



## Si4463BDY vs. Si4463DY

**Description:** P-Channel, 2.5 V (G-S) MOSFET

**Package:** SO-8

**Pin Out:** Identical

**Part Number Replacements:**

Si4463BDY-T1-E3 Replaces Si4463DY-T1-E3

Si4463BDY-T1-E3 Replaces Si4463DY-T1

| <b>ABSOLUTE MAXIMUM RATINGS</b> $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise noted |                                  |             |             |                    |
|---|----------------------------------|-------------|-------------|--------------------|
| Parameter   | Symbol                           | Si4463BDY   | Si4463DY    | Unit               |
| Drain-Source Voltage  | $V_{DS}$                         | - 20        | - 20        | V                  |
| Gate-Source Voltage   | $V_{GS}$                         | $\pm 12$    | $\pm 12$    |                    |
| Continuous Drain Current  | $T_A = 25\text{ }^\circ\text{C}$ | $I_D$       | - 13.7      | A                  |
|   | $T_A = 70\text{ }^\circ\text{C}$ |             | - 11.1      |                    |
| Pulsed Drain Current  | $I_{DM}$                         | - 50        | - 50        |                    |
| Continuous Source Current (MOSFET Diode Conduction)                                       | $I_S$                            | - 2.7       | - 2.7       |                    |
| Power Dissipation   | $T_A = 25\text{ }^\circ\text{C}$ | $P_D$       | 3.0         | W                  |
|   | $T_A = 70\text{ }^\circ\text{C}$ |             | 1.9         |                    |
| Operating Junction and Storage Temperature Range  | $T_J$ and $T_{stg}$              | - 55 to 150 | - 55 to 150 | $^\circ\text{C}$   |
| Maximum Junction-to-Ambient   | $R_{thJA}$                       | 42          | 42          | $^\circ\text{C/W}$ |

| <b>SPECIFICATIONS</b> $T_J = 25\text{ }^\circ\text{C}$ , unless otherwise noted |                           |              |       |           |          |       |           |               |
|---|---------------------------|--------------|-------|-----------|----------|-------|-----------|---------------|
| Parameter   | Symbol                    | Si4463BDY    |       |           | Si4463DY |       |           | Unit          |
|   |                           | Min          | Typ   | Max       | Min      | Typ   | Max       |               |
| <b>Static</b>   |                           |              |       |           |          |       |           |               |
| Gate-Threshold Voltage  | $V_{GS(th)}$              | - 0.6        |       | - 1.4     | - 0.6    |       | NS        | V             |
| Gate-Body Leakage   | $I_{GSS}$                 |              |       | $\pm 100$ |          |       | $\pm 100$ | nA            |
| Zero Gate Voltage Drain Current   | $I_{DSS}$                 |              |       | - 1       |          |       | - 1       | $\mu\text{A}$ |
| On-State Drain Current  | $V_{GS} = - 4.5\text{ V}$ | $I_{D(on)}$  | - 30  |           | - 30     |       |           | A             |
| Drain-Source On-Resistance  | $V_{GS} = - 10\text{ V}$  | $r_{DS(on)}$ |       | 0.0085    | 0.011    |       | NS        | NS            |
|   | $V_{GS} = - 4.5\text{ V}$ |              |       | 0.010     | 0.014    |       | 0.009     | 0.014         |
|   | $V_{GS} = - 2.5\text{ V}$ |              |       | 0.015     | 0.020    |       | 0.013     | 0.020         |
| Forward Transconductance  |                           | $g_{fs}$     | 44    |           | 50       |       |           | S             |
| Diode Forward Voltage   |                           | $V_{SD}$     | - 0.7 | - 1.1     | - 0.65   | - 1.1 |           | V             |
| <b>Dynamic</b>  |                           |              |       |           |          |       |           |               |
| Total Gate Charge   |                           | $Q_g$        |       | 37        | 56       |       | 46        | 70            |
| Gate-Source Charge  |                           | $Q_{gs}$     |       | 8.7       |          |       | 9         |               |
| Gate-Drain Charge   |                           | $Q_{gd}$     |       | 11        |          |       | 13.2      |               |
| Gate Resistance   |                           | $R_g$        |       | 2.7       |          |       | 3.2       |               |
| <b>Switching</b>  |                           |              |       |           |          |       |           |               |
| Turn-On Time  |                           | $t_{d(on)}$  |       | 35        | 55       |       | 35        | 55            |
|   |                           | $t_r$        |       | 60        | 90       |       | 45        | 70            |
| Turn-Off Time   |                           | $t_{d(off)}$ |       | 115       | 170      |       | 160       | 240           |
|   |                           | $t_f$        |       | 75        | 115      |       | 140       | 210           |
| Source-Drain Reverse Recovery Time  |                           | $t_{rr}$     |       | 50        | 75       |       | 55        | 80            |

NS denotes not specified in original datasheet.

Specification comparisons are supplied as a courtesy to compare two devices and do not constitute a commercial product datasheet or any guarantee of identical performance. Designers should refer to the appropriate datasheets of the same number for guaranteed specification limits.