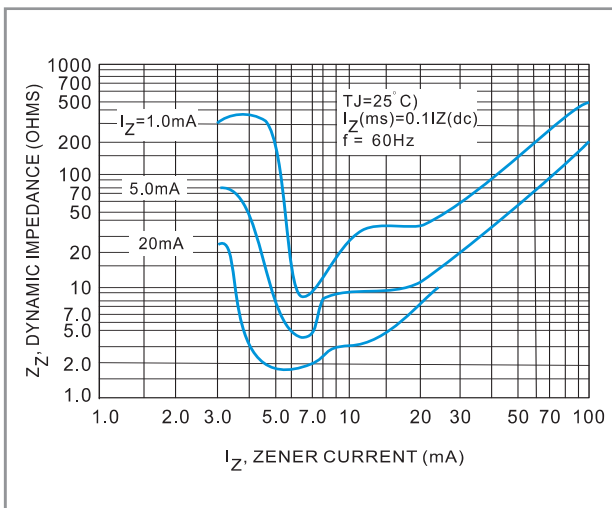


FIGURE 7 - EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



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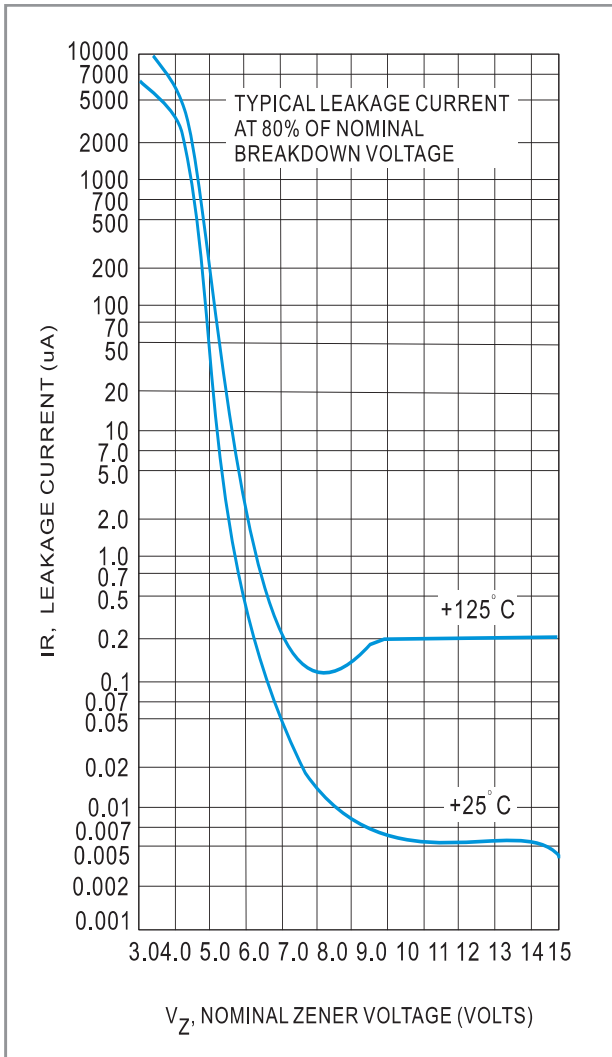


FIGURE 8 - TYPICAL LEAKAGE CURRENT

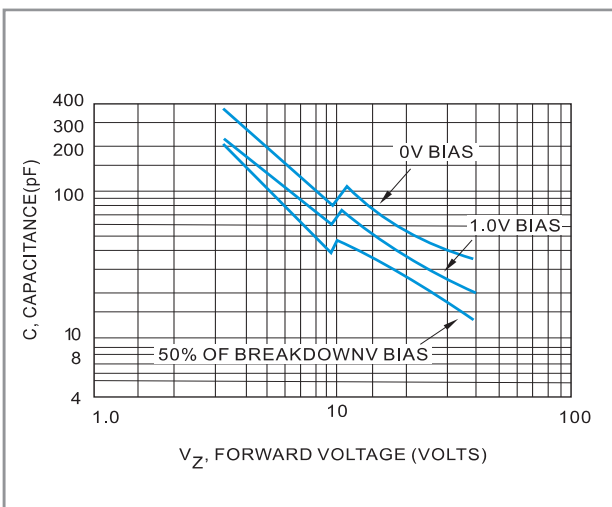


FIGURE 9 - TYPICAL CAPACITANCE versus V_Z

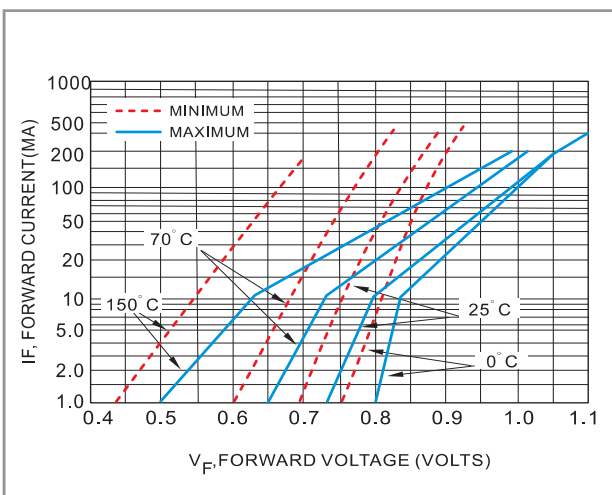


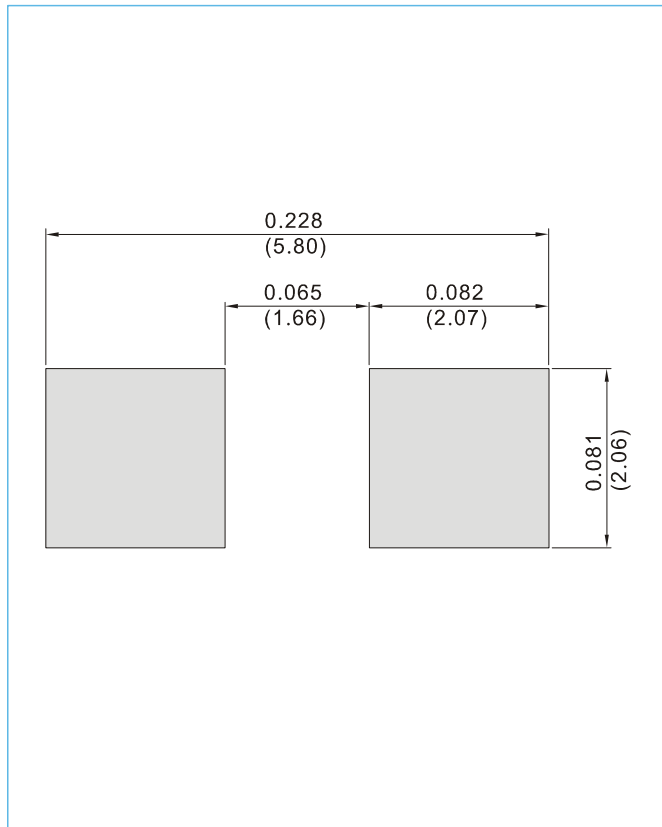
FIGURE 10 - TYPICAL FORWARD CHARACTERISTICS



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MOUNTING PAD LAYOUT

SMA / DO-214AC Unit : inch(mm)



ORDER INFORMATION

- Packing information
T/R - 7.5K per 13" plastic Reel
T/R - 1.8K per 7" plastic Reel

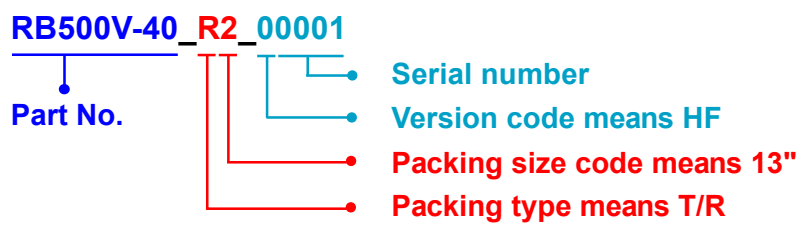


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Part No_packing code_Version

1SMA4728_R1_00001
1SMA4728_R2_00001

For example :



| Packing Code XX | | | | Version Code XXXXX | | |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type | 1 st Code | Packing size code | 2 nd Code | HF or RoHS | 1 st Code | 2 nd ~5 th Code |
| Tape and Ammunition Box (T/B) | A | N/A | 0 | HF | 0 | serial number |
| Tape and Reel (T/R) | R | 7" | 1 | RoHS | 1 | serial number |
| Bulk Packing (B/P) | B | 13" | 2 | | | |
| Tube Packing (T/P) | T | 26mm | X | | | |
| Tape and Reel (Right Oriented) (TRR) | S | 52mm | Y | | | |
| Tape and Reel (Left Oriented) (TRL) | L | PANASERT T/B CATHODE UP (PBCU) | U | | | |
| FORMING | F | PANASERT T/B CATHODE DOWN (PBCD) | D | | | |



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