



# ACE50845RT

## Low Consumption, High PSRR Linear Regulator

### Description

The ACE50845RT is an ultra-low quiescent current low-dropout linear regulator that can source 350mA with excellent transient performance. The ACE50845RT is designed specifically for applications where very-low quiescent current is a critical parameter. This device maintains low power consumption even in dropout mode to further increase the battery life. The feature of 1.3 $\mu$ A low quiescent current and 0.05 $\mu$ A shutdown current are ideal for the battery application with long service life. The other features include current limit function, over temperature protection and output discharge function.

### Features

- Ultra Low IQ: 1.3 $\mu$ A
- High PSRR: 80dB@1KHz
- Input Voltage Range: 1.2V to 5.5V
- Output Voltage Range:  
Adjustable Mode: 0.8V to 4.5V  
Fixed Mode: 0.8V to 4.5V, 0.05V step
- Ultra Low Dropout Voltage: 160mV@ 350mA, when VOUT  $\geq$  3V
- Low Noise: 30 $\mu$ Vrms
- Over Temperature Protection
- Output Active Discharge Function
- Current Limit Protection

### Application

- Ultra Low Power Microcontrollers
- Notebook Computers
- Portable, Battery Powered Equipment



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### Absolute Maximum Ratings <sup>(Note)</sup>

Symbol	Items	Value	Unit
$V_{IN}$	Input Voltage	6	V
$I_{OUT}$	Output Current	350	mA
$P_{DMAX}$	Power Dissipation	SOT-23-5	0.40
		DFN1*1-4	0.45
$R_{\theta JA}$	Thermal Resistance	SOT-23-5	270
		DFN1*1-4	240
$T_J$	Junction Temperature	-40 to 125	°C
$T_A$	Ambient Temperature	-40 to 85	°C
$T_{STG}$	Storage Temperature	-55 to 125	°C
$T_{SOLDER}$	Package Lead Soldering Temperature	260°C, 10s	

Note:

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

### Recommended Operating

Symbol	Items	Value	Unit
$V_{IN}$	Supply Voltage	1.2 to 5.5	V
$I_{OUT}$	Output Current	<350	mA
$T_{OPT}$	Operating Temperature	-40 to 85	°C
$C_{IN}$	Input Capacitor	1μF ~10μF, 1μF is recommended	μF
$C_{OUT}$	Output Capacitor		μF

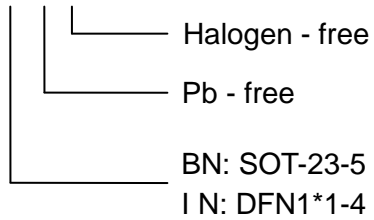


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## Ordering Information

ACE50845RT XX + H



Halogen - free

Pb - free

BN: SOT-23-5

I N: DFN1\*1-4



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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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