

## CotoMOS® C238S-A/C338S-A

When automotive grade performance and a small package size is required, the AEC-Q101 Certified C238S-A or C338S-A is your best choice. Configured in an industry standard SOP package, both the 4 pin, 1-Form A C238S-A and the 8 pin, 2 Form A C338S-A feature 600V switching for Automotive Battery Management and Energy Storage applications. The on-resistance of 40Ω-60Ω max. and output capacitance of 47 pF nominal allow for fast, high voltage switching in a small package. In addition, the C338S-A offers two fully-independent Form A channels for further space savings that can be configured in series mode for higher current switching requirements.

### C238S-A/C338S-A Features

- ▶ Contact Form: C238S-A: 1A / C338S-A: 2A
- ▶ Load Voltage: 600V Maximum
- ▶ Operation LED Current: 3.0mA Maximum
- ▶ Load Current: 70mA Maximum
- ▶ Low On-Resistance: 60Ω Maximum
- ▶ Output Capacitance: 47pF Typical
- ▶ AEC-Q101 Certified

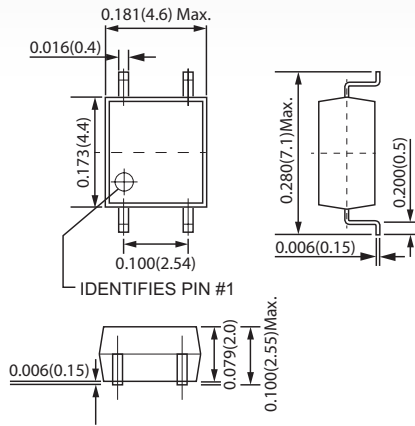
### APPLICATIONS

- ▶ Automobile
- ▶ Energy Storage System
- ▶ Data Storage

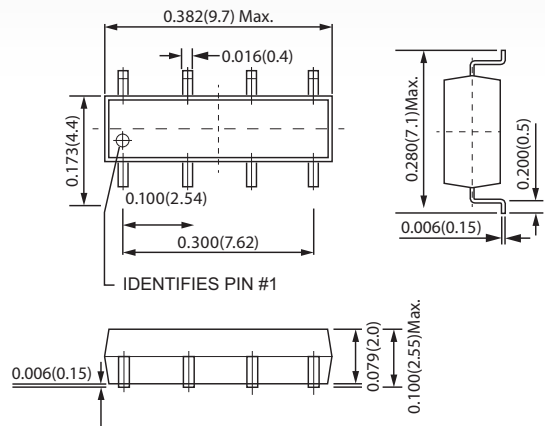
## DIMENSIONS

*in Inches (Millimeters)*

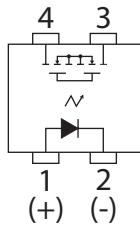
C238S-A



C338S-A



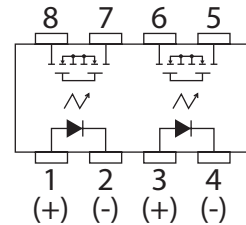
### TERMINAL IDENTIFICATION



1: Anode (LED)  
2: Cathode (LED)

3,4: Drain (MOSFET)

### TERMINAL IDENTIFICATION



1,3: Anode (LED)  
2,4: Cathode (LED)

5,6,7,8: Drain (MOSFET)

## C238S-A/C338S-A MAXIMUM RATINGS (Ambient Temperature: 25°C)

Parameters	Symbol	Units	Value	
<b>INPUT SPECIFICATIONS</b>			<b>C238S-A</b>	<b>C338S-A</b>
Continuous LED Current	I <sub>F</sub>	mA	50	50
Peak LED Current (f=100Hz, duty=1%)	I <sub>FP</sub>	mA	500	500
LED Reverse Voltage	V <sub>R</sub>	V	5	5
Input Power Dissipation	P <sub>in</sub>	mW	75	75
<b>OUTPUT SPECIFICATIONS</b>				
Load Voltage	V <sub>L</sub>	V (AC peak or DC)	600	600
Load Current	I <sub>L</sub>	mA	70	70 (1Ch)/60 (2Ch)
Peak Load Current (1 ms, 1 shot)	I <sub>Peak</sub>	mA	200	200
Output Power Dissipation	P <sub>Out</sub>	mW	300	300 (1Ch)/450 (2Ch)
<b>RELAY SPECIFICATIONS</b>				
Total Power Dissipation	P <sub>T</sub>	mW	350	350 (1Ch)/500 (2Ch)
I/O Breakdown Voltage	V <sub>I/O</sub>	V <sub>rms</sub> Min.	1500	1500
Operating Temperature*	T <sub>Opr</sub>	°C	-40 ~ +105	-40 ~ +105
Storage Temperature*	T <sub>Stg</sub>	°C	-40 ~ +125	-40 ~ +125

\*The temperature is based on AEC-Q101 certification.

## C238S-A/C338S-A ELECTRICAL SPECIFICATIONS (Ambient Temperature: 25°C)

Parameters	Symbol	Test Conditions	Units	Min	Typ	Max
<b>INPUT</b>						
LED Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =10mA	V	0.9	1.17	1.3
Operation LED Current	I <sub>F On</sub>		mA		1	5
Recovery LED Voltage	V <sub>F Off</sub>		V	0.5	1.0	
<b>OUTPUT</b>						
On-Resistance Drain to Drain	R <sub>On</sub>	I <sub>F</sub> =5mA, I <sub>L</sub> =Rated Current Time to flow is within 1 sec.	Ω		40	60
Off-State Leakage Current	I <sub>Leak</sub>	V <sub>L</sub> =600V	μA			1.0
Output Capacitance	C <sub>Out</sub>	V <sub>L</sub> =0V, f=1MHz	pF		47	
<b>TRANSMISSION</b>						
Turn-On Time	T <sub>On</sub>	I <sub>F</sub> =5mA, I <sub>L</sub> =Rated Current	ms		0.2	0.5
Turn-Off Time	T <sub>Off</sub>		ms		0.08	0.2
<b>COUPLED</b>						
I/O Insulation Resistance	R <sub>I/O</sub>		Ω	10 <sup>9</sup>		
I/O Capacitance	C <sub>I/O</sub>	f=1MHz	pF		1.3	

### Environmental Ratings:

Operating Temp: -40°C to +105°C; Storage Temp: -40°C to +125°C.

All electrical parameters measured at 25° C unless otherwise specified.

# C238S-A/C338S-A SERIES GRAPHS

