

N- AND P-CHANNEL MOSFETs

NEC ELECTRONICS AMERICA

Key Features

- › Extremely low on-state resistance
- › Thin, high-power HVSON package
- › 4.5V gate-driven configuration

Applications

- › Synchronous rectifiers in DC/DC converters
- › Notebook computers
- › Servers

Power MOSFETs for DC/DC Conversion and Li-ion Battery Protection

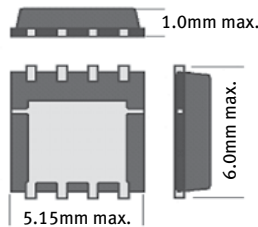
μPA272xUT1A and μPA273xUT1A Series



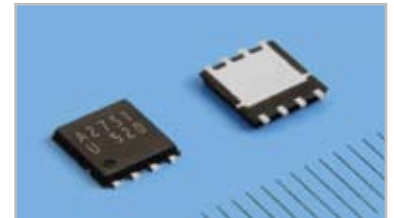
Defeating heat with a small package, these two series of power MOSFETs from NEC Electronics America handle DC/DC conversion and battery protection tasks. The devices' low $R_{DS(ON)}$ minimizes power dissipation, and an HVSON package trims device thickness to just 1 millimeter (mm). This package enables part of the device's lead frame to connect directly to the circuit board for efficient heat dissipation. Both series of devices are 4.5V gate-driven types, and both are particularly well suited for notebook PCs.

The μPA272xUT1A Series consists of N-channel MOSFETs that provide high-speed switching performance to handle synchronous rectifier applications for DC/DC converters. $R_{DS(ON)}$ is as low as 2.5 mΩ max at a V_{GS} of 10V ($I_D = 17A$). All of these devices have a V_{DSS} of 30V.

Designed to provide protection for battery applications, the μPA273xUT1A Series prevents heat generation and explosions that may result from lithium-ion-battery over-current. This series consists of P-channel MOSFETs that have a V_{DSS} of -30V. $R_{DS(ON)}$ for these devices is down to 2.6 mΩ max at a V_{GS} of -10V ($I_D = 22A$).



HVSON Package



μPA272xUT1A Series

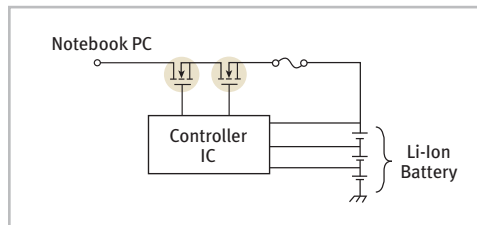
APPLICATIONS	NEC ELECTRONICS PART NUMBER	V_{DSS} (V)	I_D (DC) (A)	$R_{DS(ON)}$ TYP/MAX (mohm)		C_{ISS} (pF)	C_{RSS} (pF)	Q_G (nC) $V_{GS} = 5V$	Q_G (nC)
				@ 10V	@ 4.5V				
Low Side in Notebook PCs	μPA2722UT1A	30	±29	2.6/3.3	3.4/4.6	6200	540	48	20
Low Side in Notebook PCs	μPA2723UT1A	30	±33	2.0/2.5	3.6/3.5	8610	700	67	23
DC/DC Converters	μPA2724UT1A	30	±29	2.7/3.3	3.5/5.0	4610	430	39	13
DC/DC Converters	μPA2725UT1A	30	±25	3.8/5.0	5.2/7.5	2800	260	24	7.5
DC/DC Converters	μPA2726UT1A	30	±20	5.7/7.0	7.7/11	1920	170	17	5.2
DC/DC Converters	μPA2727UT1A	30	±16	7.7/9.6	10/15	1260	110	11	3.3

μPA272xUT1A and μPA273xUT1A Series

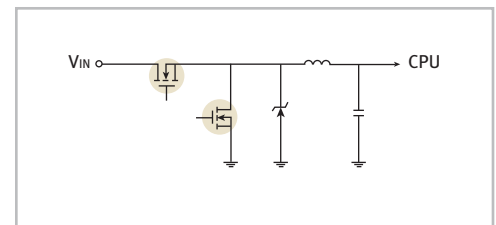
μPA273xUT1A Series

NEC ELECTRONICS PART NUMBER	V _{DD5} (V)	V _{GSS} (V)	I _D (DC) (A)	I _D (PULSE) (A)	R _{DS(ON)} TYP/MAX (mohm)		C _{ISS} (pF)	Q _G (nC) V _{GS} = -24V
					@ 10V	@ 4.5V		
μPA2731UT1A	-30	±20	±44	±180	2.6/3.3	4.2/6.4	3620	149
μPA2732UT1A	-30	±20	±40	±160	3.1/3.7	4.3/6.7	3260	133

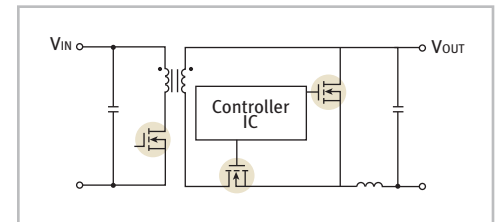
Li-ion Battery Protection
with μPA273xUT1A Series



Low-Side Power Circuit in Notebook PC
with μPA272xUT1A Series



DC/DC Converter
with μPA272xUT1A Series



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