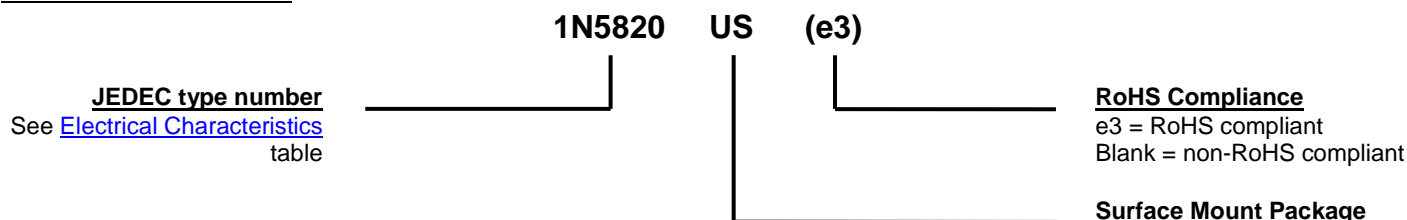
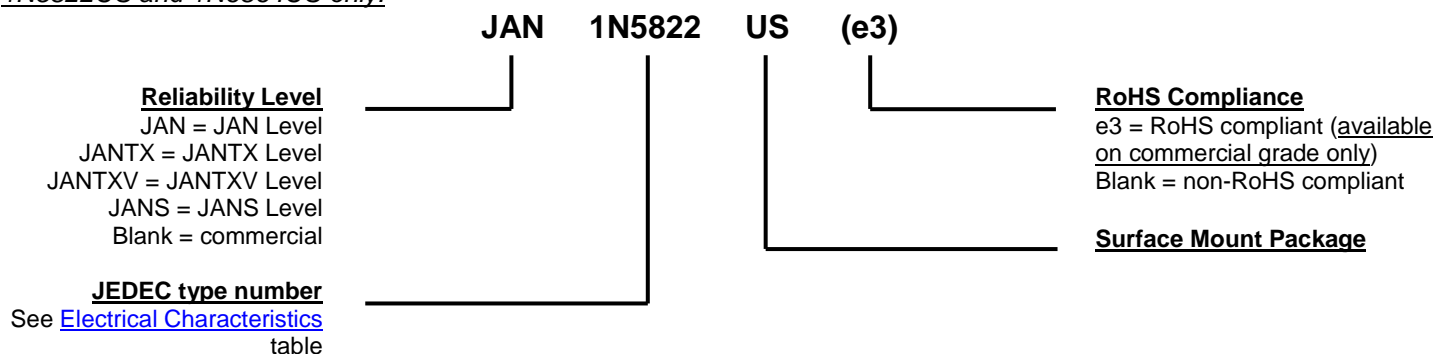


**MECHANICAL and PACKAGING**

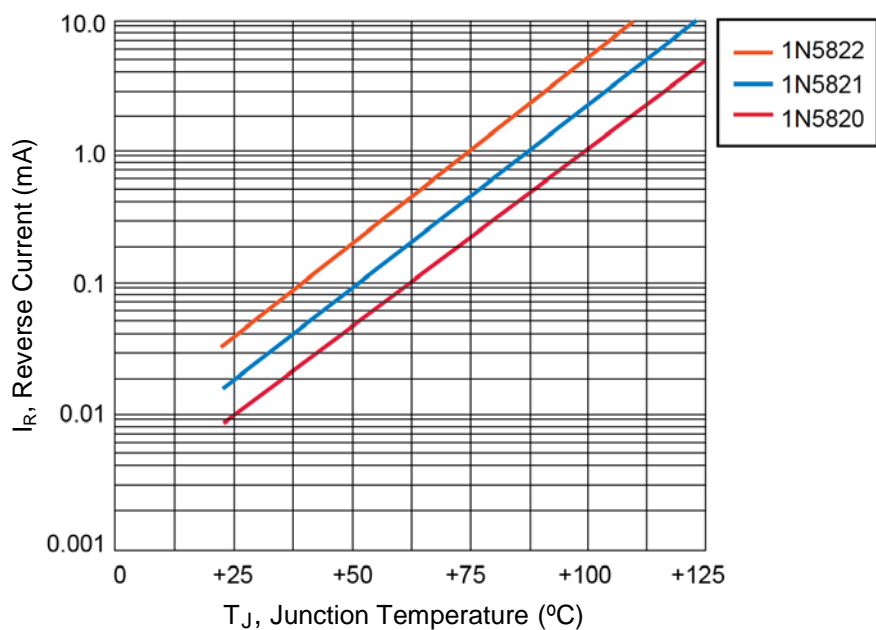
- CASE: Voidless hermetically sealed hard glass.
- TERMINALS: Tin-lead plate with >3% lead. Solder dip is available upon request. RoHS compliant matte-tin is available on commercial levels (no JAN levels).
- MARKING: Body painted and alpha numeric.
- POLARITY: Cathode indicated by band.
- Tape & Reel option: Standard per EIA-481-1-A with 12 mm tape. Consult factory for quantities.
- See [Package Dimensions](#) on last page.

**PART NOMENCLATURE**
1N5820US – 1N5821US

1N5822US and 1N6864US only:

**SYMBOLS & DEFINITIONS**

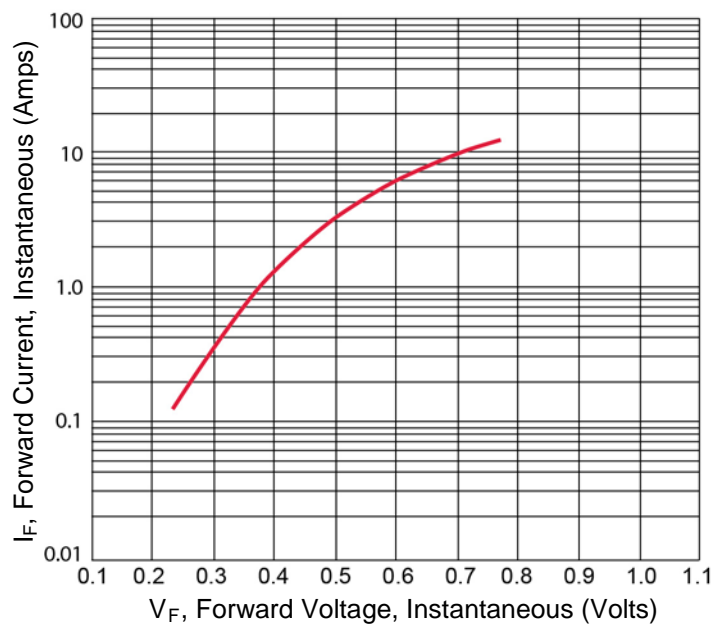
| Symbol           | Definition   |
|------------------|--|
| C <sub>T</sub>   | Capacitance: The capacitance in pF at a frequency of 1 MHz and specified voltage.  |
| f                | frequency  |
| I <sub>R</sub>   | Maximum Reverse Current: The maximum reverse (leakage) current that will flow at the specified voltage and temperature.                                  |
| I <sub>O</sub>   | Average Rectified Output Current: The output current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle. |
| V <sub>F</sub>   | Maximum Forward Voltage: The maximum forward voltage the device will exhibit at a specified current.   |
| V <sub>R</sub>   | Reverse Voltage: The dc voltage applied in the reverse direction below the breakdown region.   |
| V <sub>RWM</sub> | Working Peak Reverse Voltage: The maximum peak voltage that can be applied over the operating temperature range.   |

**ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise noted.**

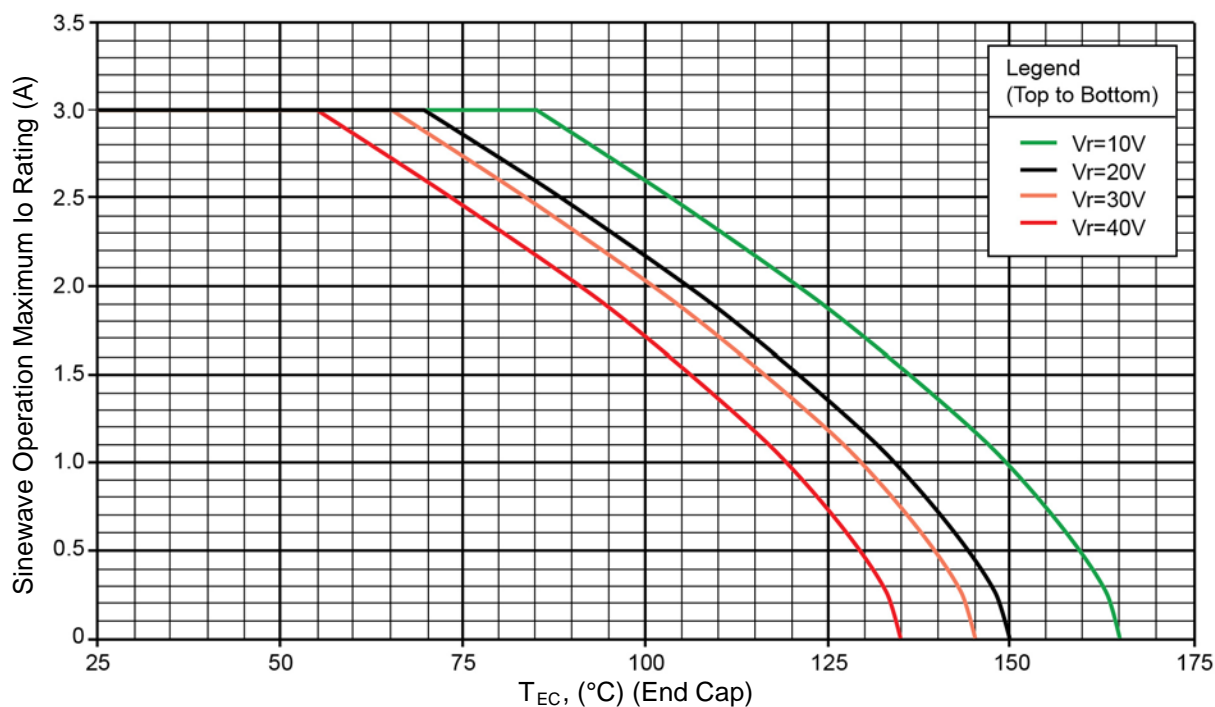
| TYPE<br>NUMBER | WORKING<br>PEAK<br>REVERSE<br>VOLTAGE | MAXIMUM<br>FORWARD<br>VOLTAGE<br>$V_{FM1}$ | MAXIMUM<br>FORWARD<br>VOLTAGE<br>$V_{FM2}$ | MAXIMUM<br>FORWARD<br>VOLTAGE<br>$V_{FM3}$ | MAXIMUM REVERSE<br>LEAKAGE CURRENT<br>$I_{RM}$ @ $V_{RM}$ |                         |
|----------------|---------------------------------------|--|--|--|---|-------------------------|
|                | $V_{RWM}$                             | $I_{FM} = 1.0 \text{ A}$                   | $I_{FM} = 3.0 \text{ A}$                   | $I_{FM} = 9.4 \text{ A}$                   | $T_J = +25 \text{ °C}$                                    | $T_J = +100 \text{ °C}$ |
|                | V (pk)                                | Volts                                      | Volts                                      | Volts                                      | mA  | mA                      |
| 1N5820US       | 20                                    | 0.40                                       | 0.50                                       | 0.70                                       | 0.10 @ 20 V   | 12.5 @ 20 V             |
| 1N5821US       | 30                                    | 0.40                                       | 0.50                                       | 0.70                                       | 0.10 @ 30 V   | 12.5 @ 30 V             |
| 1N5822US       | 40                                    | 0.40                                       | 0.50                                       | 0.70                                       | 0.10 @ 40 V   | 12.5 @ 40 V             |
| 1N6864US       | 80                                    | 0.50                                       | 0.70                                       | N/A  | 0.15 @ 80 V   | 18.0 @ 80 V             |

**GRAPHS**

**FIGURE 1**

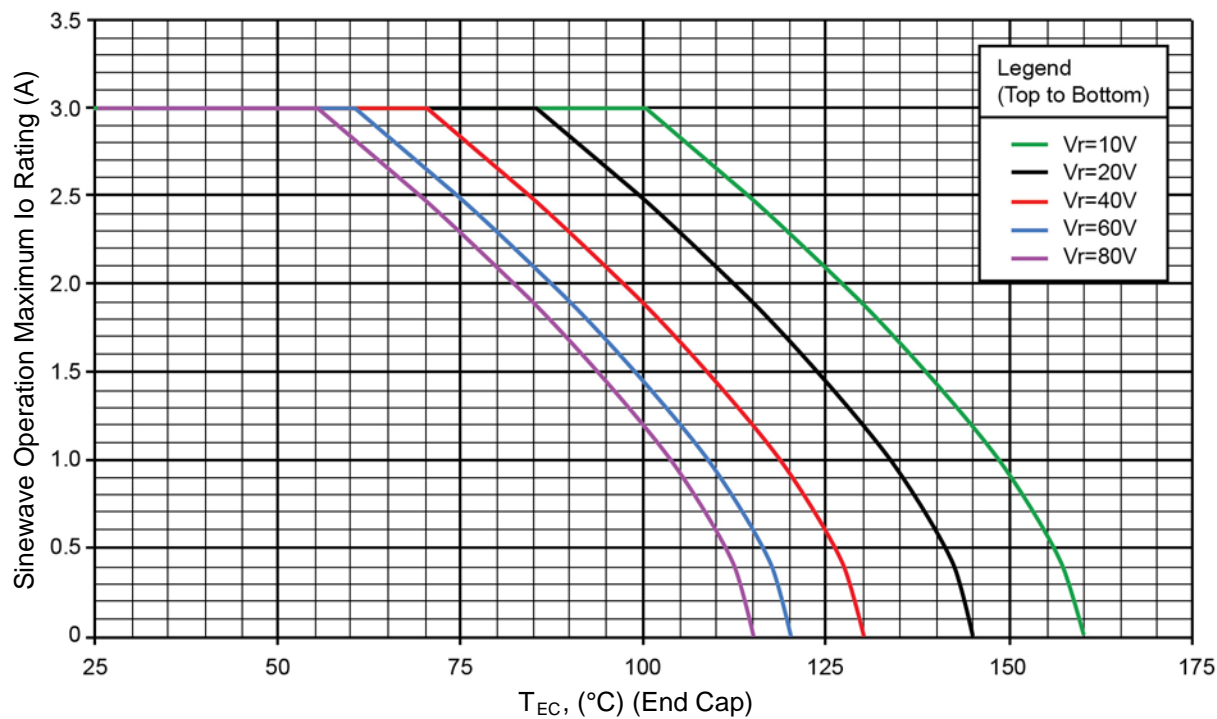
Typical Reverse Leakage Current at Rated PIV (PULSED)


**FIGURE 2**

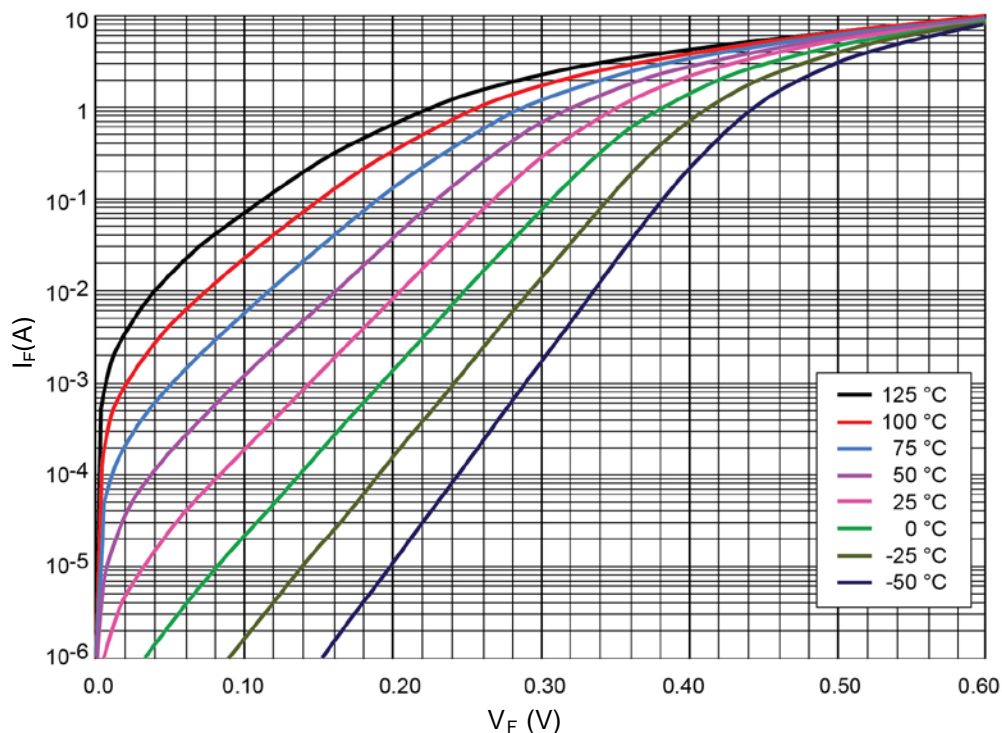
Typical Forward Voltage

**GRAPHS (continued)**


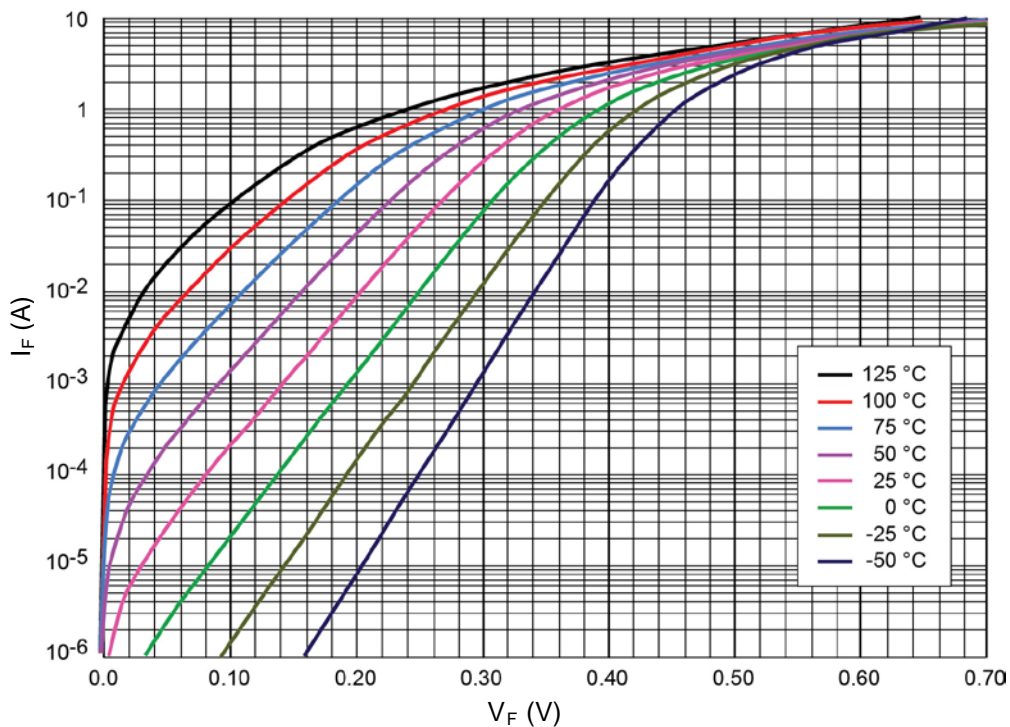
**FIGURE 3**  
Temperature Current Derating For 1N5822US



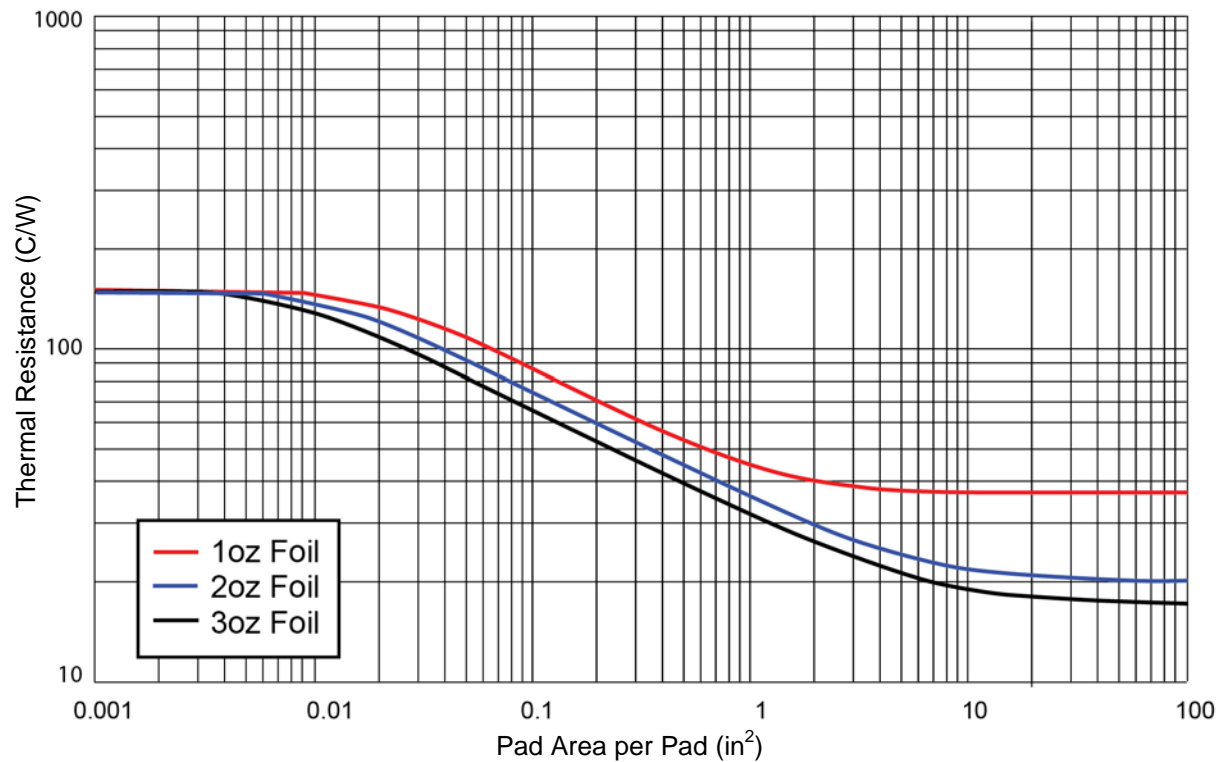
**FIGURE 4**  
Temperature Current Derating For 1N6864US

**GRAPHS (continued)**

**FIGURE 5**

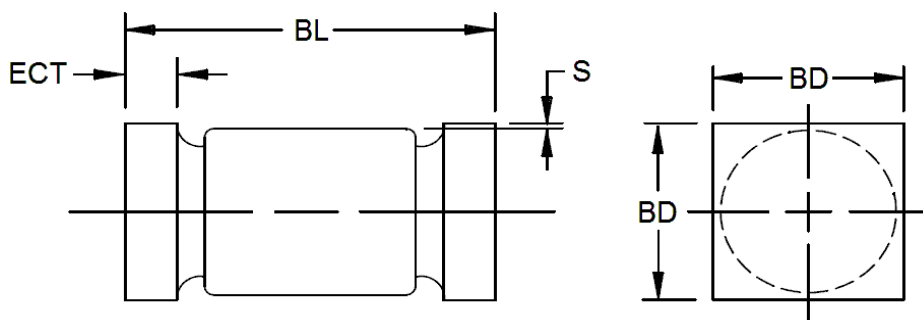
Schottky  $V_F - I_F$  Characteristics (Typical 1N5822US)


**FIGURE 6**

Schottky  $V_F - I_F$  Characteristics (Typical 1N6864US)

**GRAPHS (continued)**


**FIGURE 7**  
Thermal Resistance vs FR4 Pad Area Still Air with the PCB horizontal

**PACKAGE DIMENSIONS**


| DIM        | INCH       |       | MILLIMETERS |      |
|------------|------------|-------|-------------|------|
|            | MIN        | MAX   | MIN         | MAX  |
| <b>BD</b>  | 0.137      | 0.148 | 3.48        | 3.76 |
| <b>ECT</b> | 0.019      | 0.028 | 0.48        | 0.71 |
| <b>BL</b>  | 0.200      | 0.225 | 5.08        | 5.72 |
| <b>S</b>   | 0.003 MIN. |       | 0.08 MIN.   |      |

**NOTES:**

1. Dimensions are in inches. Millimeters are given for information only.
2. Dimensions are pre-solder dip.
3. U-suffix parts are structurally identical to the US-suffix parts.
4. In accordance with ASME Y14.5M, diameters are equivalent to  $\Phi$ x symbology.