



ACE72565RT

1.2MHz Synchronous Step-Down Converter

Description

ACE72565RT is 1.2MHz switching frequency, 3 μ A ultra-low quiescent current, current mode buck converter. ACE72565RT has a wide input voltage range from 2.5V to 6.5V. This device adopts peak current mode control, the output voltage can be adjusted from 0.6V to input voltage. It has fast load transient response. The 1.2MHz high switching frequency minimizes the size of external components while keeping switching losses low. The ACE72565RT has two operating modes, PWM control and PFM mode switching control in different load condition, and allowing high efficiency over a larger load range. The ACE72565RT is available in SOT-23-5, SOT-23-6 and DFN1.6*1.6-6 package.

Features

- Input Voltage Range: 2.5V~6.5V
- Maximum Output Current: 0.8A
- Switching Frequency: 1.2MHz
- Ultra-low Quiescent Current: 3 μ A (Typ.)
- Feedback Voltage: 0.6V
- High Efficiency: Up to 95% (@3.3V_{OUT})
- Low Shutdown Current: <1 μ A
- PFM Mode for High Efficiency in Light Load
- 100% Duty Cycle in Dropout Operation
- LX discharge function
- Short Circuit Protection
- Thermal Fault Protection
- Inrush Current Limit and Soft Start
- Input over voltage protection (OVP)
- Power Good Function (SOT-23-6)

Application

- Battery-Powered Application
- IoT Modules
- Wearable Device
- Intelligent Lock



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Absolute Maximum Ratings

Item	Min	Max	Unit
Input Supply Voltages	-0.3	7	V
EN, LX Voltages	-0.3	7	V
LX Voltage (<10ns transient)	-3	7.5	V
LX Voltage (<5ns transient)	-4	8	V
PG, FB Voltage	-0.3	6	V
Storage Temperature Range	-65	150	°C
Junction Temperature (Note)	-40	150	°C
Power Dissipation		600	mW
Lead Temperature Soldering, 10sec		260	°C

Note: Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

Recommended Operating Conditions

Items	Description	Min	Max	Unit
Voltage Range	VIN	2.5	6.5	V
T _J	Operating Junction Temperature Range	-40	125	°C

ESD Ratings

Item	Description	Value	Unit
V _{ESD_HBM}	Human Body Model for all pins	±2000	V
V _{ESD_CDM}	Charge Device Model for all pins	±1000	V

Thermal Resistance

Items	Description	Package	Value	Unit
θ _{JA}	Junction-to-ambient thermal resistance	SOT23-5/6	200	°C/W
		DFN1.6x1.6	140	°C/W
θ _{JC}	Junction-to-case thermal resistance	SOT23-5/6	65	°C/W
		DFN1.6x1.6	64	°C/W

Note: Measured on JESD51-7, 4-layer PCB.

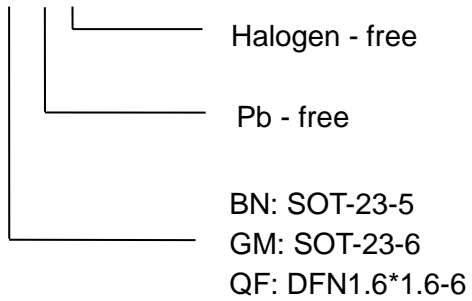


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Ordering Information

ACE72565RT XX + H





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Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Technology Co., LTD. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

ACE Technology Co., LTD.
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