# Si4340DDY vs. Si4340CDY

**Description:** **Dual N-Channel = 20 V (D-S) MOSFET with Schottky Diode**
**Package:** **SO-14**
**Pin Out:** **Identical**

**Part Number Replacements:** Si4340DDY-T1-GE3 Replaces Si4340CDY-T1-E3
Si4340DDY-T1-GE3 Replaces Si4340CDY-T1-GE3

| **ABSOLUTE MAXIMUM RATINGS** ($T_A$ = 25 °C, unless otherwise noted) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | | **SYMBOL** | | **Si4340DDY** | **Si4340CDY** | **UNIT** |
| Drain-Source Voltage | | $V_{DS}$ | Ch-1 | 20 | 20 | V |
| | | | Ch-2 | 20 | 20 | |
| Gate-Source Voltage | | $V_{GS}$ | Ch-1 | ± 20 | ± 20 | |
| | | | Ch-2 | ± 20 | ± 16 | |
| Continuous Drain Current | $T_A$ = 25 °C | $I_D$ | Ch-1 | 12.1 | 11.5 | A |
| | | | Ch-2 | 16.3 | 15.2 | |
| | $T_A$ = 70 °C | | Ch-1 | 9.7 | 9.2 | |
| | | | Ch-2 | 13 | 12.2 | |
| Pulsed Drain Current | | $I_{DM}$ | Ch-1 | 50 | 40 | |
| | | | Ch-2 | 60 | 50 | |
| Continuous Source Current (MOSFET Diode Conduction) | | $I_S$ | Ch-1 | 1.7 | 1.7 | |
| | | | Ch-2 | 2.5 | 2.5 | |
| Power Dissipation | $T_A$ = 25 °C | $P_D$ | Ch-1 | 2 | 2 | W |
| | | | Ch-2 | 3 | 3 | |
| | $T_A$ = 70 °C | | Ch-1 | 1.3 | 1.3 | |
| | | | Ch-2 | 1.9 | 1.9 | |
| Operating Junction and Storage Temperature Range | | $T_i$, $T_{stg}$ | | - 55 to 150 | - 55 to 150 | °C |
| Maximum Junction-to-Ambient | | $R_{thJA}$ | Ch-1 | 62.5 | 62.5 | °C/W |
| | | | Ch-2 | 42 | 42 | |

| **SPECIFICATIONS** ($T_J$ = 25 °C, unless otherwise noted) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **Si4340DDY** | | | **Si4340CDY** | | | |
| **PARAMETER** | | **SYMBOL** | | **MIN.** | **TYP.** | **MAX.** | **MIN.** | **TYP.** | **MAX.** | **UNIT** |
| **Static** | | | | | | | | | | |
| Gate-Threshold Voltage | | $V_{GS(th)}$ | Ch-1 | 1 | - | 2.5 | 1 | - | 3 | V |
| | | | Ch-2 | 1 | - | 2.5 | 0.8 | - | 2.2 | |
| Gate-Body Leakage | | $I_{GSS}$ | Ch-1 | - | - | ± 100 | - | - | ± 100 | nA |
| | | | Ch-2 | - | - | ± 100 | - | - | ± 100 | |
| Zero Gate Voltage Drain Current | | $I_{DSS}$ | Ch-1 | - | - | 1 | - | - | 1 | µA |
| | | | Ch-2 | - | - | 100 | - | - | 100 | |
| On-State Drain Current | $V_{GS}$ = 10 V | $I_{D(on)}$ | Ch-1 | 20 | - | - | 20 | - | - | A |
| | | | Ch-2 | 30 | - | - | 30 | - | - | |
| Drain-Source On-Resistance | $V_{GS}$ = 10 V | $R_{DS(on)}$ | Ch-1 | - | 0.0065 | 0.0085 | - | 0.0077 | 0.0094 | Ω |
| | | | Ch-2 | - | 0.0060 | 0.0070 | - | 0.0065 | 0.0080 | |
| | $V_{GS}$ = 4.5 V | | Ch-1 | - | 0.0091 | 0.0115 | - | 0.0100 | 0.0125 | |
| | | | Ch-2 | - | 0.0077 | 0.0095 | - | 0.0075 | 0.0095 | |
| Forward Transconductance | | $g_{fs}$ | Ch-1 | - | 28 | - | - | 45 | - | S |
| | | | Ch-2 | - | 44 | - | - | 73 | - | |
| Diode Forward Voltage | | $V_{SD}$ | Ch-1 | - | 0.76 | 1.20 | - | 0.80 | 1.20 | V |
| | | | Ch-2 | - | 0.43 | 0.55 | - | 0.45 | 0.55 | |



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| **SPECIFICATIONS** ($T_J$ = 25 °C, unless otherwise noted) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | | **SYMBOL** | | **Si4340DDY** | | | **Si4340CDY** | | | **UNIT** |
| | | | | **MIN.** | **TYP.** | **MAX.** | **MIN.** | **TYP.** | **MAX.** | |
| **Dynamic** | | | | | | | | | | |
| Total Gate Charge | $V_{GS}$ = 10 V | $Q_g$ | Ch-1 | - | 17.4 | 26 | - | 21 | 32 | nC |
| | | | Ch-2 | - | 17.8 | 27 | - | 31 | 47 | |
| | $V_{GS}$ = 4.5 V | | Ch-1 | - | 8.1 | 12.5 | - | 9.6 | 15 | |
| | | | Ch-2 | - | 8.4 | 12.5 | - | 14.1 | 22 | |
| Gate-Source Charge | | $Q_{gs}$ | Ch-1 | - | 2.2 | - | - | 4 | - | |
| | | | Ch-2 | - | 2.6 | - | - | 5 | - | |
| Gate-Drain Charge | | $Q_{gd}$ | Ch-1 | - | 2.4 | - | - | 3 | - | |
| | | | Ch-2 | - | 2.5 | - | - | 3.5 | - | |
| Gate Resistance | | $R_g$ | Ch-1 | - | 2.2 | 4.4 | - | 0.65 | 1.2 | Ω |
| | | | Ch-2 | - | 2.6 | 5.2 | - | 1.4 | 2.8 | |

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.




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