

ILC7062 SOT-23 CMOS LDO

Features

- Low Power Consumption: typ $2.0\mu A$ at $V_{OUT} = 5V$
- All-CMOS design in SOT-23 and SOT-89 packages gives optimal size and power performances.
- Highly accurate output ±2% (±1%)
- Maximum output current: 250mA (Limited to 150mW power dissipation SOT-23, 500mW SOT-89)
- Output Voltage Range: 2.0V to 6.0V

Applications

- Battery-powered Equipment
- Reference voltage sources
- Palmtops
- · Portable cameras and video recorders

Description

250mA CMOS LDO in a SOT-23 package, featuring 120mV of dropout voltage at 100mA and 380mV at 200mA current levels.

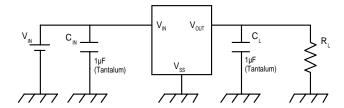
The part offers $\pm 2\%$ accuracy on outputs, yet draws only $2\mu A$ of current. Short-circuit protection is standard.

The part comes in both 3-lead SOT-23 (150mW) and 3-lead SOT-89 (500mW) to handle a variety of voltage and current levels.

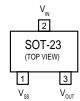
Transient response to load variations have improved in comparison to the existing series.

Low Power consumption and high accuracy is achieved through CMOS and laser trimming technologies.

Typical Applications

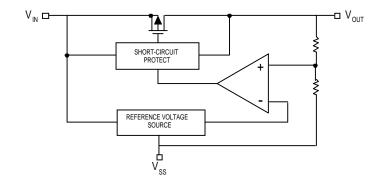


Pin Assignments





Internal Block Diagram



Absolute Maximum Ratings

Parameter		Symbol	Ratings	Units
Input Voltage		V _{IN}	12	V
Output Current (Note 3)		I _{OUT} max	500	mA
Output Voltage (Note 1)		V _{OUT}	V _{SS} -0.3~V _{IN} +0.3	V
Continuous Total Power Dissipation	SOT-23	P_{D}	150	mW
	SOT-23		500	
Operating Ambient Temperature	<u>.</u>	T _{opr}	-40~+85	°C
Storage Temperature		T _{stg}	-40~+125	°C

Electrical Characteristics ILC7062CP-50

 $T_A = 25^{\circ}C$

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Units
Output Voltage	V _{OUT}	$I_{OUT} = 40 \text{mA}, V_{IN} = 6.0 \text{V}$	4.90	5.0	5.10	V
Maximum Output Current	I _{OUT} max	$V_{IN} = 6.0V, V_{OUT} \ge 4.5V$	250			mA
Load Stability	ΔV_{OUT}	Conditions		40	80	mV
Input/Output Voltage Differential	V_{dif}	I _{OUT} = 100mA		120	300	mV
(Note 2)		I _{OUT} = 200mA		380	600	
Supply Current	I _{SS}	V _{IN} = 6.0V		2	4.5	μA
Input Stability	ΔV_{OUT}	I _{OUT} = 40mA		0.2	0.3	%/V
	$\Delta V_{IN} \bullet V_{OUT}$	6.0V <u><</u> V _{IN} <u><</u> 10.0V				
Input Voltage	V _{IN}				10.0	V
Output Voltage Temperature	ΔV_{OUT}	I _{OUT} = 40mA		±100		ppm/°C
Characteristics	$\Delta T_{opr} V_{OUT}$	-40°C ≤ T _{opr} ≤ 85°C				

Notes:

- 1. V_{OUT} means the output voltage when " V_{OUT} + 1.0V" is provided at the V_{IN} pin while maintaining a certain I_{OUT} value.
- 2. V_{dif} is defined as " V_{IN} - V_{OUT} " where $V_{OUT} = V_{SET} \times 0.98$.
- 3. I_{OUT} max = This is specified for SOT-89 package. For SOT-23, it is limited by continuous total power dissipation.

Electrical Characteristics ILC7062CP-33

 $T_A = {}^{\circ}C$

Parameter	Symbol	Conditons	Min.	Тур.	Max.	Units
Output Voltage	V _{OUT}	I _{OUT} = 40mA, V _{IN} = 4.3V	3.234	3.300	3.366	V
Maximum Output Current	I _{OUT} max	$V_{IN} = 4.3V, V_{OUT} \ge 2.97V$	50			mA
Laod Stability	DV _{OUT}	$V_{IN} = 4.3V$, $1mA \le I_{OUT} \le 80mA$		45	90	mV
Input/Output Voltage Differential (Note 2)	V_{dif}	I _{OUT} = 80mA I _{OUT} = 160mA		180 400	360 700	mV
Supply Current	I _{SS}	V _{IN} = 4.0V		2	4.5	μΑ
Input Stability	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I _{OUT} = 40mA 4.3V <u><</u> V _{IN} <u>≤</u> 10.0V		0.2	0.3	%/V
Input Voltage	V_{IN}				10.0	V
Output Voltage Temperature Characteristics	$\frac{\Delta V_{OUT}}{\Delta I_{opr}^{\bullet} V_{OUT}}$	$I_{OUT} = 40 \text{mA}$ $-30^{\circ}\text{C} \le T_{opr} \le 80^{\circ}\text{C}$		±100		ppm/°C

Electrical Characteristics ILC7062CP-30

 $T_A = 25^{\circ}C$

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Units
Output Voltage	V _{OUT}	I _{OUT} = 40mA, V _{IN} = 4.0V	2.94	3.0	3.06	V
Maximum Output Current	I _{OUT} max	$V_{IN} = 4.0V, V_{OUT} \ge 2.7V$	150			mA
Load Stability	ΔV_{OUT}	$V_{IN} = 4.0V$, $1mA \le I_{OUT} \le 80mA$		45	90	mV
Input/Output Voltage Differential (Note 2)	V _{dif}	I _{OUT} = 80mA I _{OUT} = 160mA		180 400	360 700	mV
Supply Current	I _{SS}	V _{IN} = 4.0V		2	4.5	μΑ
Input Stability	$\frac{\Delta V_{OUT}}{\Delta V_{IN}^{\bullet} \Delta V_{OUT}}$	I _{OUT} = 40mA 4.0V ≤ V _{IN} ≤ 10.0V		0.2	0.3	%/V
Input Voltage	V _{IN}				10.0	V
Output Voltage Temperature Characteristics	$\frac{\Delta V_{OUT}}{\Delta T_{opr}^{\bullet} V_{OUT}}$	$I_{OUT} = 40 \text{mA}$ $-30^{\circ}\text{C} \le T_{opr} \le 80^{\circ}\text{C}$		±100		ppm/°C

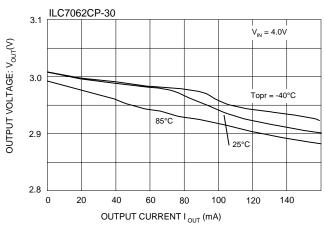
Notes:

- V_{OUT} means the output voltage when "V_{OUT} + 1.0V" is provided at the V_{IN} pin while maintaing a certain I_{OUT} value.
 V_{dif} is defined as "V_{IN}-V_{OUT}" where V_{OUT} = V_{SET} X 0.98.
 I_{OUT} max = This is specified for SOT-89 package. For SOT-23, it is limited by continuous total power dissipation.

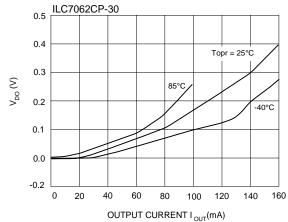
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Typical Performance Characteristics General conditions for all curves

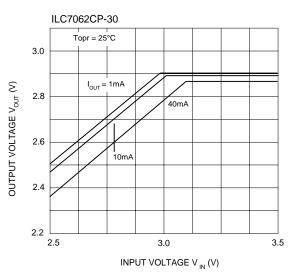




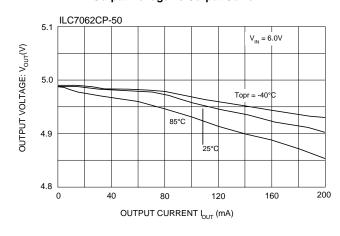




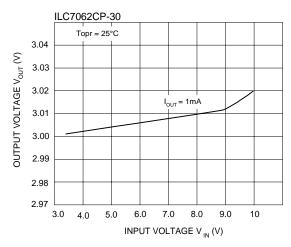
Output Voltage vs Input Voltage



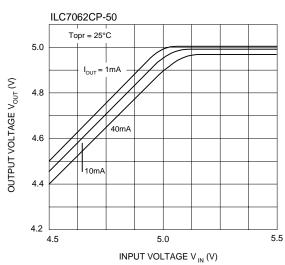
Output Voltage vs Output Current



Output Voltage vs Input Voltage

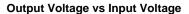


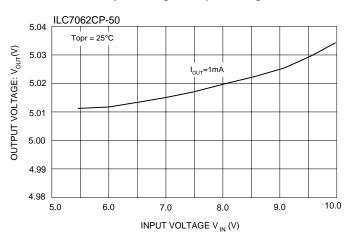
Output Voltage vs Input Voltage



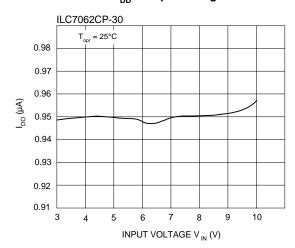
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Typical Performance Characteristics General conditions for all curves

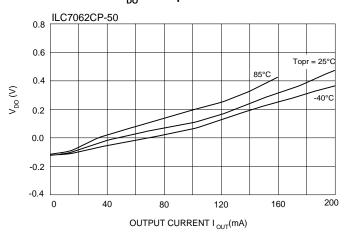




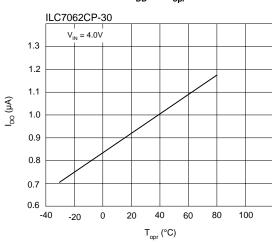
I_{DD} vs Input Voltage



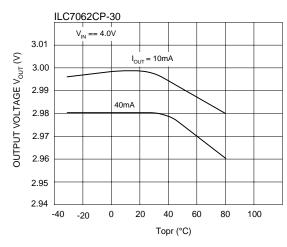
V_{DO} vs Output Current



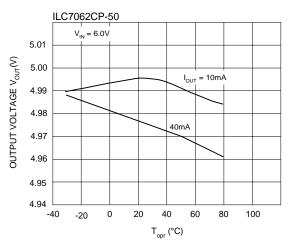
I_{DD} vs T_{opr}



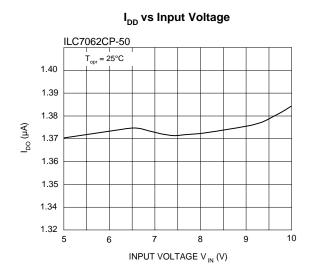
Output Voltage vs Temperature

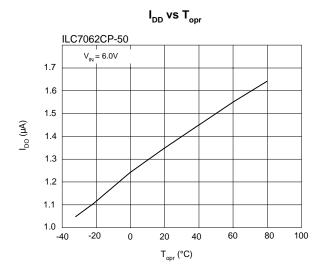


Output Voltage vs Temperature

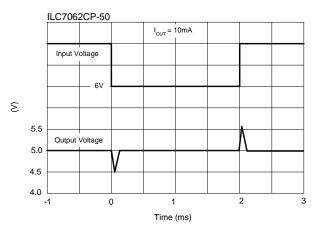


Typical Performance Characteristics General conditions for all curves

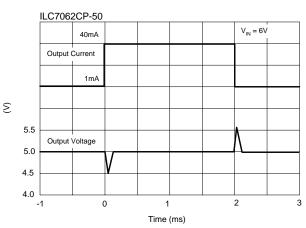




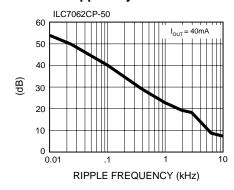
Line Transient Response



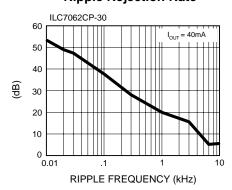
Load Transient Response



Ripple Rejection Rate



Ripple Rejection Rate



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Ordering Information					
ILC7062CP-50 5.0V output, SOT-89*					
ILC7062CM-50 5.0V output, SOT-23-3**					
ILC7062CP-46 4.6V output, SOT-89*					
ILC7062CP-33	3.3V output, SOT-89*				
ILC7062CP-30	3.0V output, SOT-89*				
ILC7062CP-25	2.5V output, SOT-89*				
ILC7062CM-25 2.5V output, SOT-23-3**					
	*Max power dissipation of 500mW **Max power dissipation of 150mW				

^{*}Standard product offering comes in tape & reel, quantity 3000 per reel, orientation right for SOT-23, quantity 1000 per reel, orientation right for SOT-89

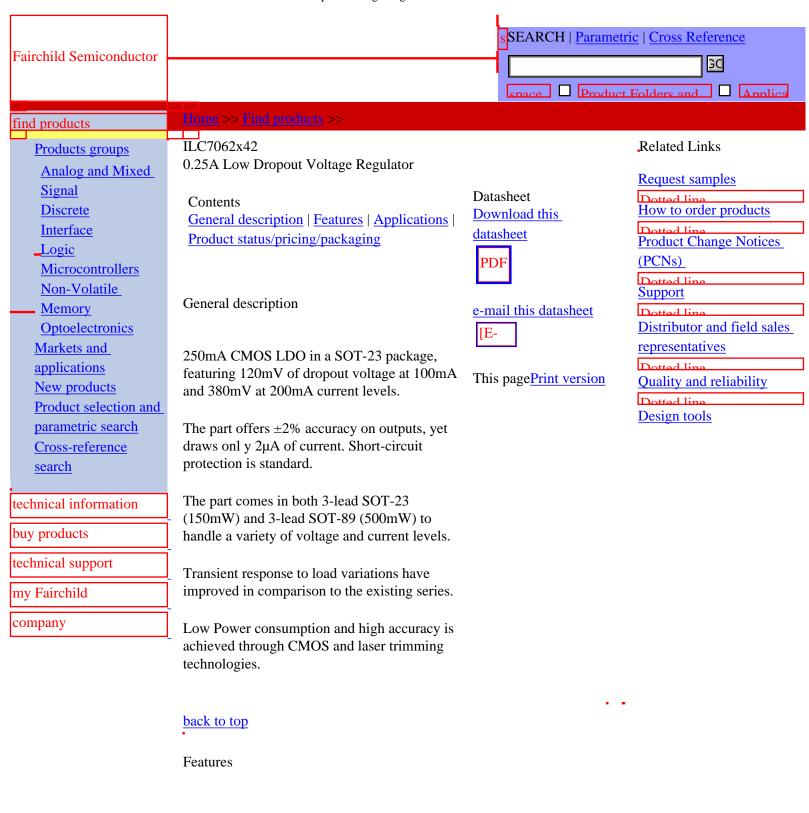
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- A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.



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- Maximum output current: 250mA (Limited to 150mW power dissipation SOT-23, 500mW SOT-89)
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Applications

- Battery-powered Equipment
- Reference voltage sources
- Palmtops
- Portable cameras and video recorders

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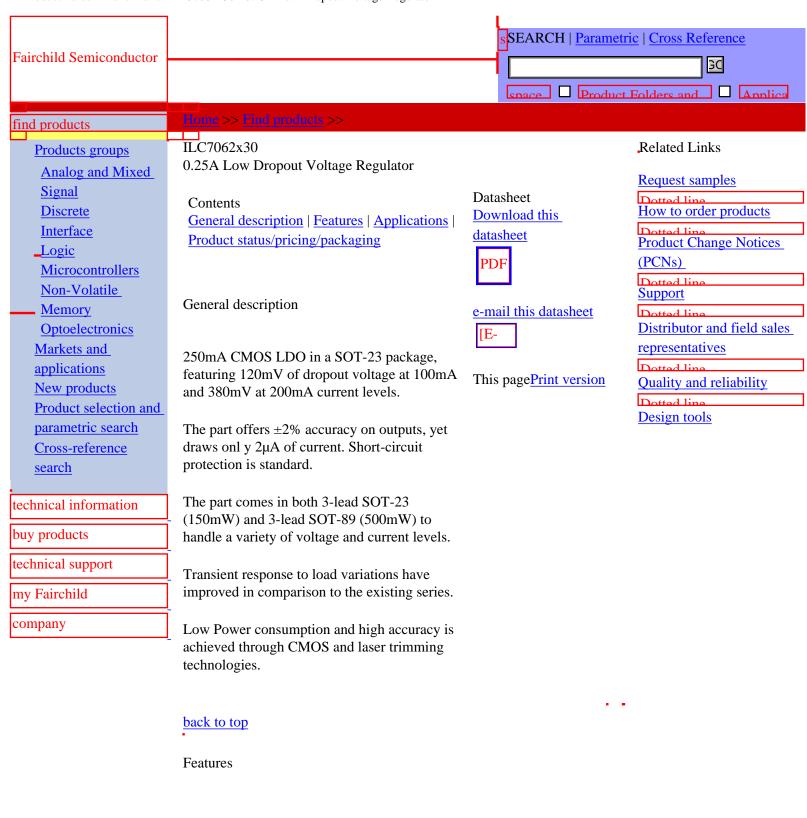
Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
ILC7062CM42X	Lifetime Buy	\$0.87	SOT-23	3	TAPE REEL

^{* 1,000} piece Budgetary Pricing

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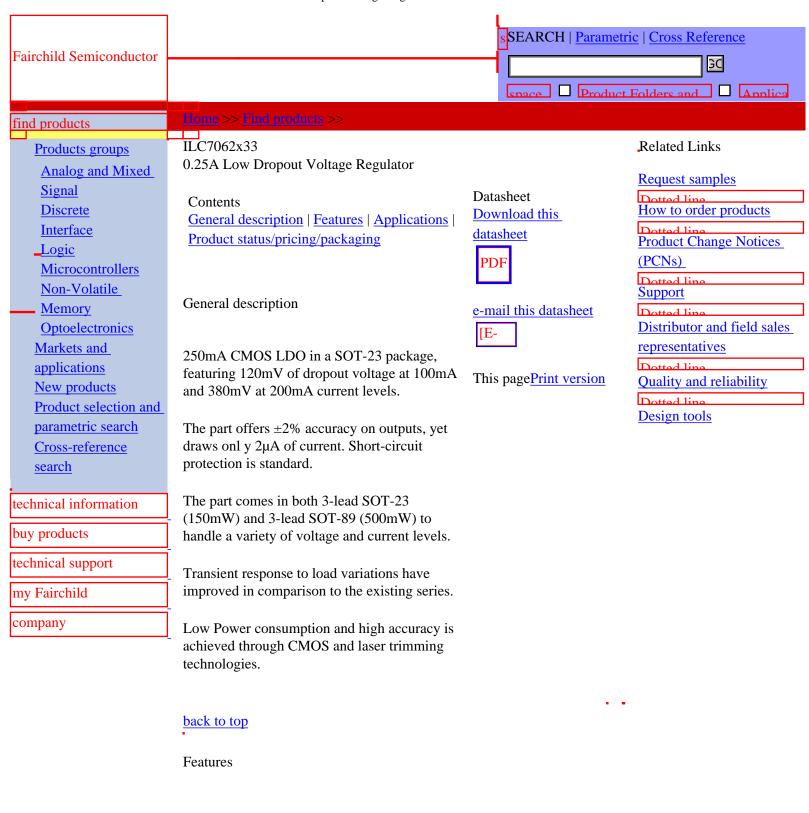
Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
ILC7062CM30X	Lifetime Buy	\$0.87	SOT-23	3	TAPE REEL

^{* 1,000} piece Budgetary Pricing

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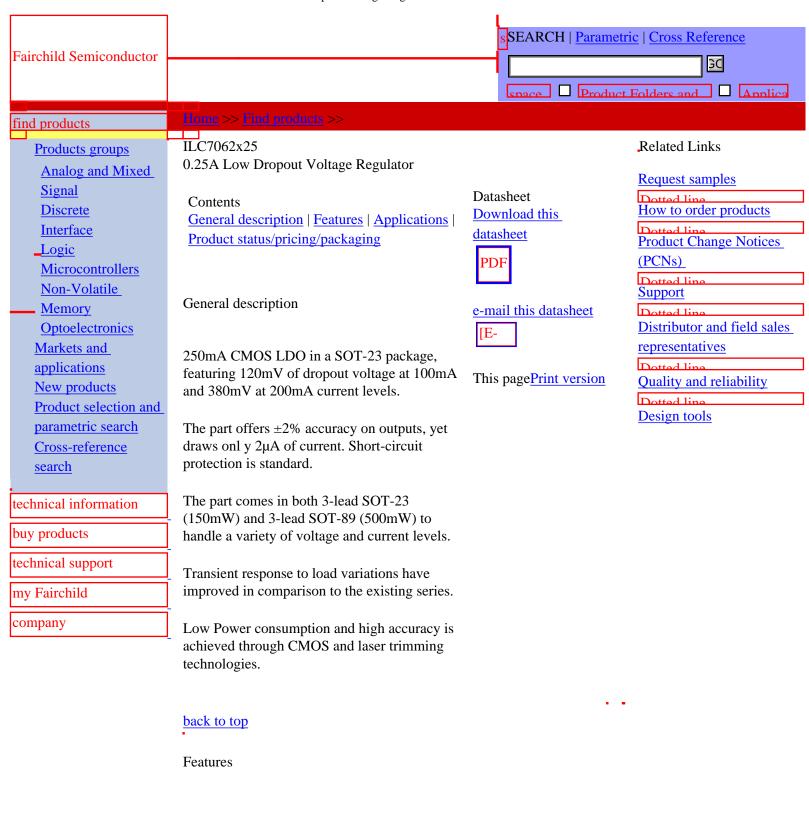
Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
ILC7062CM33X	Full Production	\$0.87	SOT-23	3	TAPE REEL

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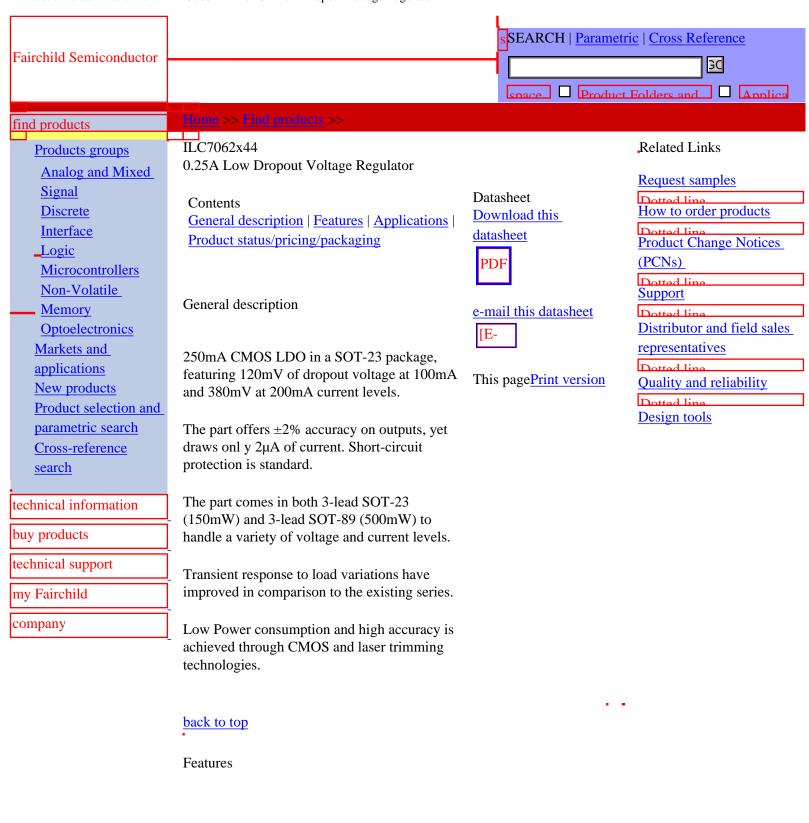
Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
ILC7062CM25X	Full Production	\$0.87	SOT-23	3	TAPE REEL
ILC7062CP25X	Lifetime Buy	\$0.87	N/A	N/A	TAPE REEL

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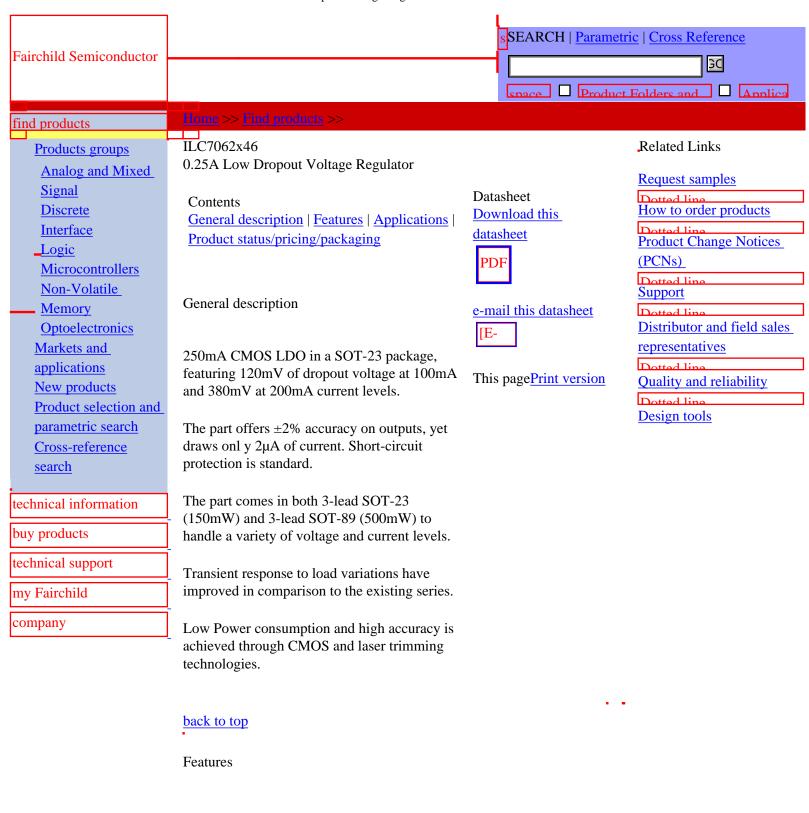
Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
ILC7062CM44X	Lifetime Buy	\$0.87	SOT-23	3	TAPE REEL

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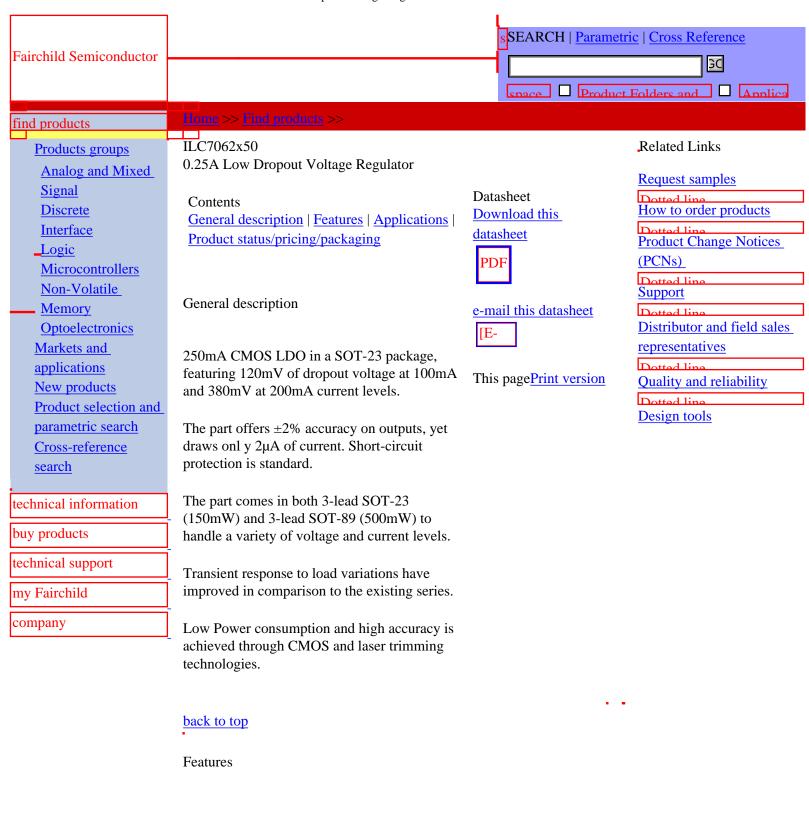
Product status/pricing/packaging

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Product	Product status	Pricing*	Packing method
ILC7062CP50X	Lifetime Buy	\$0.87	TAPE REEL

^{* 1,000} piece Budgetary Pricing

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