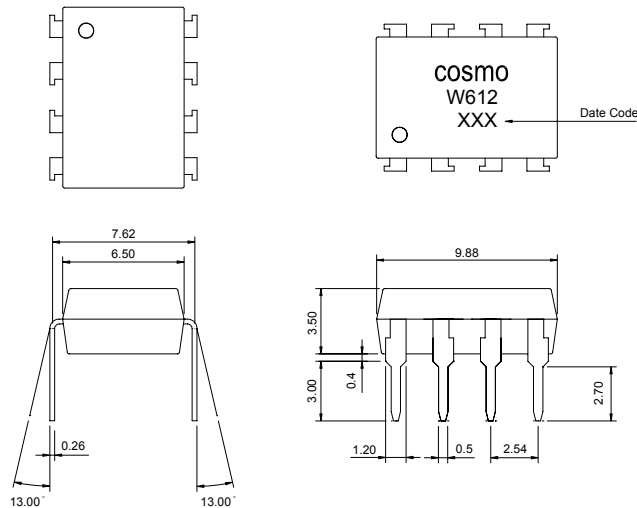


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● OUTSIDE DIMENSION :

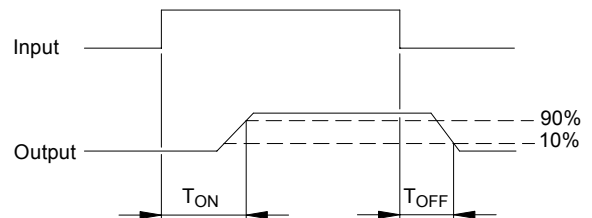
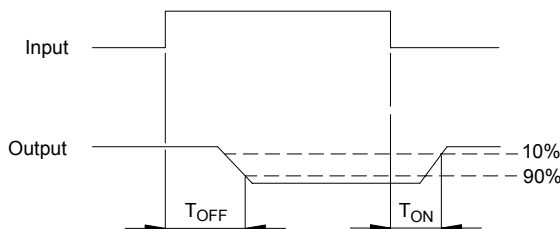


Unit : mm

Tolerance : $\pm 0.2\text{mm}$

● Operate / Reverse time (N.C)

● Turn on / Turn off time (N.O)



● Schematic and Wiring Diagrams

Schematic	Output Configuration	Load	Connection	Wiring Diagrams
	1a1b 1 FORM A/B 1 FORM C 	AC/DC	-	(1) Two independent 1 Form A & 1 Form B use (2) 1 Form A 1 Form B use

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● Absolute Maximum Ratings

(Ta=25°C)

Emitter (Input)	Detector (Output)
Reverse Voltage 5.0V	Output Breakdown Voltage ± 60V
Continuous Forward Current 50mA	Continuous Load Current ± 200mA
Peak Forward Current 1A	Power Dissipation 500mW
Power Dissipation 100mW	
Derate Linearly from 25°C 1.3mW/°C	

General Characteristics

Isolation Test Voltage 5000VACrms	Storage Temperature Range -40°C to +125°C
Isolation Resistance	Operating Temperature Range ... -40°C to +85°C
Viso=500V, Ta=25°C $\geq 10^{10}\Omega$	Junction Temperature 100°C
Total Power Dissipation 550mW	Soldering Temperature ,
Derate Linearly from 25°C 2.5mW/°C	2mm from case , 10 sec 260°C

● Electro-optical Characteristics

(Ta=25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Emitter (Input)						
Forward Voltage	V_F	$I_F=10\text{mA}$		1.2	1.5	V
Operation Input Current	I_{FON} (N.O) I_{FOFF} (N.C)	$V_L=\pm 20\text{V}$, $I_L=100\text{mA}$ (N.O) $V_L=\pm 20\text{V}$, $I_L\leq 5\mu\text{A}$ (N.C) $t=10\text{ms}$			5	mA
Recovery Input Current	I_{FOFF} (N.O) I_{FON} (N.C)	$V_L=\pm 20\text{V}$, $I_L\leq 5\mu\text{A}$ (N.C) $V_L=\pm 20\text{V}$, $I_L=100\text{mA}$ (N.O) $t=10\text{ms}$	0.2			mA

Detector (Output) normally open

Output Breakdown Voltage	V_B	$I_B=50\mu\text{A}$	60			V
Output Off-State Leakage	I_{TOFF}	$V_T=100\text{V}$, $I_F=0\text{mA}$		0.2	1	μA
I/O Capacitance	C_{ISO}	$I_F=0$, $f=1\text{MHz}$		6		pF
ON Resistance	R_{ON}	$I_L=100\text{mA}$, $I_F=10\text{mA}$		0.83	2.5	Ω
Turn-On Time	T_{ON}	$I_F=10\text{mA}$, $V_L=\pm 20\text{V}$		0.2	1.5	ms
Turn-Off Time	T_{OFF}	$t=10\text{ms}$, $I_L=\pm 100\text{mA}$		0.3	1.5	ms

Detector (Output) normally close

Output Breakdown Voltage	V_B	$I_B=50\mu\text{A}$, $I_F=10\text{mA}$	60			V
Output Off-State Leakage	I_{TOFF}	$V_T=100\text{V}$, $I_F=10\text{mA}$		0.2	2	μA
I/O Capacitance	C_{ISO}	$I_F=0$, $f=1\text{MHz}$		6		pF
ON Resistance	R_{ON}	$I_L=100\text{mA}$, $I_F=0\text{mA}$		2.5	5	Ω
Operate (OFF) Time	T_{OFF}	$I_F=10\text{mA}$, $V_L=\pm 20\text{V}$		0.6	1.5	ms
Reverse (ON) Time	T_{ON}	$t=10\text{ms}$, $I_L=\pm 100\text{mA}$		0.3	1.5	ms

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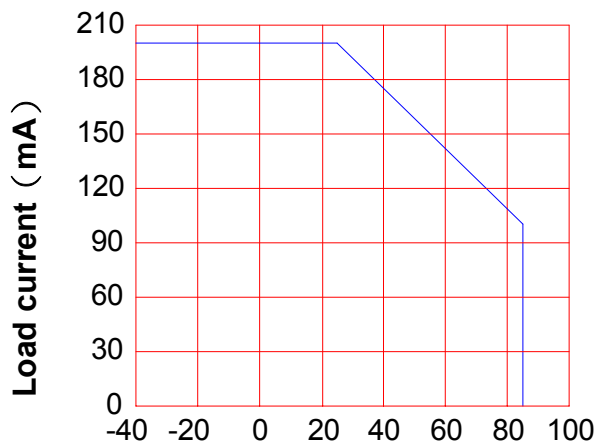
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● Data Curve (Normally Open Characteristics)

Load current vs. ambient temperature

Allowable ambient Temperature :

-40°C to +85°C



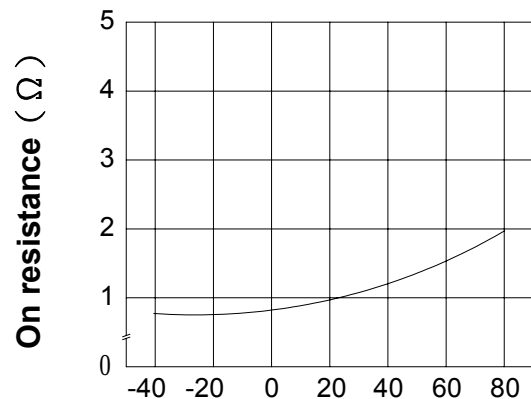
Ambient temperature Ta (°C)

On resistance vs. ambient temperature

across terminals 5 and 6 pin

LED current : 5mA

Continuous load current : 200mA (DC)



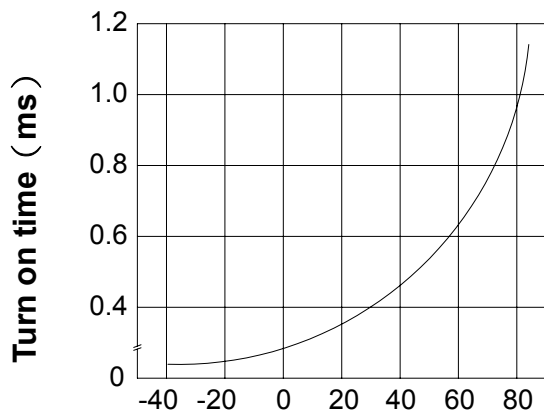
Ambient temperature Ta (°C)

Turn on time vs. ambient temperature

Load voltage 400V (DC)

LED current : 5mA

Continuous load current : 200mA (DC)



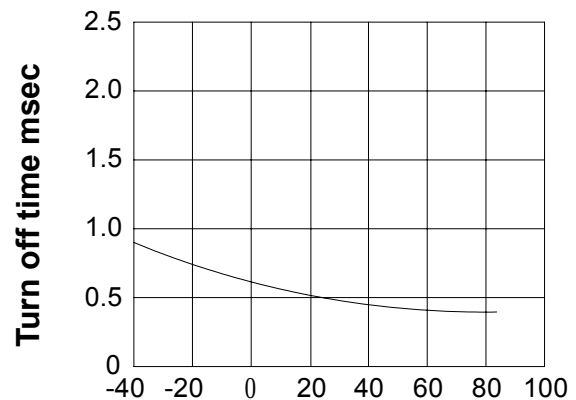
Ambient temperature Ta (°C)

Turn off time vs. ambient temperature

Load voltage 400V (DC)

LED current : 5mA

Continuous load current : 200mA (DC)



Ambient temperature Ta (°C)

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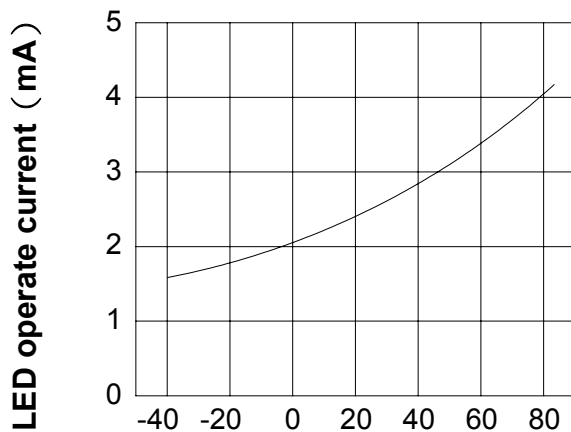
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LED operate current vs.
ambient temperature

Load Voltage : 60V (DC)

Continuous load current : 200mA (DC)

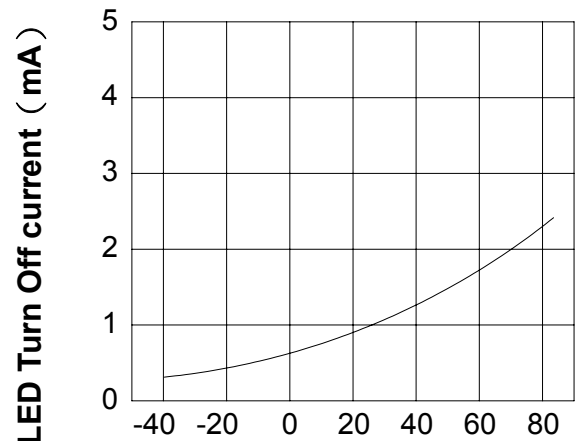


Ambient temperature Ta (°C)

LED Turn Off current vs.
ambient temperature

Load Voltage : 60V (DC)

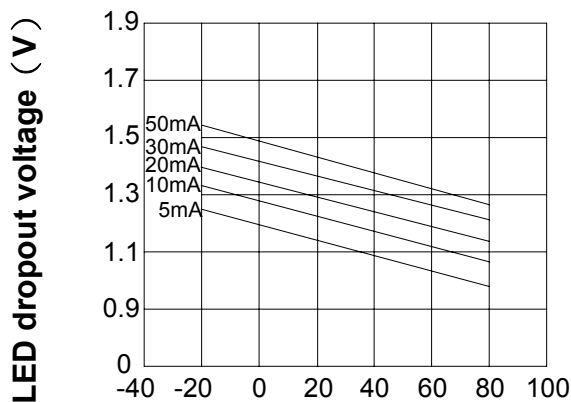
Continuous load current : 200mA (DC)



Ambient temperature Ta (°C)

LED dropout voltage vs.
ambient temperature

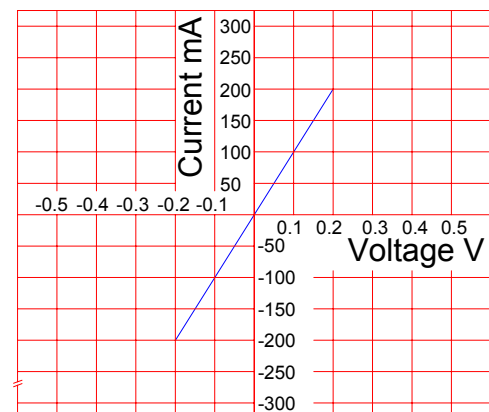
LED current : 5 to 50mA



Ambient temperature Ta (°C)

Voltage vs. current characteristics
of output at MOSFET portion
Measured portion : across terminals
5 and 6 pin
Ambient temperature : 25°C

Voltage VS. Current
Characteristics



Ambient temperature : 25°C

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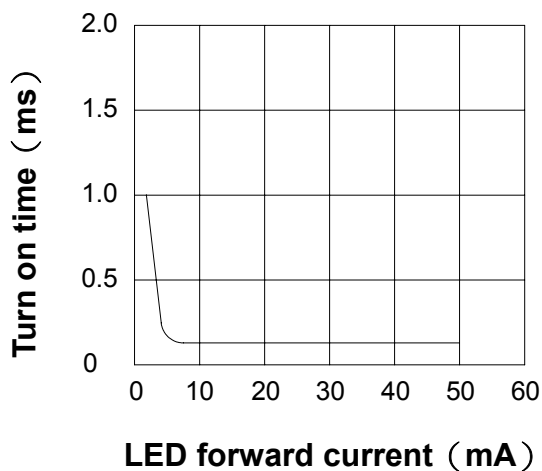
LED forward current vs. turn on time

Across terminals 5 and 6 pin

Load voltage : 60V (DC)

Continuous load current : 200mA (DC)

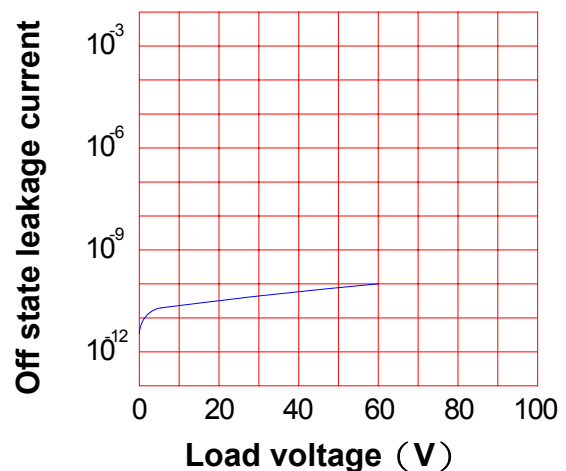
Ambient temperature : 25°C



Off state leakage current

Across terminals 5 and 6 pin

Ambient temperature : 25°C



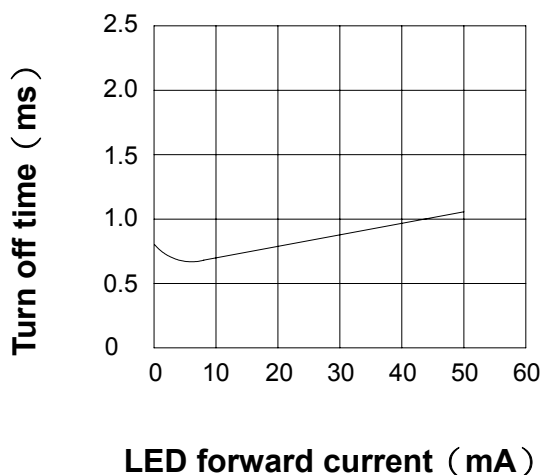
LED forward current vs. turn off time

Across terminals 5 and 6 pin

Load voltage : 60V (DC)

Continuous load current : 200mA (DC)

Ambient temperature : 25°C

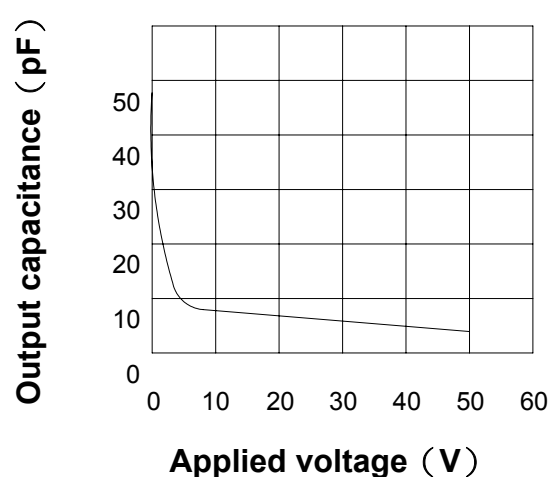


Applied voltage vs. output capacitance

Across terminals 5 and 6 pin

Frequency : 1MHz

Ambient temperature : 25°C



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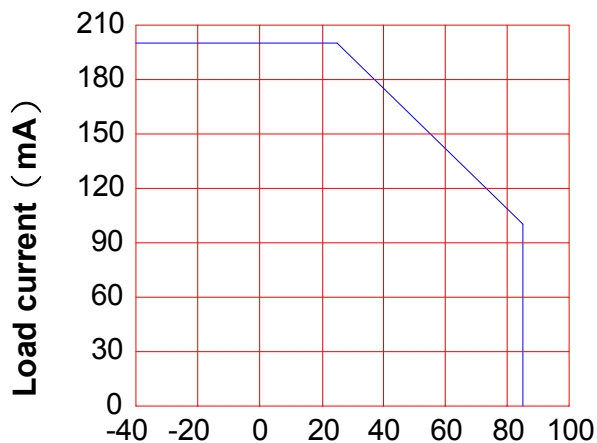
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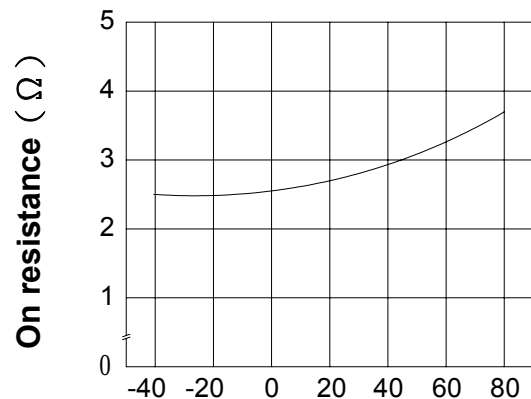
● Data Curve (Normally Close Characteristics)

Load current vs. ambient temperature
Allowable ambient Temperature :
-40°C to +85°C



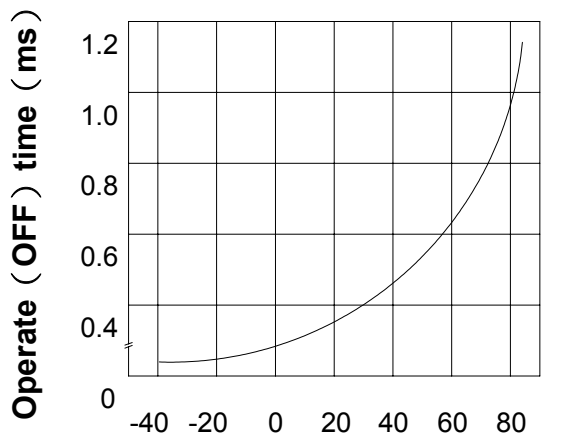
Ambient temperature Ta (°C)

On resistance vs. ambient temperature
across terminals 7 and 8 pin
LED current : 0mA
Continuous load current : 200mA (DC)



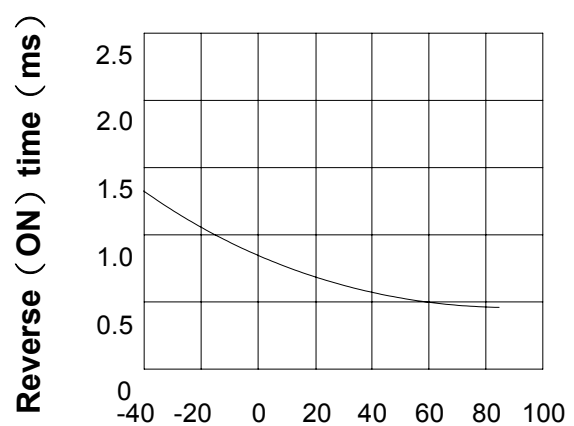
Ambient temperature Ta (°C)

Operate (OFF) time vs.
ambient temperature
Load voltage 60V (DC)
LED current : 5mA
Continuous load current : 200mA (DC)



Ambient temperature Ta (°C)

Reverse (ON) time vs.
ambient temperature
Load voltage 60V (DC)
LED current : 5mA
Continuous load current : 200mA (DC)



Ambient temperature Ta (°C)

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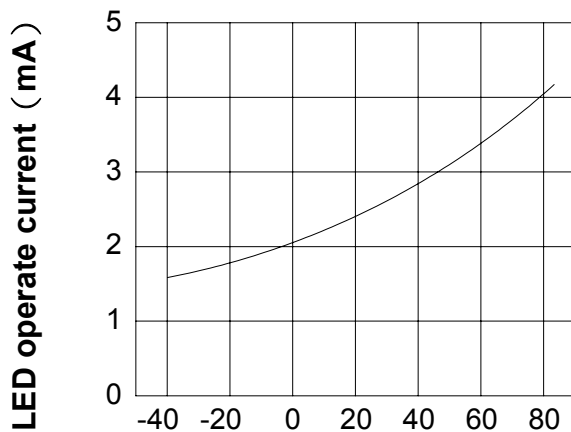
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LED Operate (OFF) current vs.
ambient temperature

Load Voltage : 60V (DC)

Continuous load current : 200mA (DC)

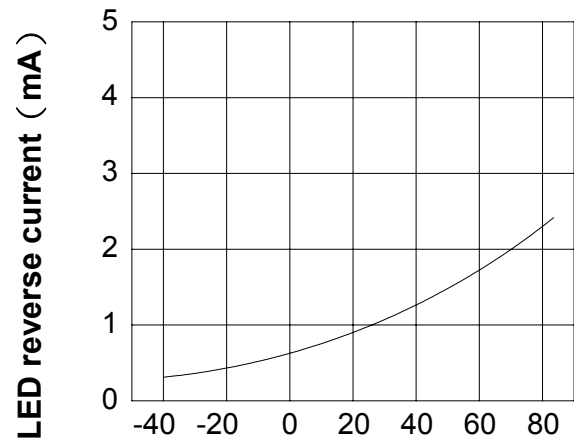


Ambient temperature Ta (°C)

LED Reverse (ON) current vs.
ambient temperature

Load Voltage : 60V (DC)

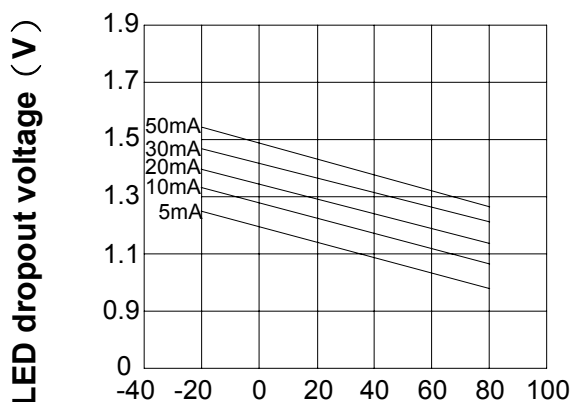
Continuous load current : 200mA (DC)



Ambient temperature Ta (°C)

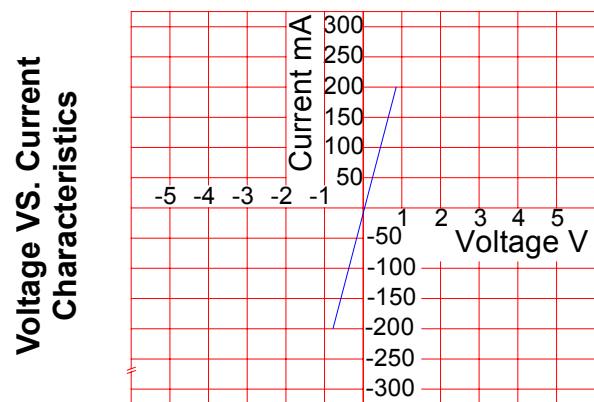
LED dropout voltage vs.
ambient temperature

LED current : 5 to 50mA



Ambient temperature Ta (°C)

Voltage vs. current characteristics
of output at MOSFET portion
Measured portion : across terminals
7 and 8 pin
Ambient temperature : 25°C



Ambient temperature : 25°C

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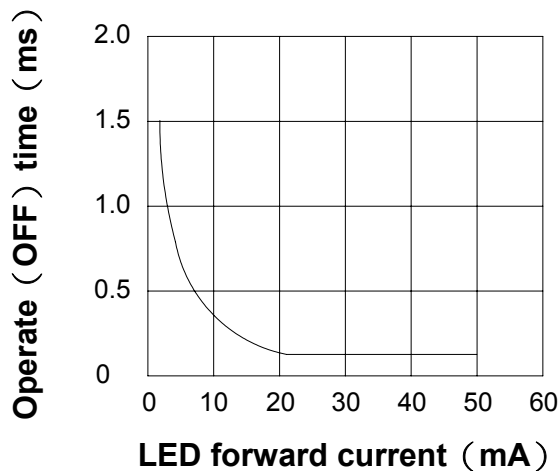
LED forward current vs. operate (OFF) time

Across terminals 7 and 8 pin

Load voltage : 60V (DC)

Continuous load current : 200mA (DC)

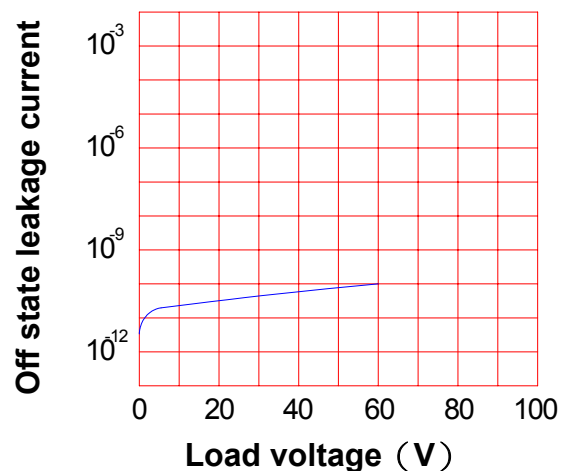
Ambient temperature : 25°C



Off state leakage current

Across terminals 7 and 8 pin

Ambient temperature : 25°C



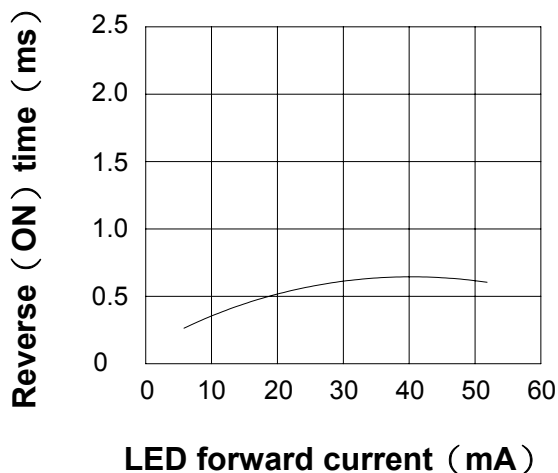
LED forward current vs. reverse (ON) time

Across terminals 7 and 8 pin

Load voltage : 60V (DC)

Continuous load current : 200mA (DC)

Ambient temperature : 25°C

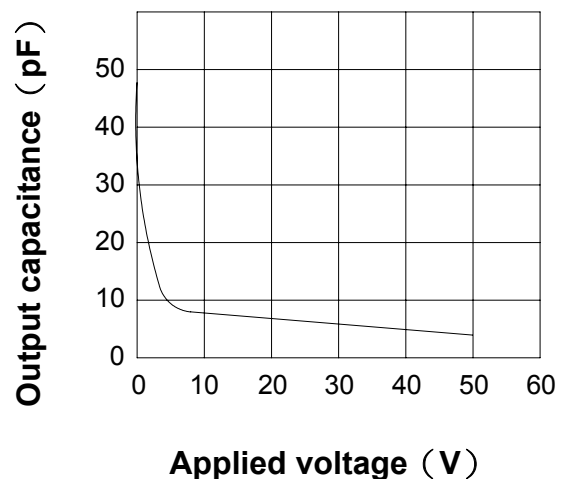


Applied voltage vs. output capacitance

Across terminals 7 and 8 pin

Frequency : 1MHz

Ambient temperature : 25°C



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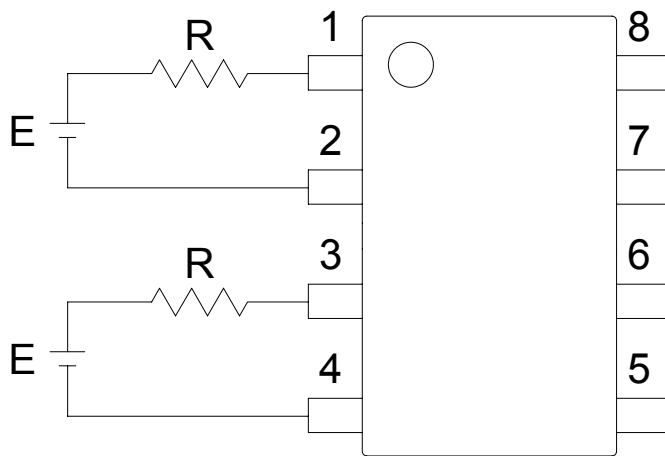
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● USING METHODS

Examples of resistance value to
control LED forward current (I_F)

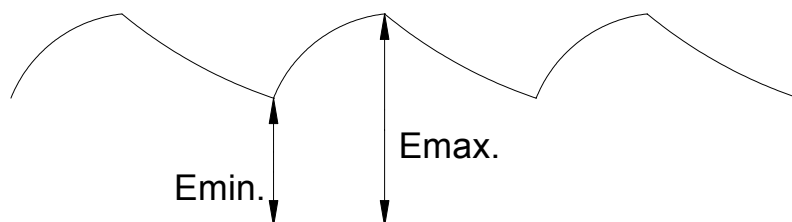
SSR-MOSFET OUTPUT

($I_F=5\text{mA}$)



E	R
3.3V	Approx. 330 Ω
5V	Approx. 640 Ω
12V	Approx. 1.9K Ω
15V	Approx. 2.5K Ω
24V	Approx. 4.1K Ω

- (1) LED forward current must be more than 5mA , at E min.
- (2) LED forward current must be less than 50mA , at E max.



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● USING METHODS

Regulate the spike voltage generated on the inductive load as follows :

