



UASS101

Preliminary

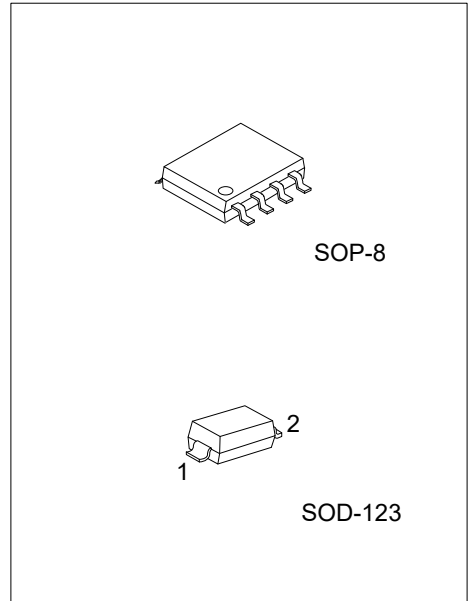
LINEAR INTEGRATED CIRCUIT

MAGIC SWITCH

■ DESCRIPTION

The UTC **UASS101** is a Magic Switch to remove Phantom Power consumption. An equivalent circuit has been provided in Fig1. The Phantom Power consumption due to EMI Cap.'s discharge resistor can be removed by a pretty simple circuit as described in the block diagram. However, Magic Switch could be most cost-effective, layout easy.....choice for designing zero no load consumption application.

The UTC **UASS101** behaves like a magic switch or a low-pass filter. It allows DC passes and AC is blocked. The UTC **UASS101** allows frequency more than 20 Hz to pass (AC plug-in Magic switch turn off) with ~ Zero Input Power. Magic switch is turn on discharge EMI's Cap when frequency small than 20Hz.



■ FEATURES

- * Remove Phantom Power consumption
- * Meet safety ICE 60065/60950
- * ~1KV Break down voltage
- * For lightning surge sensitive environment
- * Can work with any EMI's capacitor filter
- * Most cost effective, Layout easy solution, easily to meet Erp lot6 tier 2 requirement

■ ORDERING INFORMATION

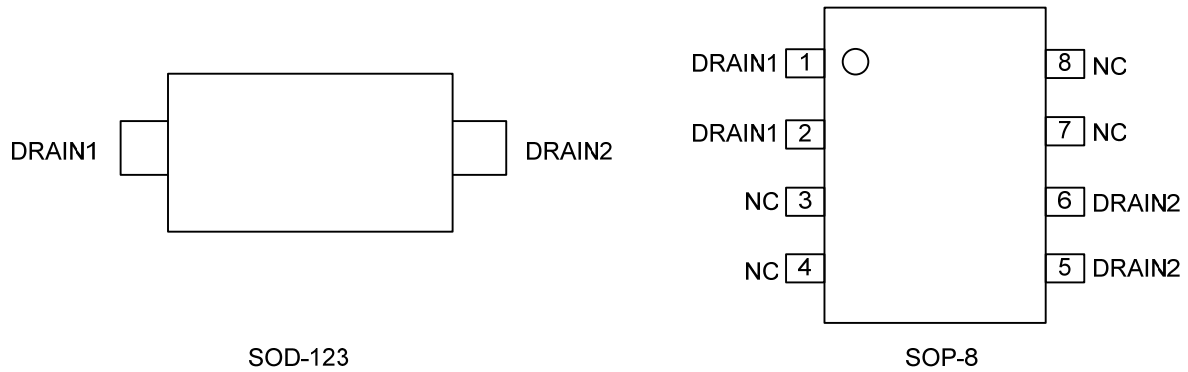
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UASS101L-CA2-R	UASS101G-CA2-R	SOD-123	Tape Reel
UASS101L-S08-R	UASS101G-S08-R	SOP-8	Tape Reel

<p>UASS101G-CA2-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) R: Tape Reel (2) CA2: SOD-123, S08: SOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

SOD-123	SOP-8

■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.		PIN NAME	DESCRIPTION
SOD-123	SOP-8		
1	1, 2	D1	The Drain of MOS1.
2	5, 6	D2	The Drain of MOS2.
-	3, 4, 7, 8	NC	Not Connected.

■ BLOCK DIAGRAM

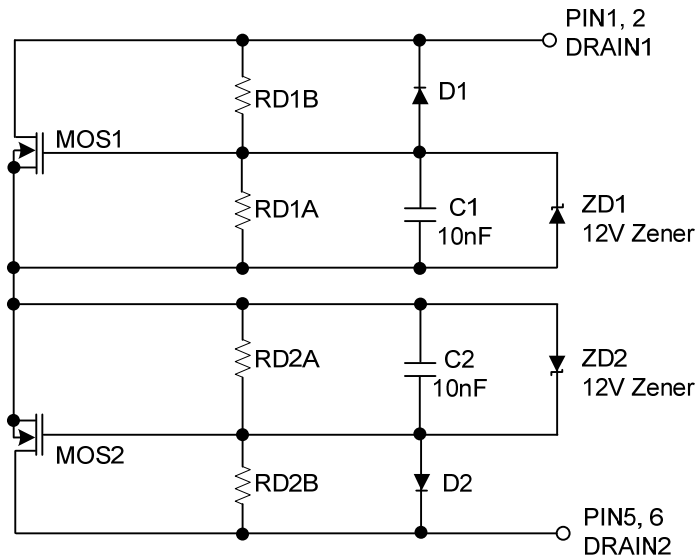


Figure 1. Magic Switch Equivalent Circuit

■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Turn on ID Max. Current Continues	(R _{d1} +R _{d2} >264VAC*1.414/2mA=186Kohm)		2	mA
Package Power Dissipation (T _A ≤25°C)	SOD-123	P _D	0.5	W
	SOP-8		0.86	W
D1 to D2 Voltage		V _{DSS}	1000	V
Junction Temperature		T _J	+150	°C
Storage Temperature		T _{STG}	-65 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

PARAMETER		SYMBOL	RATING	UNIT
Junction to Ambient	SOD-123	θ _{JA}	250	°C/W
	SOP-8		145.7	°C/W
Junction to Case	SOD-123	θ _{JC}	50	°C/W
	SOP-8		27.8	°C/W

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
BREAKDOWN VOLTAGE						
D1 to D2	BV _{DSS}			1		KV
INTERNAL 1KV MOSFET TURN ON DELAY TIME						
Turn On Delay Time	t _{ON} delay	V _{D1D2} =127V, R _{D1} =R _{D2} =250K (Figure2)			280	mS
1KV MOSFET RDS(ON)						
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =12V @ 25°C		60		Kohm
DISCHARGE TIME (400V DISCHARGED TO 60V)						
400V to 60V Discharging Time	T _{discharging}	R _{D1} +R _{D2} =250K, C _X =0.68uF		0.5		S
SUPPLY CURRENT OF MAGIC SWITCH (TURNING OFF 1kv MOSFET)						
Magic Switch Current @ Line Frequency=50 Hz	I supply ac	V _{in} = 230 Vac and Frequency =50 Hz			20	uA

■ TYPICAL APPLICATION CIRCUIT

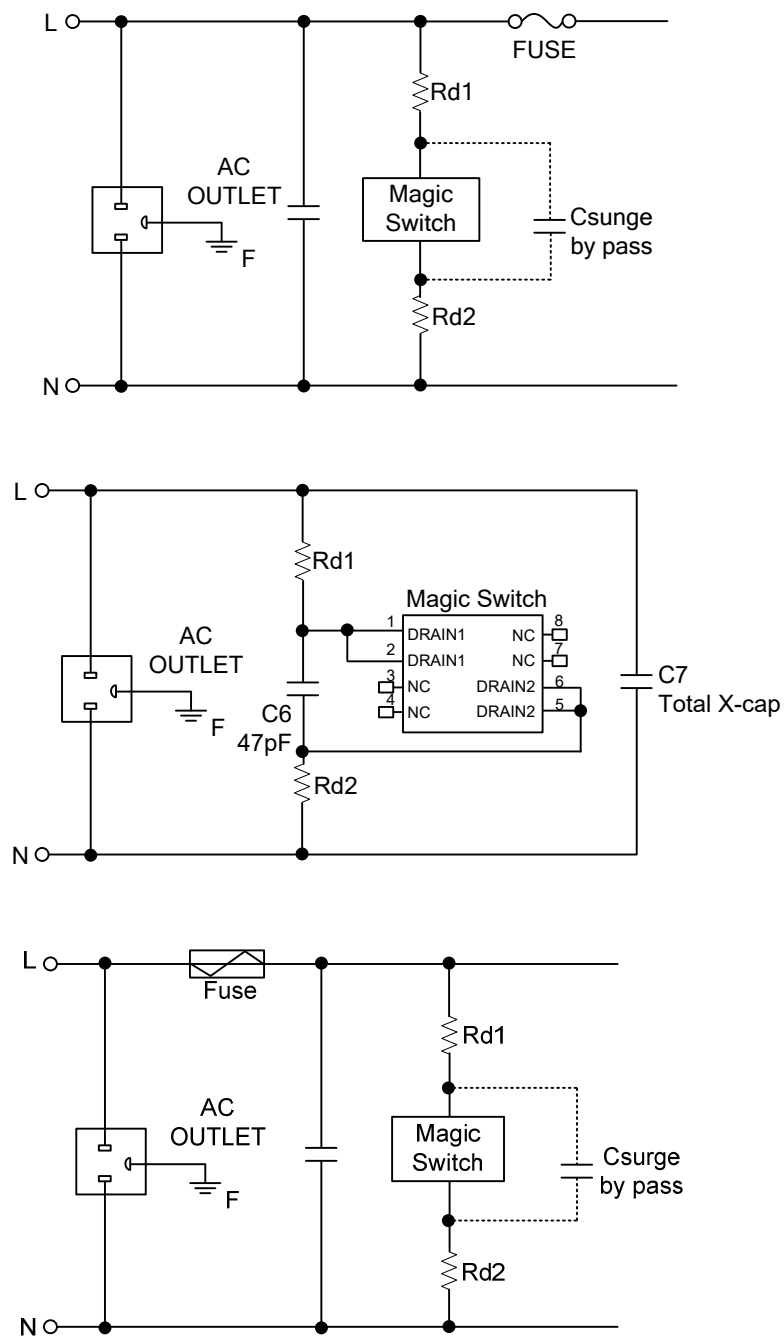


Figure 2. Magic Switch Application

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