CHANGE NOTIFICATION

Linear Technology Corporation
1630 McCarthy Blvd., Milpitas, CA 95035-7417
(408) 432-1900

March 18, 2013

PCN#: 031813

Dear Sir/Madam:

Subject: Notification of Change to LT4363-X family Die and Datasheet

Please be advised that Linear Technology Corporation has made minor changes to the die and datasheet of the subject products to improve the product performance.

LT4363-1 and LT4363-2 were modified to extend the I grade operating range down to 4V. A few specifications for C and I grades were also improved at the same time, such as the current limit threshold and the gate pull-up current. Finally, a few non-critical parameters were opened to accommodate new H and MP grade versions.

The datasheet has been updated to reflect new limits. Marked up pages of the datasheet are attached for your review.

The die change was qualified by performing characterization over the full operating temperature range and Operating Life test on a sample of 77 pieces at 125C for 1000 hrs. The new die will be shipped with an approximate datecode of 1314 for C and I grade parts. H and MP grade parts will be released with the new die only.

Should you have any further questions, please feel free to contact me at 408-432-1900 ext. 2519, or by e-mail at NGirn@Linear.com. If I do not hear from you by April 18th, 2013, we will consider this change to be approved by your company.

Sincerely,

Naib Girn
Quality Assurance Manager

add H-grade and MP-grade Specs
LT4363H -40°C to 125°C
LT4363MP -55°C to 125°C

ABSOLUTE MAXIMUM RATINGS

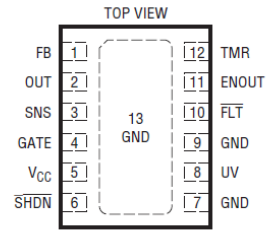
(Notes 1, 2)

V_{CC}, $\overline{SHDN}$, UV, OV ..... –60V to 100V
SNS, OUT ..... –0.3V to 100V
SNS to OUT ..... –30V to 30V
GATE (Note 3) ..... –0.3V to SNS + 10V
ENOUT, $\overline{FLT}$ ..... –0.3V to 100V
FB ..... –0.3V to 5.5V
TMR 0.5mA

Operating Temperature Range
LT4363C ..... 0°C to 70°C
LT4363I ..... –40°C to 85°C
Storage Temperature Range
DE12 ..... –65°C to 125°C
MS, SO ..... –65°C to 150°C
Lead Temperature (Soldering, 10 sec)
MS, SO ..... 300°C

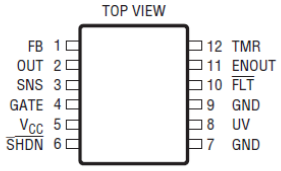
PIN CONFIGURATION

LT4363-1



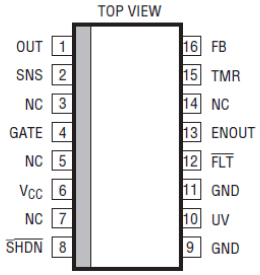
DE PACKAGE
12-LEAD (4mm × 3mm) PLASTIC DFN
T_{JMAX} = 125°C, θ_{JA} = 43°C/W
EXPOSED PAD (PIN 13) IS GND, CONNECTION TO PCB OPTIONAL

LT4363-1



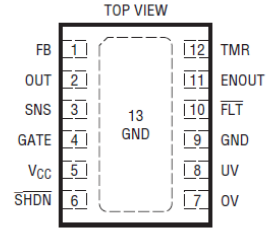
MS PACKAGE
12-LEAD PLASTIC MSOP
T_{JMAX} = 125°C, θ_{JA} = 135°C/W

LT4363-1



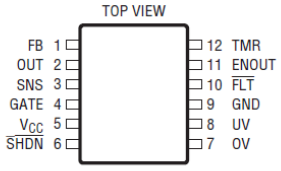
S PACKAGE
16-LEAD PLASTIC SO
T_{JMAX} = 125°C, θ_{JA} = 80°C/W

LT4363-2



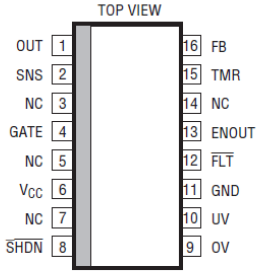
DE PACKAGE
12-LEAD (4mm × 3mm) PLASTIC DFN
T_{JMAX} = 125°C, θ_{JA} = 43°C/W
EXPOSED PAD (PIN 13) IS GND, CONNECTION TO PCB OPTIONAL

LT4363-2



MS PACKAGE
12-LEAD PLASTIC MSOP
T_{JMAX} = 125°C, θ_{JA} = 135°C/W

LT4363-2



S PACKAGE
16-LEAD PLASTIC SO
T_{JMAX} = 125°C, θ_{JA} = 80°C/W

add H-grade and MP-grade Order Information

ORDER INFORMATION

LEAD FREE FINISH	TAPE AND REEL	PART MARKING*	PACKAGE DESCRIPTION	TEMPERATURE RANGE
LT4363CDE-1#PBF	LT4363CDE-1#TRPBF	43631	12-Lead (4mm × 3mm) Plastic DFN	0°C to 70°C
LT4363IDE-1#PBF	LT4363IDE-1#TRPBF	43631	12-Lead (4mm × 3mm) Plastic DFN	–40°C to 85°C
LT4363CDE-2#PBF	LT4363CDE-2#TRPBF	43632	12-Lead (4mm × 3mm) Plastic DFN	0°C to 70°C
LT4363IDE-2#PBF	LT4363IDE-2#TRPBF	43632	12-Lead (4mm × 3mm) Plastic DFN	–40°C to 85°C
LT4363CMS-1#PBF	LT4363CMS-1#TRPBF	43631	12-Lead Plastic MSOP	0°C to 70°C
LT4363IMS-1#PBF	LT4363IMS-1#TRPBF	43631	12-Lead Plastic MSOP	–40°C to 85°C
LT4363CMS-2#PBF	LT4363CMS-2#TRPBF	43632	12-Lead Plastic MSOP	0°C to 70°C
LT4363IMS-2#PBF	LT4363IMS-2#TRPBF	43632	12-Lead Plastic MSOP	–40°C to 85°C
LT4363CS-1#PBF	LT4363CS-1#TRPBF	LT4363S-1	16-Lead Plastic SO	0°C to 70°C
LT4363IS-1#PBF	LT4363IS-1#TRPBF	LT4363S-1	16-Lead Plastic SO	–40°C to 85°C
LT4363CS-2#PBF	LT4363CS-2#TRPBF	LT4363S-2	16-Lead Plastic SO	0°C to 70°C
LT4363IS-2#PBF	LT4363IS-2#TRPBF	LT4363S-2	16-Lead Plastic SO	–40°C to 85°C

Consult LTC Marketing for parts specified with wider operating temperature ranges. *The temperature grade is identified by a label on the shipping container.
Consult LTC Marketing for information on non-standard lead based finish parts.

For more information on lead free part marking, go to: http://www.linear.com/leadfree/
For more information on tape and reel specifications, go to: http://www.linear.com/tapeandreel/

ELECTRICAL CHARACTERISTICS

The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at T_A = 25°C. V_{CC} = 12V, unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS		MIN	TYP	MAX	UNITS
V_{CC}	Operating Voltage Range	~~LT4363C~~ ~~LT4363I~~	● ●	4 ~~4.5~~		80 ~~80~~	V ~~V~~
I_{CC}	V_{CC} Supply Current	$\overline{SHDN}$ Open, OUT = SNS = 12V $\overline{SHDN}$ = 0V, OUT = SNS = 0V	● ●		0.7 7	1.2 20 40	mA µA µA
I_R	Reverse Input Current	V_{CC} = –60V, $\overline{SHDN}$, UV, OV Open V_{CC} = $\overline{SHDN}$ = UV = OV = –60V	● ●		–0.5 –3	~~–3~~ –10	-4 mA mA
ΔV_{GATE}	GATE Drive	ΔV_{GATE} = (GATE – SNS);V_{CC} = OUT V_{CC} = 4V; I_{GATE} = –0.5µA, 0µA 9V ≤ V_{CC} ≤ 80V; I_{GATE} = –1µA, 0µA	 ● ●	 4.5 10	 13	 16	 V V
$I_{GATE(UP)}$	GATE Pull-Up Current	V_{CC} = GATE = OUT = 12V V_{CC} = GATE = OUT = 48V	● ●	~~–10~~ -15 ~~–10~~ -20	~~–20~~ -30 ~~–25~~ -40	~~–35~~ -45 ~~–40~~ -65	µA µA
$I_{GATE(DN)}$	GATE Pull-Down Current	Overvoltage: FB = 1.5V, GATE = 12V, OUT = 5V Overcurrent: ΔV_{SNS} = 150mV, V_{GATE} = 10V, OUT = 0V Shutdown/UV Mode: $\overline{SHDN}$ = 0V, GATE = 10V UV = 1V, GATE = 10V	● ● ● ●	75 50 50 200	150 100 1000 1000		mA mA µA µA
V_{FB}	FB Servo Voltage	GATE = 12V; OUT = 8V	●	1.25	1.275	1.3	V
I_{FB}	FB Input Current	V_{FB} = 1.275V	●		±0.2	±1	µA
ΔV_{SNS}	Current Limit Sense Voltage ΔV_{SNS} = (SNS – OUT)	V_{CC} = 12V, OUT = 3V to 12V V_{CC} = 48V, OUT = 3V to 48V	● ●	~~43~~ 45 ~~45~~ 48	~~50~~ ~~52~~ 53	~~58~~ 55 ~~59~~ 58	mV mV
	Current Limit Foldback	V_{CC} = 12V, OUT = 0V to 1V V_{CC} = 48V, OUT = 0V to 1V	● ●	15 16	25 27	35 36	mV mV
I_{SNS}	SNS Input Current	OUT = SNS = 3V to 80V OUT = SNS = 0V	● ●		20 –10	~~30~~ 40 –15	µA µA

ELECTRICAL CHARACTERISTICS

The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at T_A = 25°C. V_{CC} = 12V, unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS		MIN	TYP	MAX	UNITS
I_{TMR}	TMR Pull-up Current, Overvoltage	TMR = 1V, FB = 1.5V, ΔV_{DS} = 0.5V TMR = 1V, FB = 1.5V, ΔV_{DS} = 75V	● ●	–1.7 –42	–4 –50	–6 –58	µA µA
	TMR Pull-up Current, OV Warning	TMR = 1.325V, FB = 1.5V, ΔV_{DS} = 0.5V	●	–3	–5	–7	µA
	TMR Pull-up Current, Overcurrent	TMR = 1V, ΔV_{SNS} = 100mV, ΔV_{DS} = 0.5V TMR = 1V, ΔV_{SNS} = 100mV, ΔV_{DS} = 80V	● ●	–5 –190	–9 –250	–13 –310	µA µA
	TMR Pull-up Current, Cool Down	TMR = 3V, FB = 1.5V, ΔV_{SNS} = 0V, ΔV_{DS} = 0V	●	–1	–2.3	–3.5	µA
	TMR Pin Pull-down Current, Cool Down	V_{TMR} = 3V, FB = 1.5V, ΔV_{SNS} = 0V, ΔV_{DS} = 0V	●	1	2	4	µA
$V_{TMR(F)}$ $V_{TMR(G)}$ $V_{TMR(R)}$	TMR Fault Threshold TMR Gate Off Threshold TMR Restart Threshold	TMR Rising TMR Rising TMR Falling, LT4363-2	● ● ●	1.235 1.335 0.47	1.275 1.375 0.5	1.31 1.41 0.53	V V V
ΔV_{TMR}	Early Warning Window	$V_{TMR(G)} - V_{TMR(F)}$	●	80	100	120	mV
$V_{TMR(H)}$	TMR Cool Down High Threshold	V_{CC} = 7V to 80V, TMR Rising	●	~~3.7~~ 3.5	4.3	~~5~~ 5.4	V
V_{UV}	UV Input Threshold	UV Rising	●	1.24	1.275	1.31	V
$V_{UV(HYST)}$	UV Input Hysteresis				12		mV
V_{OV}	OV Input Threshold	OV Rising	●	1.24	1.275	1.31	V
$V_{OV(HYST)}$	OV Input Hysteresis				7.5		mV
I_{IN}	UV, OV Input Current	UV = 1.275V UV = –60V	● ●		±0.2 –1	±1 –2	µA mA
I_{LEAK}	$\overline{FLT}$, ENOUT Leakage Current	$\overline{FLT}$, ENOUT = 80V	●		±0.5	±2.5	µA
V_{OL}	$\overline{FLT}$, ENOUT Output Low	I_{SINK} = 0.1mA I_{SINK} = 2mA	● ●		300 2	800 9	mV V
$\Delta V_{OUT(TH)}$	OUT High Threshold	$\Delta V_{OUT} = V_{CC} - V_{OUT}$, ENOUT From Low to High	●	0.25	0.5	0.75	V
$\Delta V_{OUT(RST)}$	OUT Reset Threshold	ENOUT From High to Low	●	~~1.9~~ 1.8	2.7	3.6	V
I_{OUT}	OUT Input Current	V_{CC} = OUT = 12V, $\overline{SHDN}$ Open V_{CC} = OUT = 12V, $\overline{SHDN}$ = 0V	● ●		0.25 0.25	0.5 1	mA mA
$V_{\overline{SHDN}}$	$\overline{SHDN}$ Threshold	V_{CC} = 4V to 80V	 ●	0.6 0.4	1.4	1.7 2.1	V V
$V_{\overline{SHDN}(Z)}$	$\overline{SHDN}$ Open Voltage	V_{CC} = 4V to 80V	●			2.2	V
$I_{\overline{SHDN}}$	$\overline{SHDN}$ Current	$\overline{SHDN}$ = 0.4V	●	–1	–4	–8	µA
t_{RESET}	$\overline{SHDN}$ Reset Time	$\overline{SHDN} \leq$ 0.4V; LT4363-1	●			100	µs
D	Retry Duty Cycle; Overvoltage	V_{CC} = 80V, OUT = 16V, FB = 1.5V; LT4363-2	●		1	2	%
	Retry Duty Cycle; Output Short	V_{CC} = 12V, OUT = 0V, ΔV_{SNS} = 100mV; LT4363-2	●		0.76	1	%
$t_{OFF(UV)}$	Undervoltage Turn Off Propagation Delay	UV Steps from 1.5V to 1V	●		2	5	µs
$t_{OFF(OV)}$	Overvoltage Turn Off Propagation Delay	FB Steps from 0V to 1.5V; OUT = 0V	●		0.25	1	µs
$t_{OFF(OC)}$	Overcurrent Turn Off Propagation Delay	ΔV_{SNS} Steps from 0V to 150mV; OUT = 0V	●		1	2.5	µs

Note 1: Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. Exposure to any Absolute Maximum Rating condition for extended periods may affect device reliability and lifetime.

Note 2: All currents into device pins are positive all current out of device pins are negative. All voltages are referenced to GND unless otherwise specified.

Note 3: An internal clamp limits the GATE pin to a minimum of 10V above the OUT pin. Driving this pin to voltages beyond the clamp may damage the device.