

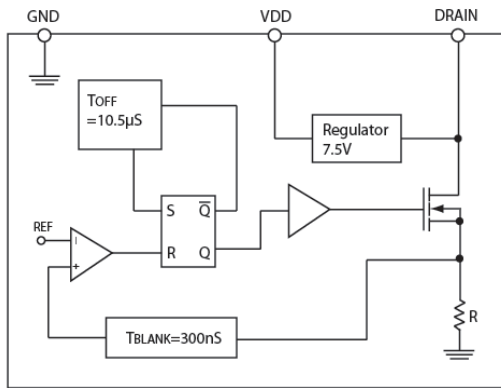
Features

- Working DC voltage range : 20 to 400VDC
- Working AC voltage range : 85 to 264VAC
- Constant current: 50mA
- Fixed off time control
- Internal power MOSFET

Applications

- Decorative lighting
- Low power lighting

Equivalent Block Diagram



Package Pin out



General Description

The LD7208 is a high efficiency PWM control LED Driver features with a 3-terminal fixed output voltage packaged in TO-92 and SOT-89. It is designed to provide LED strings with higher input voltage up to 400V.

LD7208 includes an internal high voltage MOSFET controlled with fixed off-time around 10.5µS. The new chip has proved to be high-quality and most reliable to supply 50mA constant current. With the new features, the industry-leading IC provides excellent regulation of output current at the input range from 85 ~ 265VAC or 20 ~ 400VDC.

Ordering Information

		Packing Options	
Part No.	Package	Bag(BG)	Tape & Reel(TR)
LD7208	SOT-89-3	LD7208L5-BG	LD7208L5-TR

- Package material default is "Green" package.

Product Marking

LD8888	◇ Line 1 – "LD" is a fixed character
SSSSS...	8888: product name
●	◇ Line 2 – SSSSS...: lot number

Thermal Characteristics

Package	Power Dissipation @T _A =25°C	θ _{JC} °C/W	θ _{JA} °C/W
SOT-89	1.3W	100	128

Absolute Maximum Ratings

Parameter	Value	Units
Maximum operating voltage	475	V
Maximum supply current	5	mA
Ambient temperature range	-40 to +85	°C
Storage temperature range	-65 to +150	°C
Junction temperature range	-40 to +150	°C

The values beyond the boundaries of absolute maximum rating may cause the damage to the device. Functional operation in this context is not implied. Continuous use of the device at the absolute rating level might influence device reliability. All voltages have their reference to device ground.

Electrical Characteristics

Test conditions unless otherwise specified: $T_A=25^\circ\text{C}$, $V_{IN}=50\text{V}$

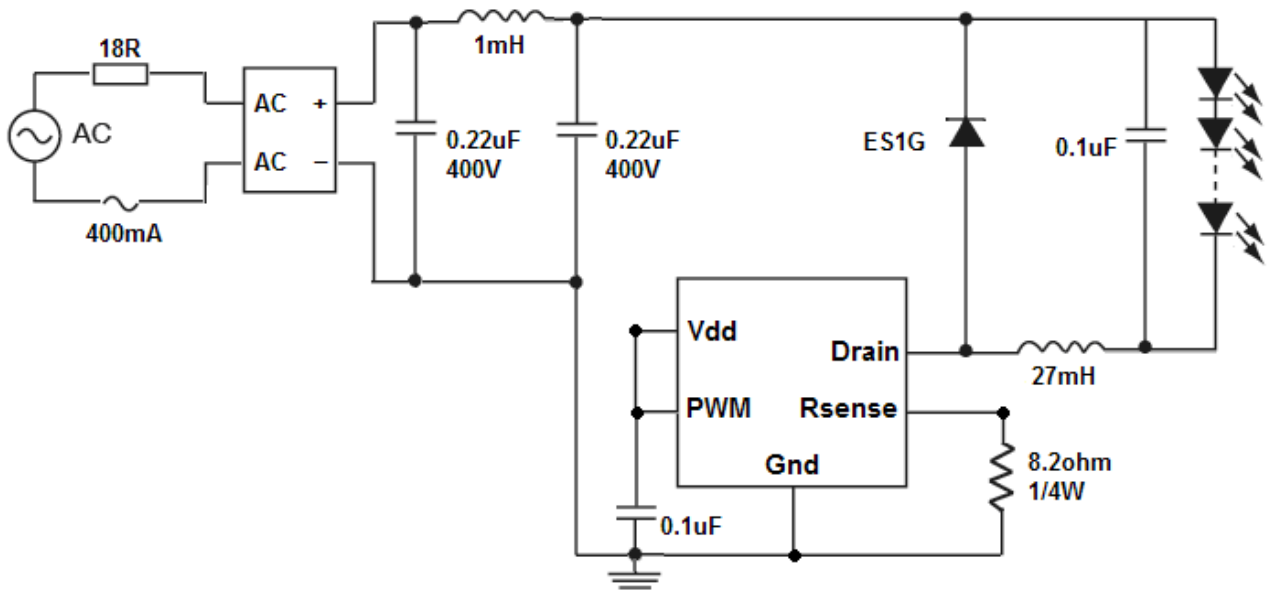
Parameter	Symbol	Condition	Min	Typ	Max	Units
Regulator						
V_{DD} output	V_{DD}	–	–	7.5	–	V
V_{DRAIN} supply voltage	V_{DRAIN}	–	–	20	–	V
V_{DD} under-voltage threshold	V_{UVLO}	–	5.0	–	–	V
V_{DD} under-voltage lockout Hysteresis	ΔV_{UVLO}	–	–	200	–	mV
Input quiescent current	I_{DD}	$V_{DD(EXT)} = 8.5\text{V} \sim 400\text{V}$, $V_{DRAIN} = 40\text{V}$	–	200	350	μA
Drain						
Breakdown voltage ^{*2}	V_{BR}	–	475	–	–	V
On resistance	R_{ON}	$I_{DRAIN} = 50\text{mA}$	–	–	210	Ω
Output capacitance ^{*1}	C_{DRAIN}	$V_{DRAIN} = 400\text{V}$	–	1.0	5.0	pF
MOSFET saturation current ^{*1}	I_Q	–	100	150	–	mA
Current Sense Comparator						
Threshold current ^{*2}	I_{TH}	–	49	–	63	mA
Leading edge blanking delay ^{*1*2}	T_{BLANK}	–	200	300	400	nS
Minimum on time	T_{ON}	–	–	–	650	nS
Off Time Generator						
Off time duration	T_{OFF}	–	8	10.5	13	μS

Note:

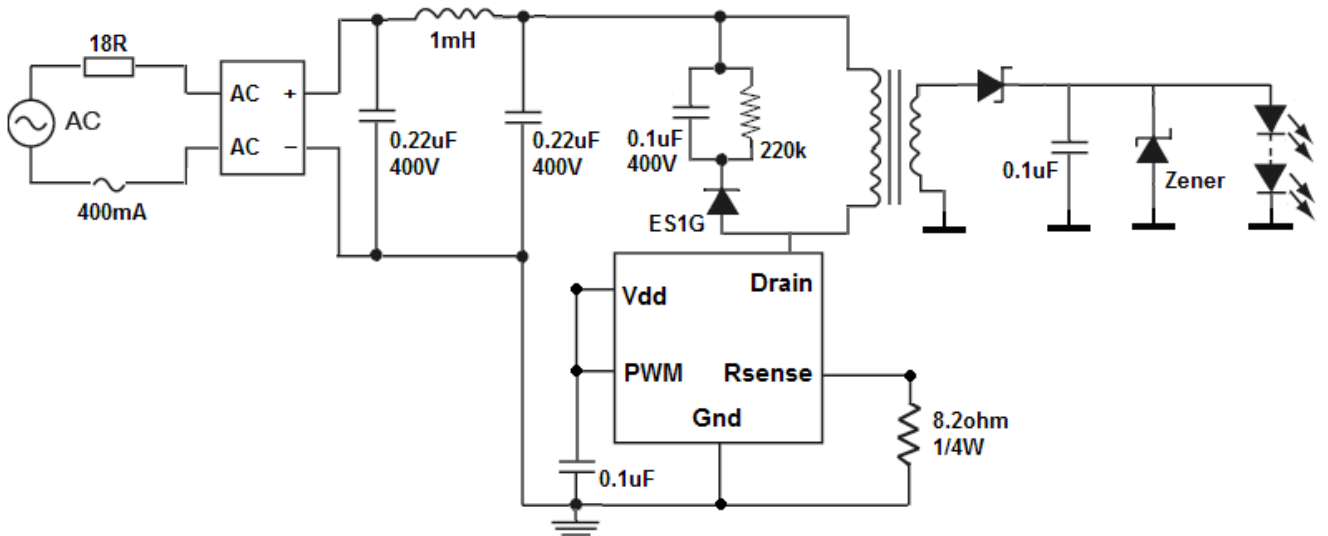
1. Guaranteed by design
2. Operating under ambient temperature range $-40^\circ\text{C} < T_A < 85^\circ\text{C}$

Typical Application Circuits

Universal 85~264VAC LED Lamps Driver (Non-Isolation)

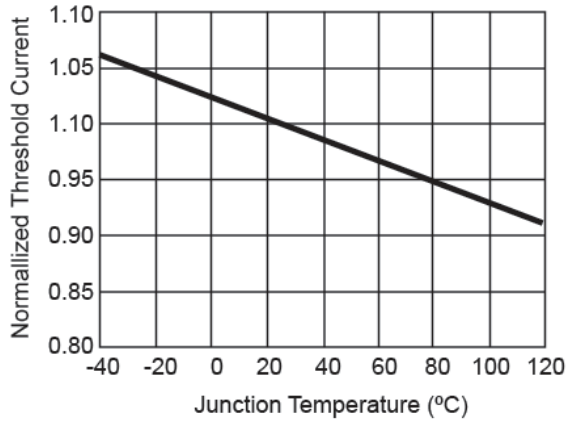


Universal 85~264VAC LED Lamps Driver (Isolation)

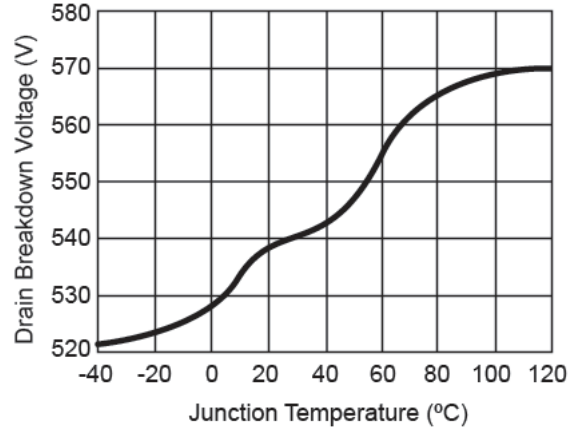


Electrical Characteristics Curve

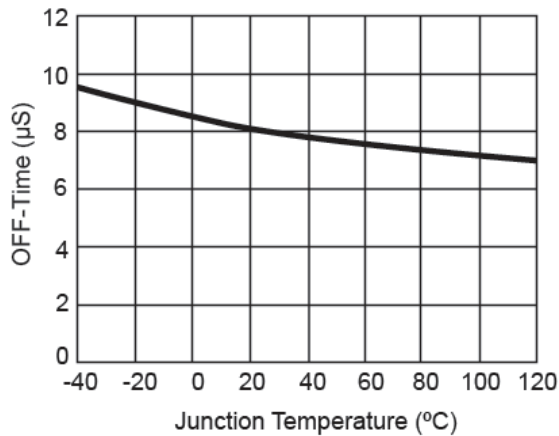
- Threshold Current vs. Junction Temperature



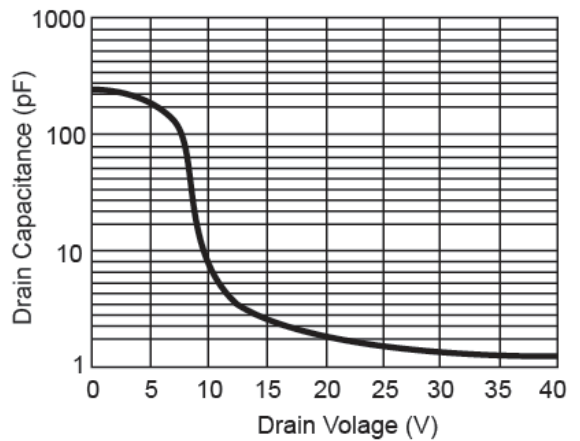
- Drain Breakdown Voltage vs. Output Current



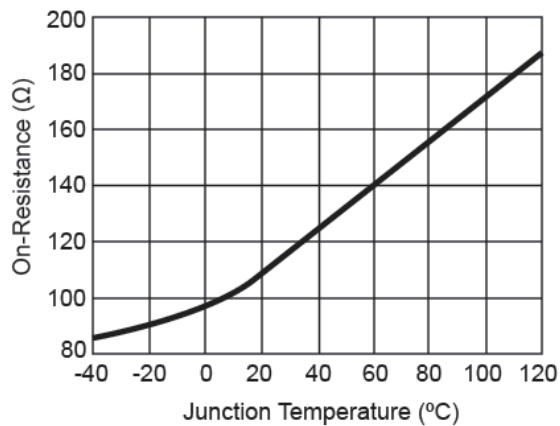
- OFF-Time vs. Junction Temperature



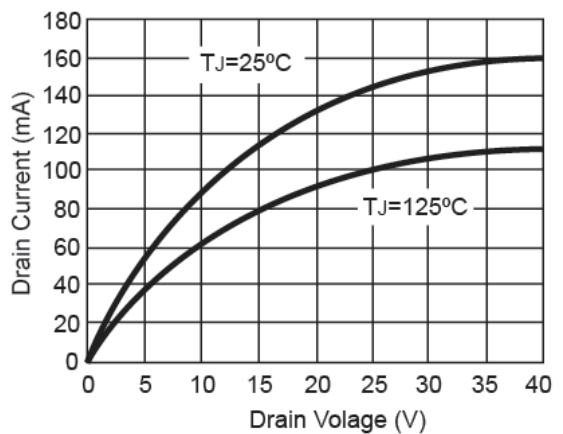
- Drain Capacitance vs. Drain Voltage



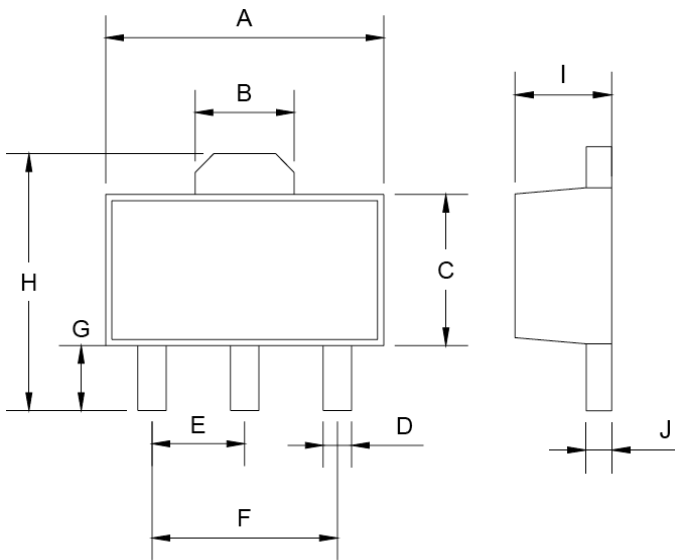
- On-Resistance vs. Junction Temperature



- Drain Current vs. Drain Voltage



Package Outline



SOT-89 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.40	4.60	0.173	0.181
B	1.50	1.7	0.059	0.070
C	2.30	2.60	0.090	0.102
D	0.40	0.52	0.016	0.020
E	1.50	1.50	0.059	0.059
F	3.00	3.00	0.118	0.118
G	0.89	1.20	0.035	0.047
H	4.05	4.25	0.159	0.167
I	1.4	1.6	0.055	0.068
J	0.35	0.44	0.014	0.017

LD Tech Corporation

Tel: +886-3-567-8806
 Fax: +886-3-567-8706
 E-mail: sales@ldtech.com.tw
 Website: www.ldtech.com.tw