

Absolute Maximum Ratings

Exceeding the Absolute Maximum ratings may damage the device.

| Parameter | Rating |
|---|-----------------|
| V _{IN} , V _{OUT} to GND | -0.3V to +28V |
| ENB, SS, FLTB, POVP to GND | -0.3V to +6V |
| Junction Temperature (T _J) | +150°C |
| Storage Temperature (T _S) | -65°C to +150°C |
| ESD Rating HBM All Pins | ±4kV |
| ESD Rating HBM VIN and VOUT Pins | ±8kV |

Recommend Operating Ratings

The device is not guaranteed to operate beyond the Maximum Operating Ratings.

| Parameter | Rating |
|---|----------------|
| Supply Voltage V _{IN} | 3.4V to 22V |
| ENB, FLTB, SS | 0V to 5.5V |
| POVP | 0V to 3V |
| DC Switch Current (I _{SW}) | 0A to 5A |
| Ambient Temperature (T _A) | -40°C to +85°C |
| Package Thermal Resistance 3x3 DFN-12 (θ _{JA}) | 50°C/W |

Electrical Characteristics

T_A = 25°C, V_{IN} = 20V, ENB = 0V, R_{OVP} = 19.6kΩ, unless otherwise specified.

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Units |
|------------------------|---|--|------|------|------|-------|
| V _{VIN} | Input Supply Voltage | | 3.4 | | 22 | V |
| V _{UVLO} | Under-voltage Lockout Threshold | V _{IN} rising | 3.0 | | 3.35 | V |
| V _{UVLO_HYS} | Under-voltage Lockout Hysteresis | | | 300 | | mV |
| V _{OVLO} | Overvoltage Lockout Threshold | 0Ω ≤ R _{OVP} ≤ 19.6kΩ, V _{IN} rising, 1% | 23.0 | 24.0 | 25.0 | V |
| | | R _{OVP} = 75kΩ, V _{IN} rising, 1% | 16.8 | 17.4 | 18.0 | |
| | | R _{OVP} = 137kΩ, V _{IN} rising, 1% | 10.0 | 10.4 | 10.8 | |
| | | R _{OVP} = 301kΩ, V _{IN} rising, 1% | 5.5 | 5.8 | 6 | |
| V _{OVLO_HYS} | Overvoltage Lockout Hysteresis | | | 350 | | mV |
| t _{DELAY_OVP} | Switch Turn-off Delay upon Over-voltage | V _{VIN} - V _{OLVO} = 500mV | | 1 | | μs |
| I _{VIN_ON} | Input Quiescent Current | I _{VOUT} = 0 | | 550 | | μA |
| I _{VIN_OFF} | Input Shutdown Current | I _{VOUT} = 0, ENB = 5V | | 18 | 35 | μA |
| I _{VOUT_OFF} | Output Leakage Current | V _{OUT} = 20V, V _{IN} = 0V, ENB = 5V | | 18 | 35 | μA |
| R _{ON_20V} | Switch ON-Resistance | I _{VOUT} = 1A | | 20 | | mΩ |
| R _{ON_5V} | | V _{IN} = 5V, I _{VOUT} = 1A | | 21 | | mΩ |
| V _{ENB_H} | ENB Pin Input High Threshold | ENB rising | | | 1.4 | V |
| V _{ENB_L} | ENB Pin Input Low Threshold | ENB falling | 0.6 | | | V |
| I _{ENB_BIAS} | ENB Pin Input Pull-down Current | ENB = 1.8 V | | | 10 | μA |
| V _{FLTB_LO} | FLTB Pin Pull-down Voltage | FLTB sinking 3mA | | | 0.3 | V |
| V _{TRCB} | TRCB Threshold | V _{OUT} - V _{IN} | | 26 | | mV |
| t _{TRCB} | TRCB Delay Time | V _{OUT} - V _{IN} = V _{TRCB} + 500mV | | 500 | | ns |
| t _{D_ON} | Turn-On Delay Time ENB to V _{OUT} (10%) | From ENB falling edge to V _{OUT} reaching 10% of V _{IN} . C _{OUT} = 68μF, C _{SS} = 5.6nF | | 21 | | ms |
| t _{ON} | Turn-On Rise Time | V _{OUT} from 10% to 90% C _{OUT} = 68μF, C _{SS} = 5.6nF | | 2 | | ms |

