



# **ACE73960RT**

## **3A 60V Step-Down Regulator**

### **Description**

The ACE73960RT is a 60V, 3A step down regulator with an integrated high-side MOSFET. With a wide input range from 9V to 60V, it's suitable for various applications from industrial to automotive for power conditioning from unregulated sources. An ultra-low 1 $\mu$ A current in shutdown mode can further prolong battery life. Internal loop compensation means that the user is free from the tedious task of loop compensation design. This also minimizes the external components of the device. A precision enable input allows simplification of regulator control and system power sequencing. The device also has built-in protection features such as cycle-by-cycle current limit, thermal sensing and shutdown due to excessive power dissipation, and output overvoltage protection. The ACE73960RT is available in an ESOP-8 package.

### **Features**

- 3A Continuous Output Current
- 9V to 60V Input Range
- 150m $\Omega$  High-Side MOSFET
- Adjustable Switching Frequency from 200kHz to 1 MHz
- Current Mode Control
- 1 $\mu$ A Shutdown Current
- Thermal, Overvoltage and Short Protection
- Internal Compensation for Ease of Use

### **Application**

- Telecom and Datacom Systems
- General Purpose Wide Vin Regulation
- Automotive Battery Regulation
- Industrial Power Supplies



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### Absolute Maximum Ratings

Item		Min	Max	Unit
Input Voltages	VIN to GND	-0.3	65	V
	EN to GND	-0.3	7	V
	PGOOD to GND	-0.3	7	V
	FB to GND	-0.3	7	V
Output Voltages	BOOT to SW	6.5		V
	SW to GND	-0.3	V <sub>IN</sub> +0.3	V
Junction Temperature, T <sub>J</sub>		150		°C
Storage Temperature, T <sub>STG</sub>		-65	150	°C
Maximum Lead Soldering Temperature (10 Seconds), T <sub>SDR</sub>		260		°C

Note: Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

### Recommended Operating

Item		Min	Max	Unit
Buck Regulator	VIN	9	60	V
	VOUT	0.8	50	V
	SW	-1	60	V
	FB	0	5	V
Frequency	Switching frequency range	200	1000	kHz
Temperature	Operating junction temperature, T <sub>J</sub>	-40	125	°C

Note: Operating Ratings indicate conditions for which the device is intended to be functional, but do not guarantee specific performance limits. For guaranteed specifications, see Electrical Characteristics.

### ESD Ratings

Item	Description	Value	Unit
Electrostatic discharge, V <sub>(ESD)</sub>	Human-body model (HBM)	±2000	V

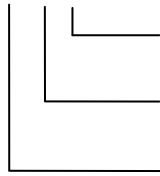


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### Ordering Information

ACE73960RT XX + H



Halogen - free

Pb - free

I M: ESOP-8



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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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