



ACE7518RT

600KHz, PWM Sync COT Step-Down Converter

Description

The ACE7518RT is a high efficiency, Constant on-Time (COT) control mode synchronous step-down DC-DC converter capable of delivering up to 5A current. The ACE7518RT integrates main switch and synchronous switch with very low RDS(ON) to minimize the conduction loss. Low output voltage ripple and small external inductor and capacitor size are achieved with typical 600kHz switching frequency. It adopts the COT architecture and force PWM operation in steady state to achieve fast transient responses for high voltage step down applications.

Features

- Force PWM Operation Mode
- COT control to achieve fast transient responses
- Wide Input Range: 4.5V to 18V
- Output Current: 5A
- Feedback Voltage: 0.6V
- Switching Frequency: 600KHz
- 39mΩ/20mΩ Low RDS(ON) internal FETs
- Build in Input Over Voltage Protection
- Integrated internal compensation
- Inrush Current Limit and Soft Start
- Over Current Protection with Hiccup Mode
- Thermal Shutdown
- Stable with Low ESR Ceramic Output Capacitors
- Available in SOT-23-6 package

Application

- Wireless and DSL Modems
- Digital Set Top Boxes
- Flat Panel Television and Monitors



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Absolute Maximum Ratings ^{Note (1)}

Item	Min	Max	Unit
Input Supply Voltage IN, EN	-0.3	19	V
SW Voltages	-0.3	19	V
SW Voltages (<10ns transient)	-4.5	20	V
FB Voltage	-0.3	6	V
BS Voltage	-0.3	20	V
Storage Temperature Range	-65	150	°C
Junction Temperature ^{Note (2)}		160	°C
Power Dissipation		1500	mW
Lead Temperature (Soldering, 10s)		260	°C

Note:

- (1). Exceeding these ratings may damage the device.
- (2). The device is not guaranteed to function outside of its operating conditions.

Recommended Operating Conditions

Item	Min	Max	Unit
Voltage Range, IN	4.5	18	V
Operating Junction Temperature, TJ	-40	125	°C

ESD Ratings ^{Note (1)}

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

Note:

- (1). JEDEC specification JS-001.

Thermal Information ^{Note (1)}

Item	Description	Value	Unit
θ _{JA}	Junction-to-ambient thermal resistance	25	°C/W
θ _{JC}	Junction-to-case(top) thermal resistance	5	°C/W

Note:

- (1). Measured on JESD51-7, 4-layer PCB.

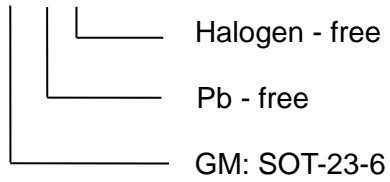


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Ordering Information

ACE7518RT 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.

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