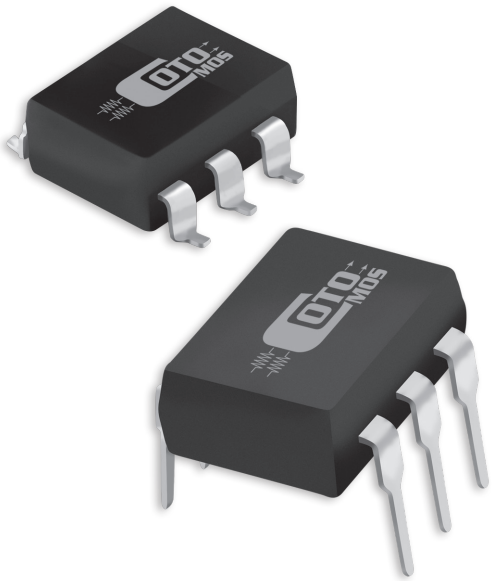


CotoMOS® CT139/CS139

The CT139 and CS139 combine Coto quality and economy in an industry standard 6-pin DIP package. The CT 139 and CS139 offer industry-leading switching capability in through-hole and surface-mount packages. Both relays can be configured to switch 50mA AC/DC in A-Configuration, 70mA DC in B-Configuration and 90mA in C-Configuration. See our Application Note entitled "How to Increase Your Current Capacity of 6-pin CotoMOS® Solid State MOSFET Relays by up to 100%" for additional details. Relays are ideally suited for Industrial, Battery Management and Test & Measurement Applications where high voltage switching is required.

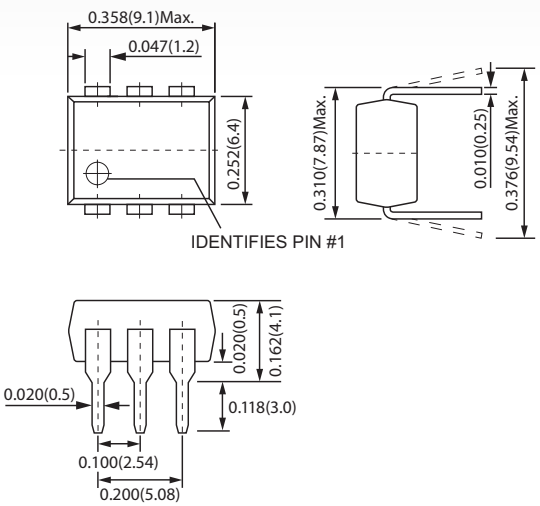
CT139/CS139 Features

- Contact Form: 1A
- Load Voltage: 1000V Maximum
- Operation LED Current: 5.0mA Maximum
- Load Current: 50mA Maximum
- On-Resistance: 75Ω Typical
- Low Off-State Leakage Current: 10µA Maximum
- I/O Breakdown Voltage: 3750Vrms Minimum
- Suffix - H for I/O Breakdown Voltage: 5000Vrms Minimum

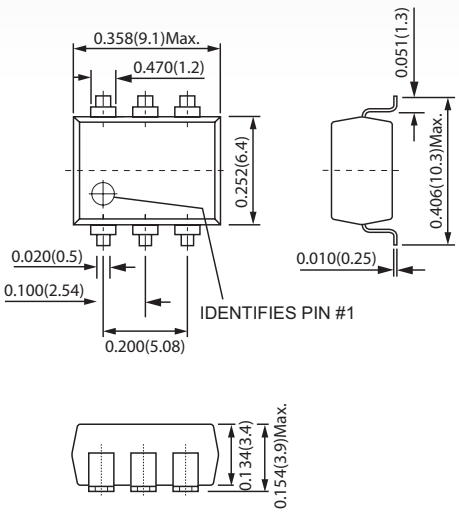
DIMENSIONS

in Inches (Millimeters)

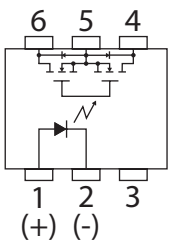
CT139



CS139



TERMINAL IDENTIFICATION



1: Anode (LED) 2: Cathode (LED) 3: NC	4,6: Drain (MOS FET) 5: Source (MOS FET)

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tel: (401) 943.2686 | fax: (401) 942.0920

ПРОМЭЛЕКТРОНИКА / sales@prom-elec.com

CT139/CS139 MAXIMUM RATINGS (Ambient Temperature: 25°C)

Parameters	Symbol	Units	Value
INPUT SPECIFICATIONS			
Continuous LED Current	I_F	mA	50
Peak LED Current	I_{FP}	mA	500
LED Reverse Voltage	V_R	V	5
Input Power Dissipation	P_{in}	mW	75
OUTPUT SPECIFICATIONS			
Load Voltage	V_L	V (AC peak or DC)	1000
Load Current	I_L	mA	50 / 70 / 90
Peak Load Current	I_{Peak}	A	0.15
Output Power Dissipation	P_{Out}	mW	360
RELAY SPECIFICATIONS			
Total Power Dissipation	P_T	mW	410
I/O Breakdown Voltage	$V_{I/O}$	Vrms	3750
Operating Temperature	T_{Opr}	°C	-40 ~ +85
Storage Temperature	T_{Stg}	°C	-40 ~ +100

CT139/CS139 ELECTRICAL SPECIFICATIONS (Ambient Temperature: 25°C)

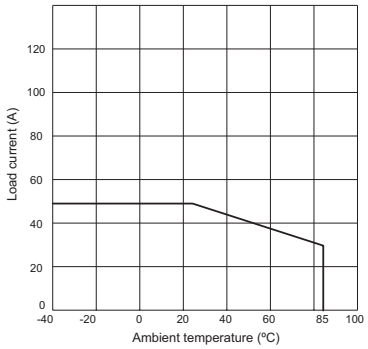
Parameters	Symbol	Test Conditions	Units	Min	Typ	Max
INPUT						
LED Forward Voltage	V_F	I_F=10mA	V	1.0	1.17	1.5
Operation LED Current	$I_{F\ On}$		mA		0.9	5.0
Recovery LED Voltage	$V_{F\ Off}$		V	0.5	1.0	
OUTPUT						
On-Resistance Drain to Drain	R_{On}	I_F=10mA, I_L=Rating Time to flow is within 1 sec.	Ω		75	150
Off-State Leakage Current	I_{Leak}	I_F=0mA, V_L=1000V	µA			10
Output Capacitance	C_{Out}	V_L=0V, f=1MHz	pF		100	
TRANSMISSION						
Turn-On Time	T_{On}	I_F=10mA, I_L=Rating	ms		0.3	1.0
Turn-Off Time	T_{Off}		ms		0.04	0.5
COUPLED						
I/O Insulation Resistance	$R_{I/O}$		Ω	10^{10}		
I/O Capacitance	$C_{I/O}$	f=1MHz	pF		1.3	

Environmental Ratings:

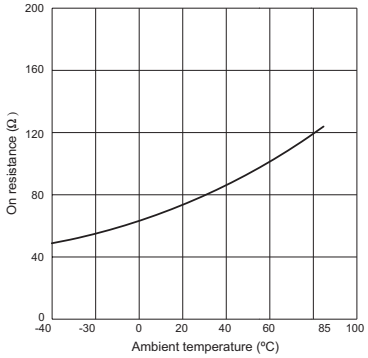
Operating Temp: -40°C to +85°C; Storage Temp: –40 to +100°C.

CT139/CS139 GRAPHS

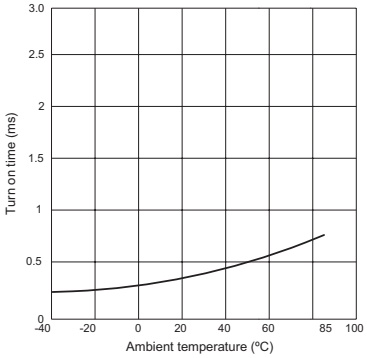
Load current Vs.
Ambient temperature



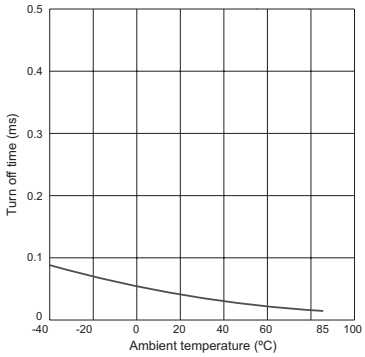
On resistance Vs.
Ambient temperature



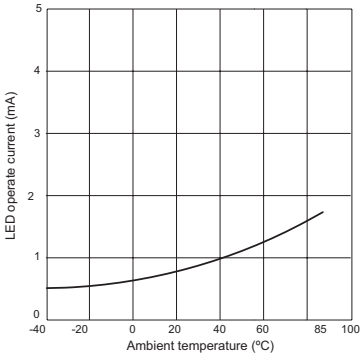
Turn on time Vs.
Ambient temperature



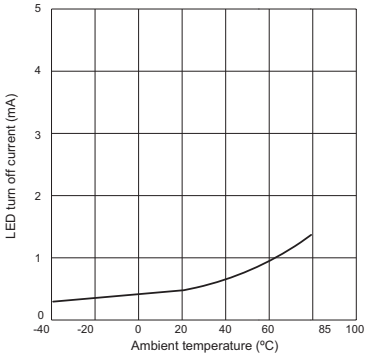
Turn off time Vs.
Ambient temperature



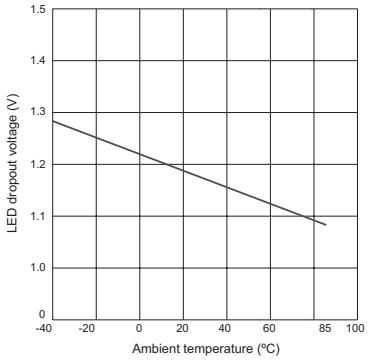
LED operate current Vs.
Ambient temperature



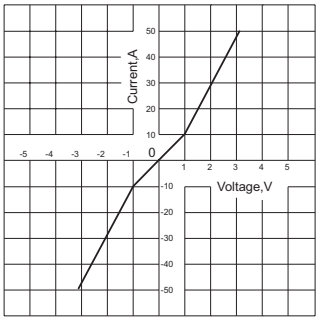
LED Turn off current Vs.
Ambient temperature



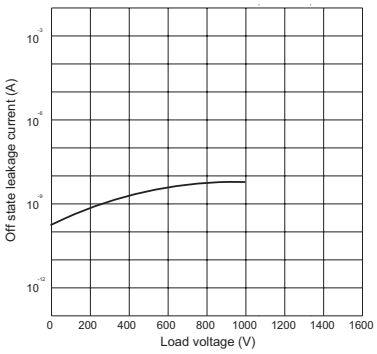
LED forward voltage Vs.
Ambient temperature



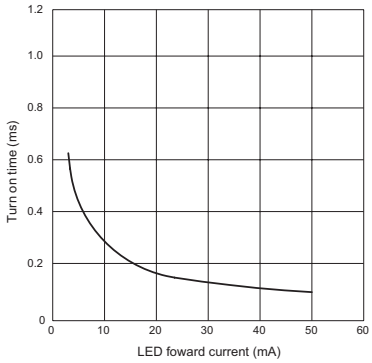
Voltage Vs. current characteristics
of output at MOS portion



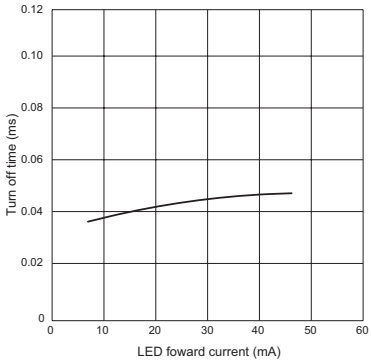
Off state leakage current



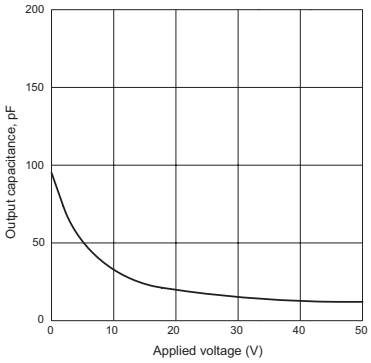
LED foward current Vs.
turn on time characteristics



LED foward current Vs.
turn off time characteristics



Applied voltage Vs.
output capacitance characteristics



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