

For DC Load Only 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)

Product name				OCM104 OCM105	OCM114 OCM115	OCM124 OCM125	OCM144 OCM145
Item	Symbol	Condition	Unit				
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	V _R	V	5			
	Power dissipation	P _{DL}	mW	75			
Output characteristics	Load voltage	V _{OFF}	V	60	100	200	400
	Load current	I _{ON}	mA	100	70	50	20
	Derating factor of load current	ΔI_{ON}	mA/°C	Refer to [Derating Factor of Load Current] of characteristics data			
	Surge load current	I _{SUG}	Pulse width 1ms 1shot A	0.1		0.07	0.025
	Power dissipation	P _D	mW	300			
	Total power dissipation	P _{tot}	mW	325			
				500			
Isolation voltage	V _{IO}	V(rms)	OCM104	OCM114	OCM124	OCM144	
				4000			
			OCM105	OCM115	OCM125	OCM145	
Operating temperature	T _{opr}		°C				
Storage temperature	T _{stg}		°C				
			-40~+85				
			-40~+100				

APPLICATIONS



IC tester



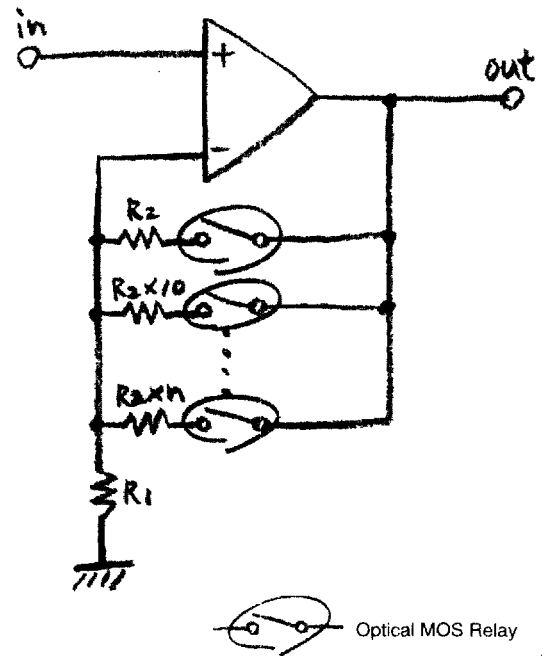
Board tester



Industrial equipment

Example Circuit

● Gain control



Electrical characteristics

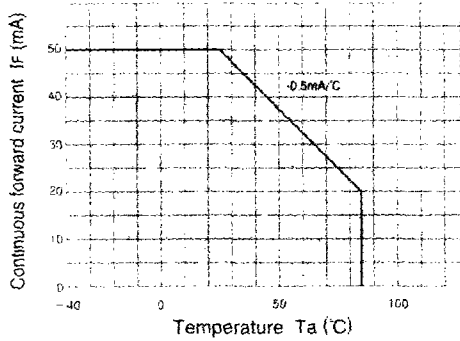
(Ambient temperature Ta=25°C)

Product name					OCM104 OCM105	OCM114 OCM115	OCM124 OCM125	OCM144 OCM145
Item	Symbol	Condition	Unit					
Input characteristics	Forward voltage	V _F	I _F =10mA	MIN			1.0	
				MAX			1.3	
	Reverse current	I _R	V _R =5V	MAX			10	
	Input current *1	I _{FA}	I _{ON} =100mA	MAX			5	
	Input current	I _{FR}	V _{OFF} =Rating I _{ON} =100 μA	MIN			0.2	
Output characteristics	On-resistance recovery	R _{ON}	I _F =10mA I _{ON} =100mA Time to flow current is within one second	MIN	10	20	50	150
				TYP	15	32.5	75	300
				MAX	20	45	100	450
	Off-state leakage current *2	I _{OFF}	V _{OFF} =Rating	MAX			1.0	
Output terminal capacitance	C _{OUT}	V _{OFF} =50V f=1MHz	TYP			7		
Coupling characteristics	Input-to-output capacitance	C _{IO}	f=1MHz	TYP			1.3	
	Turn on time	t _{on}	I _F =10mA I _{ON} =	TYP			30	
				MAX			200	
	Turn off time	t _{off}	OCM104,105: 10mA OCM114,115: 10mA OCM124,125: 40mA OCM144,145: 1mA	TYP			60	
MAX						200		

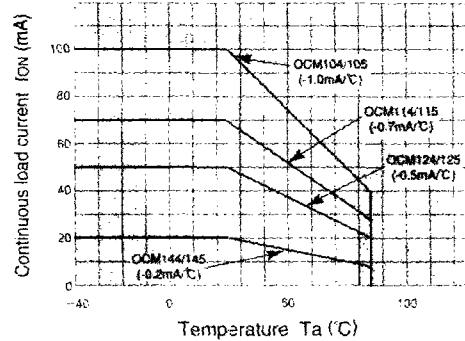
*1 : Can correspond to special specification: I_F < 3.0mA

*2 : Can correspond to special specification: I_{FR} < 0.1mA

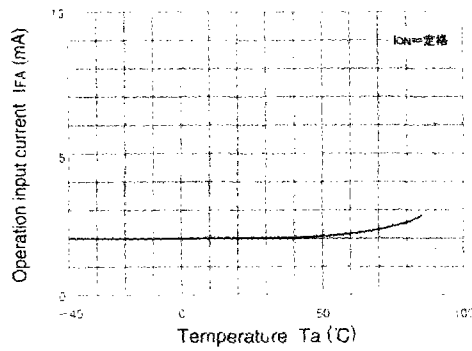
OCM1 4, 1 5 series Characteristics Curves



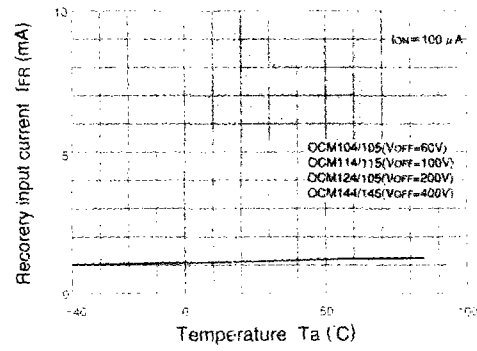
Derating factor of continuous forward current



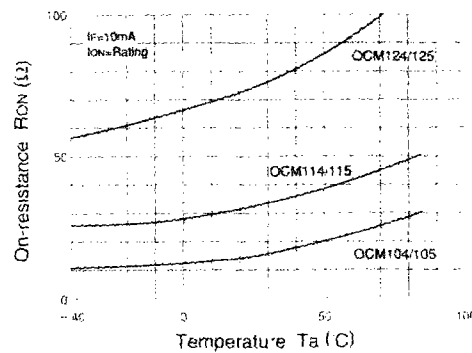
Derating factor of load current



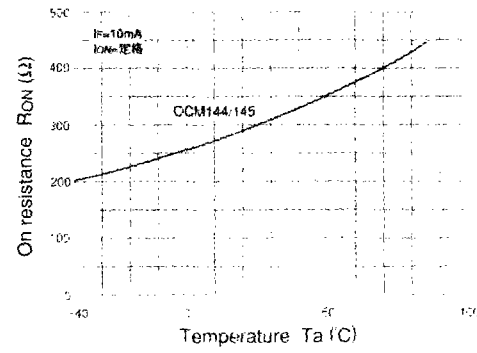
Operation input current vs. Ambient temperature



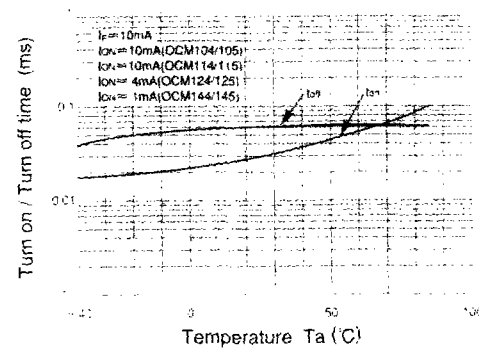
Recovery input current vs. Ambient temperature



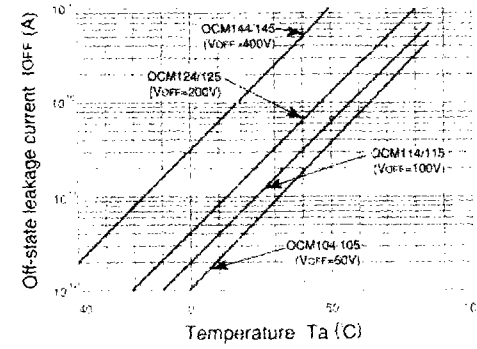
On-resistance vs. Ambient temperature-1



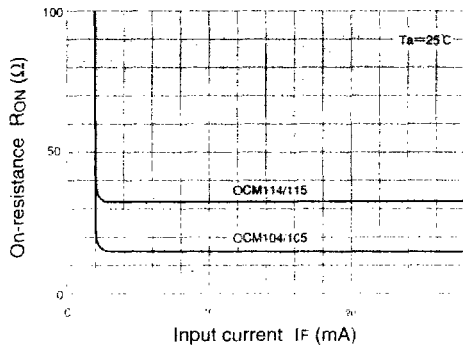
On-resistance vs. Ambient temperature-2



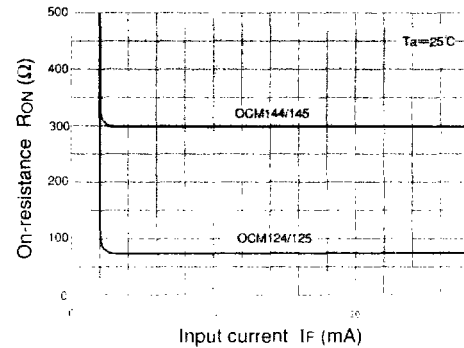
Turn on/Turn off time vs. Ambient temperature



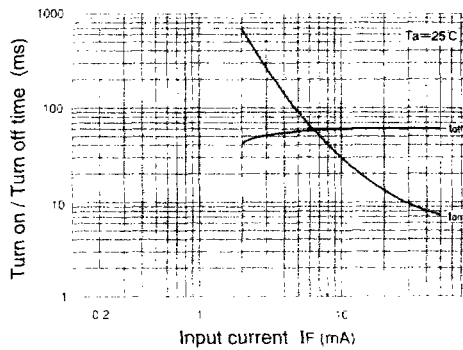
Off-state leakage current vs. Ambient temperature



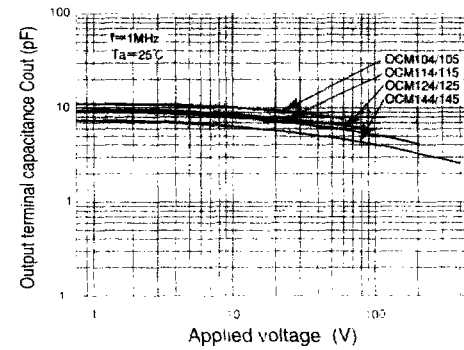
Continuous forward current vs. On-resistance-1



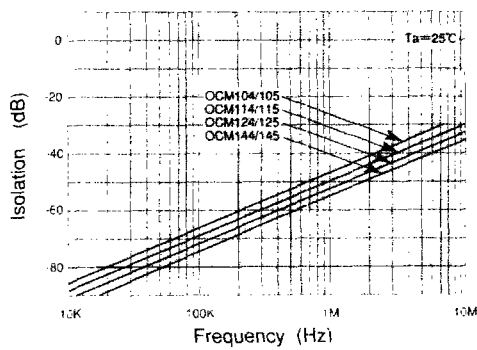
Continuous forward current vs. On-resistance-2



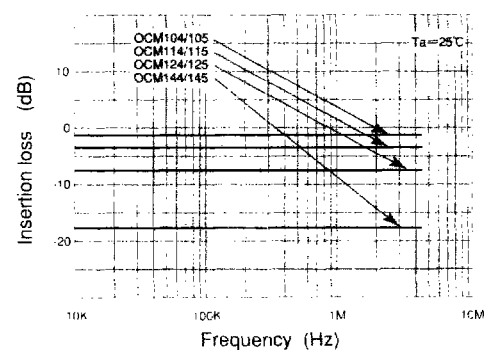
Continuous forward current vs. Turn on/Turn off time



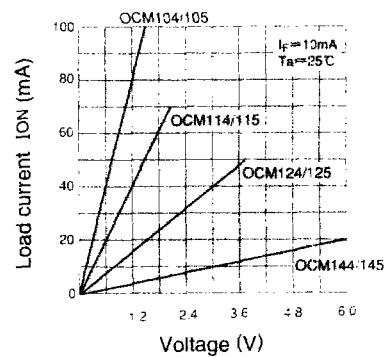
Output terminal capacitance vs. Applied voltage



Isolation



Insertion loss



Load current vs. Voltage