For DC Load Onry Low Output Capacitance Type Optical MOS Relay

OCM1 □ 4, 1 □ 5 series

- **Low output capacitance ▶ 7 pF**
- **Load current ▶ 100~20 mA**
- **Recommended input current ▶ 10 mA**
- **High speed response (TYP.) ▶ ton : 30 μs, toff : 60 μs**
- **Isolation loss ▶ 30dB or more (at 10MHz)**
- **Off-state lead current ▶ max, 1nA**

■ Absolute maximum ratings

(Ambient temperature Ta=25°C)

	Item	Symbol	Condition	Unit	OCM104 OCM105	OCM114 OCM115	OCM124 OCM125	OCM144 OCM145
Input characteristics	Continuous forward current	I		mA	50			
	Derating factor of continuous forward current	ΔI F		mA/°C	Refer to [Derating Factor of Continuous Forward current] of characteristics data			
	Peak forward current	I FM	Pulse 10ms Cycle 100μs	A	0.5			
	Reverse voltage	VR		V	5			
	Power dissipation	PDL		mW	75			
Output characteristics	Load voltage	VOFF		V	60	100	200	400
	Load current	ION		mA	100	70	50	20
	Derating factor of load current	ΔION		mA/°C	Refer to [Derating Factor of Load Current] of characteristics data			
	Surge load current	ISUG	Pulse width 1ms 1shot	A	0.1		0.07	0.025
	Power dissipation	PD		mW	300			
	Total power dissipation	Ptot		mW	325			
	Isolation voltage	VIO		V(rms)	1500			
					OCM104	OCM114	OCM124	OCM144
					4000			
					OCM105	OCM115	OCM125	OCM145
	Operating temperature	Topr		°C	−40~+85			
	Storage temperature	Tstg		°C	−40~+100			

APPLICATIONS

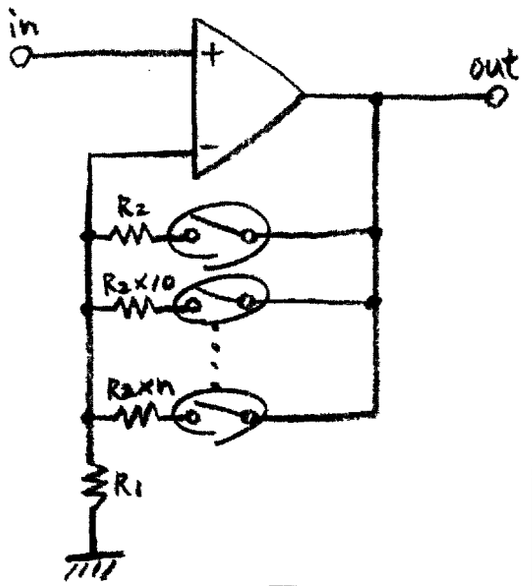
IC tester

Board tester

Industrial equipment

Example Circuit

● Gain control



Optical MOS Relay

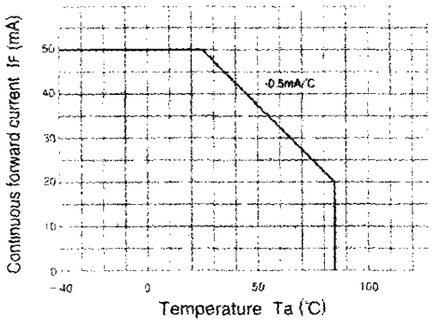
■ Electrical characteristics

(Ambient temperature Ta=25°C)

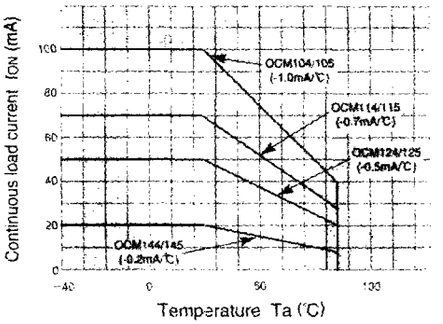
	Item	Symbol	Condition		Unit	Product name: OCM104 OCM105	OCM114 OCM115	OCM124 OCM125	OCM144 OCM145
Input characteristics	Forward voltage	VF	IF=10mA	MIN	V	1.0			
				MAX		1.3			
	Reverse current	IR	VR=5V	MAX	μA	10			
	Input current *1	IFA	ION=100mA	MAX	mA	5			
	Input current	IFR	VOFF=Rating ION=100 μA	MIN	mA	0.2			
Output characteristics	On-resistance recovery	RON	IF=10mA ION=100mA Time to flow current is within one second	MIN	Ω	10	20	50	150
				TYP		15	32.5	75	300
				MAX		20	45	100	450
	Off-state leakage current *2	IOFF	VOFF=Rating	MAX	nA	1.0			
	Output terminal capacitance	COUT	VOFF=50V f=1MHz	TYP	pF	7			
Coupling characteristics	Input-to-output capacitance	CIO	f=1MHz	TYP	pF	1.3			
	Turn on time	ton	IF=10mA ION= OCM104,105:10mA OCM114,115:10mA OCM124,12540mA OCM144,145: 1mA	TYP	μs	30			
				MAX		200			
	Turn off time	toff		TYP	μs	60			
				MAX		200			

*1 : Can correspond to special specification IFA<3.0mA
*2 : Can correspond to special specification IOFF<0.1nA

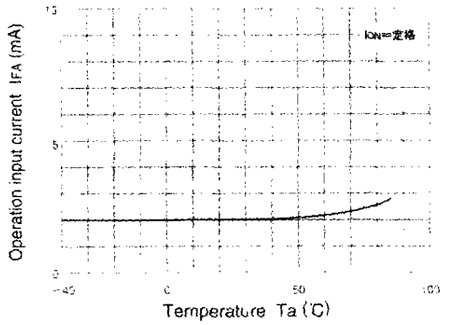
■ OCM1 □ 4, 1 □ 5 series Characteristics Curves



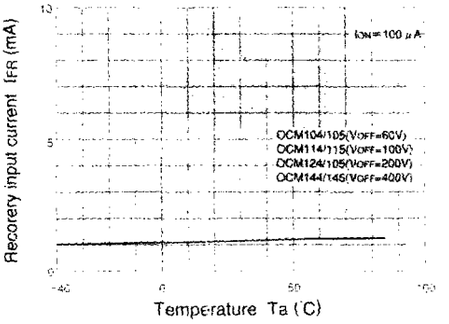
Derating factor of continuous forward current



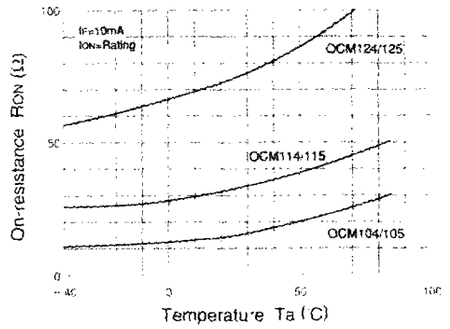
Derating factor of load current



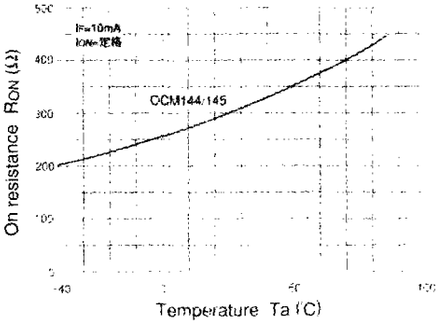
Operation input current vs. Ambient temperature



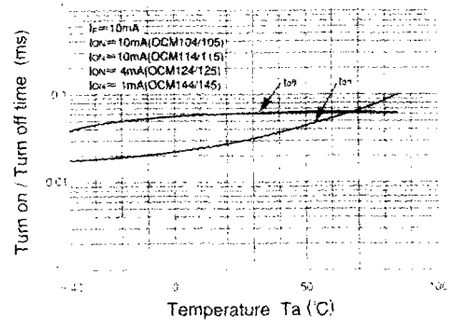
Recovery input current vs. Ambient temperature



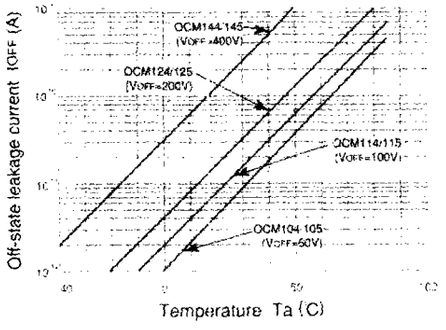
On-resistance vs. Ambient temperature-1



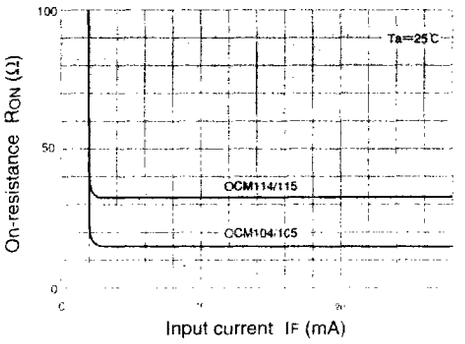
On-resistance vs. Ambient temperature-2



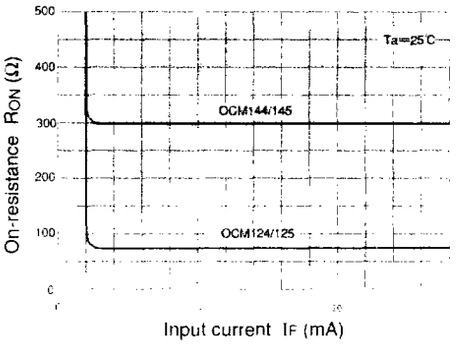
Turn on/Turn off time vs. Ambient temperature



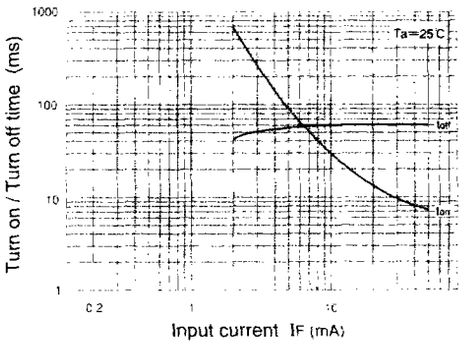
Off-state leakage current vs. Ambient temperature



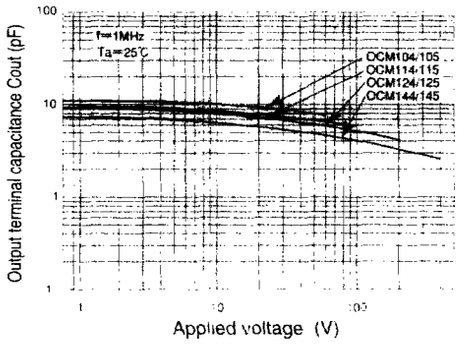
Continuous forward current vs. On-resistance-1



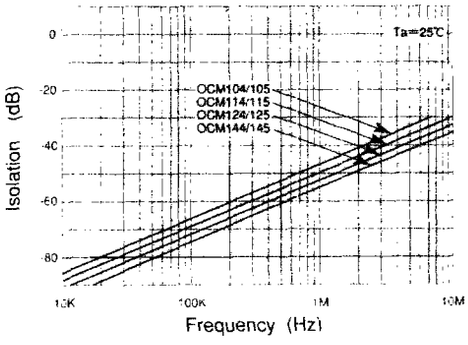
Continuous forward current vs. On-resistance-2



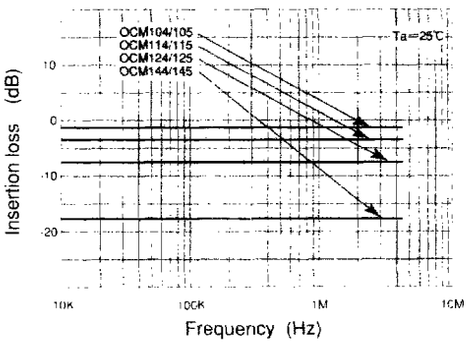
Continuous forward current vs. Turn on/Turn off time



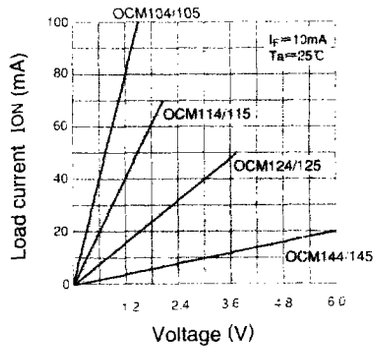
Output terminal capacitance vs. Applied voltage



Isolation



Insertion loss



Load current vs. Voltage