

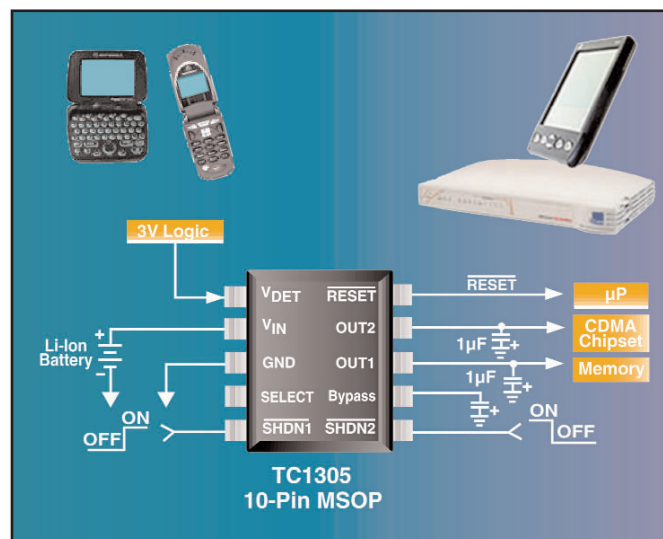
Power Management Combo Family

The **TC1300** is a 300mA low dropout linear regulator with an integrated system supervisor. The **TC1305** and **TC1306** are dual 150mA low dropout linear regulators with an integrated system supervisor. The **TC1307** is a quad 150mA LDO with an integrated system supervisor.

The TC1300, TC1305, TC1306 and TC1307 offer excellent dynamic performance with a very low operating current of 120µA per channel, independent of load. A shutdown mode is also available for reducing the regulator's total current to less than 0.5µA. The devices also feature low dropout voltage, for higher efficiency, and a very accurate output voltage of maximum $\pm 2.5\%$. Microchip combines supervisory and regulator functions on its power management combo ICs that use an advanced CMOS process resulting in a very low operating current and superior load and line transient response.

The devices are fully specified from 2.7V to 6.0V over the -40°C to $+125^{\circ}\text{C}$ temperature range. A variety of features is also provided to address a broad applications spectrum: shutdown mode for further power savings, RESET output for processor reset, reference bypass for output noise reduction, and Select Mode™ operation for maximum output voltage flexibility. The TC130X devices are available in small MSOP and QSOP packages.

The TC130X's extremely low operating current, high integration, and superior dynamic behavior make these devices ideal for battery-powered applications, such as cellular phones, pagers, personal digital assistants (PDA), laptops, MP3 players, and hand-held meters. Other applications may include industrial control, optical modules, datacom equipment, modems, flash module cards, PC cards, and portable equipment.



Features:

- Low operating current: 120µA maximum
- $\pm 0.5\%$ typical output voltage accuracy
- Small MSOP and QSOP packages
- Select Mode™ operation: selectable output voltages (TC1305/TC1306/TC1307)
- Excellent dynamic performance
- Very low dropout voltage:
 - 210mV (TC1300)
 - 150mV (TC1305/1306)
 - 165mV (TC1307)
- Integrated system supervisor
- Shutdown mode for further power savings
- Reference Bypass for reduced output noise (TC1300/1305)
- Over-temperature and over-current protection

Related Application Notes:

- AN761 LDO Thermal Consideration
- AN765 Using Microchip's Micropower LDOs



Additional Information:

- Microchip's web site: www.microchip.com
- Microchip's *Technical Library CD-ROM*, Order No. DS00161
- *Analog/Interface Handbook*, Order No. DS00207
- Product Line Card, Order No. DS00148
- *Analog Design Pack CD-ROM*, Order No. DS51205

Power Management Combo Family

Product	Output Current	V _{CC} Range	V _{DROP} at I _{OUTMAX} (typ.)	Output Channels	Select Mode™ Operation	SHDN	V _{REF} Bypass	RESET Output	Max. I _Q	Typical V _{OUT}	# Pins/Package
TC1300	300mA	2.7V to 6.0V	210mV	1		✓	✓	✓	160μA	±0.5%	8MS
TC1305	150mA	2.7V to 6.0V	150mV	2	✓	✓	✓	✓	160μA	±0.5%	10UN
TC1306	150mA	2.7V to 6.0V	150mV	2	✓	✓		✓	200μA	±0.5%	8MS
TC1307	150mA	2.7V to 6.0V	165mV	4	✓	✓		✓	370μA	±0.5%	16QR

Package Key: MS = MSOP, UN = 10-pin MSOP, QR = 16-Pin QSOP

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