

PCMCIA, POWER AND MOTOR CONTROL CIRCUITS

High Side Switch Drivers

LTC1153 – Electronic Circuit Breaker w/ Programmable Trip, Reset, Current Level
 LTC1154 – Single N-Ch FET Switch Driver w/ Short-Circuit Protection
 LTC1155 – Dual N-Ch FET Switch Drivers w/ Short-Circuit Protection
 LTC1156 – Quad N-Ch FET Switch Drivers w/ Short-Circuit Protection
 LTC1157 – Dual N-Ch FET Switch Drivers for 3.3V Operation (Also for Low Cost 5V Applications)
 LT1161 – Quad High Voltage N-Channel FET Switch Drivers with Reset and Short-Circuit Protection
 LTC1163 – Triple N-Ch FET Switch Drivers for 1.8V Operation (and up to 5V Applications)
 LTC1165 – Triple N-Ch FET Switch Drivers for 1.8V Operation (and up to 5V Applications)
 LTC1177 – UL Recognized Isolated MOSFET Driver
 LTC1255 – Dual N-Ch FET Switch Drivers w/ Short Circuit Protection, 24V Operation

Integrated High Side Switches

LT1188 – 1.5A HSS, Output Protected Against Inductive Kickback Controlled Slew Rate/Low RF Noise STATUS Line for Diagnostics Protected Against Overtemp, Load Faults
 LT1089 – 7.5A HSS Low Loss, Only 1.5V at 7.5A Protected Against Overtemp, Overcurrent Low Quiescent Current
 LTC1477/78 – Single/Dual Protected 1.5A HSS. Low 0.07 Ω ON Resistance, Operates From 2.7V to 5.5V, No Parasitic Body Diode

Half-/Full-Bridge N-Ch MOSFET Drivers

LT1158 – 5V to 30V Operation, Drives DC Motors and Switching Power Supply N-Ch MOSFET Switch Gates, On-Chip Charge Pump, Adaptive Anti-Shoot-Through, Fully Protected, 150ns Transition Times Driving 3000pF
 LT1160 – 10V to 60V Operation, Drives DC Motors and Switching Power Supply N-CH MOSFET Switch Gates, Adaptive Anti-Shoot Through, 180ns Transition Times Driving 10,000pF
 LT1162 – Full-Bridge Version of LT1160

PRODUCT	PACKAGES	FUNCTION	MIN V _{SUPPLY}	MAX V _{IN}	COMMENTS
LT1089	TO-220, TO-3	7.5A High-Side Switch	4V	20V	Low loss, Low I _Q
LT1106	20-Pin TSSOP	VPP Flash Memory Supply	5V	7V	500kHz Operation, 1.1mm Component Height
LTC1153	8-Pin DIP, SO	Electronic Circuit Breaker	4.5V	22V	Has Adjustable Reset Time
LTC1154	8-Pin DIP, SO	Single High Side Driver	4.5V	22V	Single Version of LTC1155
LTC1155	8-Pin DIP, SO	Dual High Side Driver	4.5V	22V	Good for Power Management
LTC1156	16-Pin DIP, SO	Quad High Side Driver	4.5V	22V	Good for Multiple Supply Switching
LTC1157	8-Pin DIP, SO	Dual 3.3V High Side Driver	2.7V	7V	Good for 3.3V Power Management
LT1158	16-Pin DIP, SO	Half-Bridge Driver	4.5V	36V	Synchronous Switching Regulators Too
LT1160	14-Pin DIP, SO	Half-Bridge Driver	10V	60V	Dual N-Channel MOSFET Driver
LT1161	20-Pin DIP, SO	Quad High Side Driver	8V	60V	Good for Industrial (24V) Applications
LT1162	24-Pin DIP, SO	Full-Bridge Driver	10V	60V	Dual Version of LT1160
LTC1163	8-Pin DIP, SO	Triple High Side Driver	1.8V	6V	Good for 2-Cell Power Management
LTC1165	8-Pin DIP, SO	Triple High Side Driver	1.8V	6V	Inverted Logic Version of LTC1163
LTC1177	18-Pin SO Wide	Isolated MOSFET Driver	5/12	—	No Secondary Power Required. UL Recognized
LT1188	TO-220, TO-3	1.5A High Side Switch	5V	30V	Good for Automotive
LTC1255	8-Pin DIP, SO	Dual High Side Driver	9V	30V	Good for Industrial (24V) Applications
LT1312	8-Pin SO	Single VPP Regulator	13V	20V	SafeSlot™ Protection, Low I _Q
LT1313	16-Pin SO	Dual VPP Regulator	13V	20V	SafeSlot Protection, Low I _Q
LTC1314	14-Pin SO	Single VPP Switch/V _{CC} Driver	5V	13.2V	Drives Low Cost N-Channels, Low 0.1 μ A I _Q
LTC1315	24-Pin SSOP	Dual VPP Switch/V _{CC} Driver	5V	13.2V	Drives Low Cost N-Channels, Low 0.1 μ A I _Q
LTC1470	8-Pin SO	Protected V _{CC} 5V/3V Switch	5V	—	Internal 1A MOSFET Switches
LTC1471	16-Pin SO	Dual Protected V _{CC} Switch	5V	—	Internal 1A MOSFET Switches
LTC1472	16-Pin SO	Single VPP/V _{CC} Switch	5V	—	Internal VPP and V _{CC} MOSFET Switches

SafeSlot is a trademark of Linear Technology Corporation

PCMCIA Host and Card Power Solutions

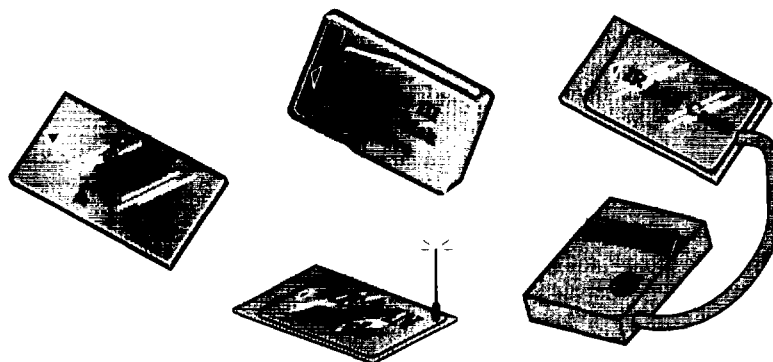
Host



PCMCIA Power Switching Solutions

V_{CC} : 3.3V or 5V
VPP: 0V, V_{CC} , 12V, High-Z

Cards



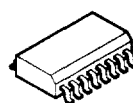
On-Card DC/DC Conversion Solutions (See pages 3-23 to 3-26)

PC Card Host Power Interface

Linear Technology PCMCIA Product Family

DEVICE	DESCRIPTION	PACKAGE
LT1312	Single PCMCIA VPP Driver/Regulator	8-Pin SO
LT1313	Dual PCMCIA VPP Driver/Regulator	16-Pin SO*
LTC1314	Single PCMCIA Switch Matrix	14-Pin SO
LTC1315	Dual PCMCIA Switch Matrix	24-Pin SSOP
LTC1470	Protected V_{CC} 5V/3.3V Switch Matrix	8-Pin SO
LTC1471	Dual Protected V_{CC} 5V/3.3V Switch Matrix	16-Pin SO*
LTC1472	Protected V_{CC} and VPP Switch Matrix	16-Pin SO*

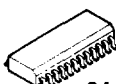
*Narrow Body



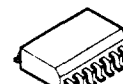
16-Lead SO
(Narrow Body)



8-Lead SO



24-Lead SSOP



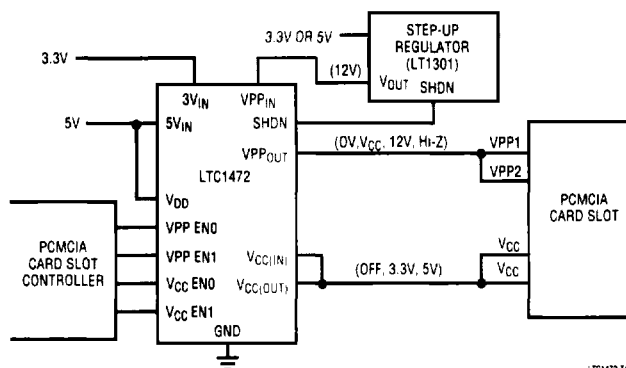
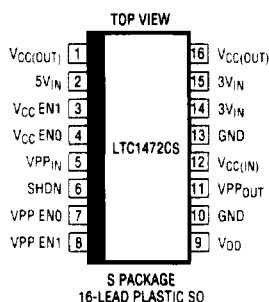
14-Lead SO

(Packages Enlarged for Clarity)

Selection
Guides

LTC1472 Protected PCMCIA V_{CC} and VPP Switching Matrix

- Both V_{CC} and VPP Switching in a Single Package
- Built-In SafeSlot™ Current Limit and Thermal Shutdown
- 16-Pin (Narrow) SO Package
- Inrush Current Limited (Drives 150 μ F Loads)
- Continuous 12V Power Not Required
- Extremely Low $R_{DS(ON)}$ NMOS Switches
- Guaranteed 1A V_{CC} Current and 120mA VPP Current
- 1 μ A Quiescent Current in Standby
- No External Components Required
- Compatible with Industry Standard Controllers
- Break-Before-Make Switching
- Controlled Rise and Fall Times
- Compatible with Cirrus Logic CL-PD6720, Intel 365-type and Other PCMCIA Host Adaptor Chips



V_{CC} Switch Truth Table

V_{CC_EN0}	V_{CC_EN1}	$V_{CC(OUT)}$
0	0	Off
1	0	5V
0	1	3.3V
1	1	Off

VPP Switch Truth Table

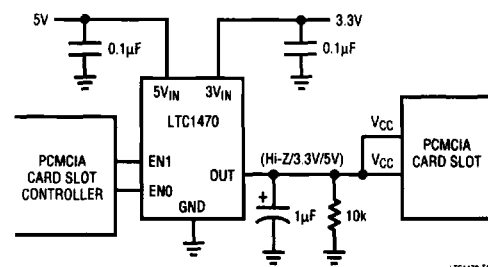
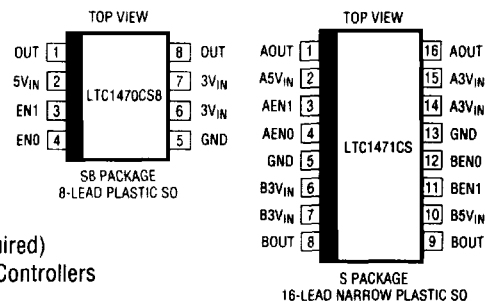
VPP_EN0	VPP_EN1	VPP_OUT
0	0	0V
0	1	$V_{CC(IN)}$
1	0	VPP_IN
1	1	Hi-Z

SafeSlot is a trademark of Linear Technology Corporation.

PCMCIA Host and Card Power Solutions

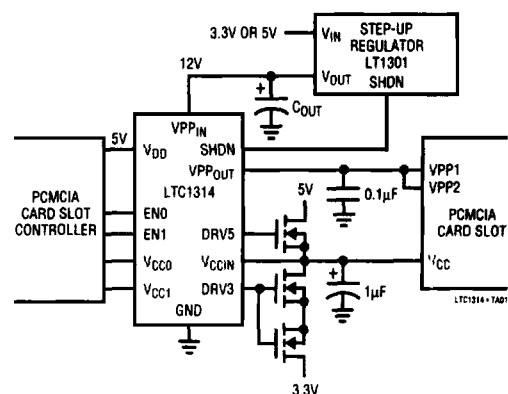
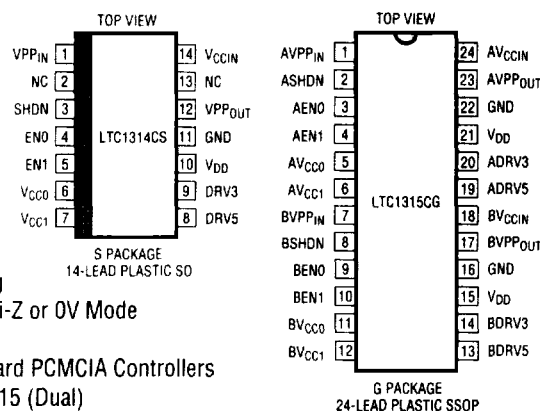
LTC1470/LTC1471 Single/Dual PCMCIA Protected 5V/3.3V V_{CC} Switch

- 3.3V/5V Switching in 8-Pin SO Package
- Built-In SafeSlot Current Limit and Thermal Shutdown
- Extremely Low $R_{DS(ON)}$ MOSFET Switches
- 1A Output Current Capability
- 1 μ A Quiescent Current in Standby
- Built-In Charge Pump (No 12V Required)
- Compatible with Industry Standard Controllers
- Break-Before-Make Switching
- Controlled Rise and Fall Times
- Logic Compatible with Standard PCMCIA Controllers
- LTC1470 (Single) and LTC1471 (Dual)



LTC1314/LTC1315 Single/Dual PCMCIA Switching Matrix with Built-In N-Channel MOSFET V_{CC} Switch Drivers

- Output Current Capability: 120mA
- 12V Regulator Can Be Shut Down
- Built-In N-Channel V_{CC} Switch Drivers
- Digital Selection of 0V, $V_{CC(IN)}$, $V_{PP(IN)}$ or Hi-Z
- 3.3V or 5V V_{CC} Supply
- Break-Before-Make Switching
- 0.1 μ A Quiescent Current in Hi-Z or 0V Mode
- No $V_{PP(OUT)}$ Overshoot
- Logic Compatible with Standard PCMCIA Controllers
- LTC1314 (Single) and LTC1315 (Dual)



LT1312/LT1313 Single/Dual PCMCIA V_{CC} Driver/Regulator

- Digital Selection of 0V, V_{CC} , 12V or Hi-Z
- Output Current Capability: 120mA
- Internal Current Limiting and Thermal Shutdown
- Automatic Switching from 3.3V to 5V
- Powered from Unregulated 13V to 20V Supply
- Logic Compatible with Standard PCMCIA Controllers
- Output Capacitors: 1 μ F
- Quiescent Current in Hi-Z or 0V Mode: 60 μ A
- Independent VPP Valid Status Feedback Signals
- No VPP Overshoot

