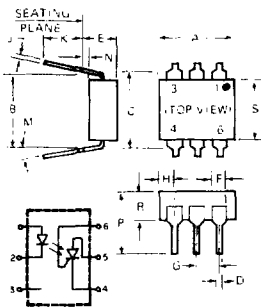


MCS2, MCS2400

Optoisolator
GaAs Infrared Emitting Diode and Light Activated SCR

The MCS2 and MCS2400 consist of a gallium arsenide, infrared emitting diode coupled with a light activated silicon controlled rectifier in a dual in-line package. These devices are also available in surface-mount packaging.



SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	8.38	8.89	.330	.350	
B	7.62 REF		.300 REF		
C	4.06	8.94	.160	.350	2
D		5.08	.016	.200	J
E	1.01	1.78	.040	.070	
F	2.25	3.30	.090	.130	
G		2.16		.085	4
H	2.03	3.05	.078	.120	
J	2.54		.100		
K		15		.50	
M	38.1		1.50		
N		9.53		.375	
P	2.92	3.43	.115	.135	
R	6.10	6.86	.240	.270	

NOTES
 1. INSTALLED POSITION LEAD CENTERS
 2. OVERALL INSTALLED DIMENSION
 3. THESE MEASUREMENTS ARE MADE FROM THE SEATING PLANE 4. FOUR PLACES

absolute maximum ratings

INFRARED EMITTING DIODE		
Power Dissipation		*100 milliwatts
Forward Current (Continuous)		60 milliamps
Forward Current (Peak)		1 ampere
(100µsec 1% duty cycle)		
Reverse Voltage		3 volts
*Derate 1.33mW/°C above 25°C ambient.		

PHOTO-SCR		
Off-State and Reverse Voltage	MCS2	200 volts
	MCS2400	400 volts
Peak Reverse Gate Voltage		6 volts
Direct On-State Current		300 milliamps
Surge (non-rep) On-State Current		10 amps
Peak Gate Current		10 milliamps
Output Power Dissipation		**400 milliwatts
**Derate 5.3mW/°C above 25°C ambient.		

TOTAL DEVICE		
Storage Temperature Range — 55°C to 150°C		
Operating Temperature Range — 55°C to 100°C		
Soldering Temperature (1/16" from case, 10 seconds) 260°C		
Total Device Dissipation 450 milliwatts		
Linear Derating Factor (above 25°C) 6.0mW/°C		
Surge Isolation Voltage (Input to Output)		
	3535V _(peak)	2500V _(RMS)
Steady-State Isolation Voltage (Input to Output)		
	3180V _(peak)	2250V _(RMS)

individual electrical characteristics (25°C) (unless otherwise specified)

INFRARED EMITTING DIODE	TYP.	MAX.	UNITS
Forward Voltage V _F (I _F = 20mA)	1.1	1.5	V
Reverse Current I _R (V _R = 3V)	—	10	µA
Capacitance C _J (V = 0, f = 1MHz)	50	—	pF

PHOTO-SCR	MIN.	MAX.	UNITS
Peak Off-State Voltage — V _{DM} (R _{GK} = 10KΩ, T _A = 100°C, I _D = 150µA)	MCS2	200	— V
	MCS2400	400	— V
Peak Reverse Voltage — V _{RM} (T _A = 100°C, I _R = 150µA)	MCS2	200	— V
	MCS2400	400	— V
On-State Voltage — V _T (I _T = 100mA)		—	1.3 V
Off-State Current — I _D (V _D = 200V, I _F = 0, R _{GK} = 27K)	MCS2	—	2 µA
Off-State Current — I _D (V _D = 400V, I _F = 0, R _{GK} = 27K)	MCS2400	—	2 µA
Reverse Current — I _R (V _R = 200V, I _F = 0)	MCS2	—	2 µA
Reverse Current — I _R (V _R = 400V, I _F = 0)	MCS2400	—	2 µA
Holding Current — I _H (V _{FX} = 50V, R _{GK} = 27KΩ)		10	500 µA

coupled electrical characteristics (25°C)

	MIN.	MAX.	UNITS
Input Current to Trigger			
Isolation Resistance (Input to Output)			
Turn-On Time — V _{AK} = 50V, I _F = 30mA, R _{GK} = 10KΩ, R _L = 200Ω			
Coupled dv/dt. Input to Output			
Input to Output Capacitance (Input to Output Voltage = 0, f = 1MHz)			
	.5	14	milliamps
	100	—	gigaohms
	—	50	microseconds
	500	—	volts/microsec.
	—	2	picrofarads

•9A Covered under U.L. component recognition program, reference file E51868
 VDE Approved to 0883/6.80 0110b Certificate #35025, except type 4N28

MCS2, MCS2400

TYPICAL CHARACTERISTICS

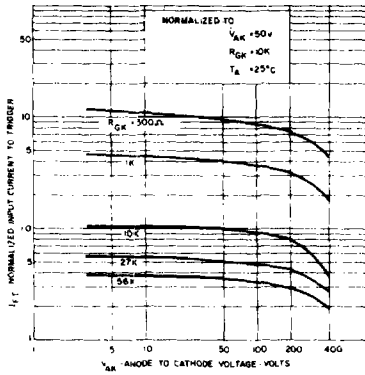


FIGURE 1. INPUT CURRENT TO TRIGGER VS. ANODE-CATHODE VOLTAGE

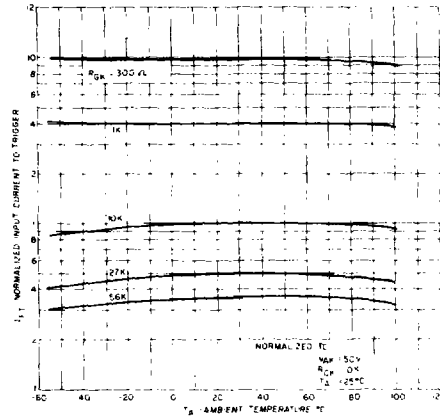


FIGURE 2. INPUT CURRENT TO TRIGGER VS. TEMPERATURE

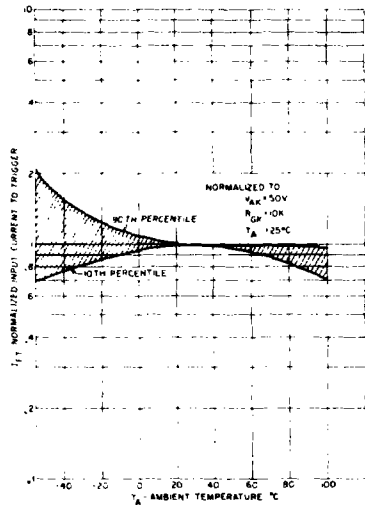


FIGURE 3. INPUT CURRENT TO TRIGGER DISTRIBUTION VS. TEMPERATURE

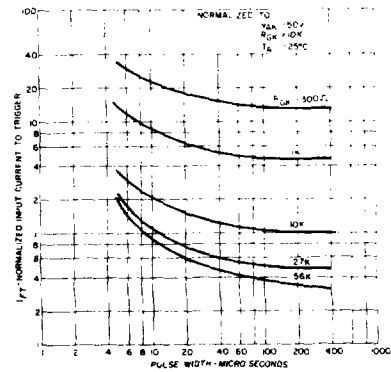


FIGURE 4. INPUT CURRENT TO TRIGGER VS. PULSE WIDTH

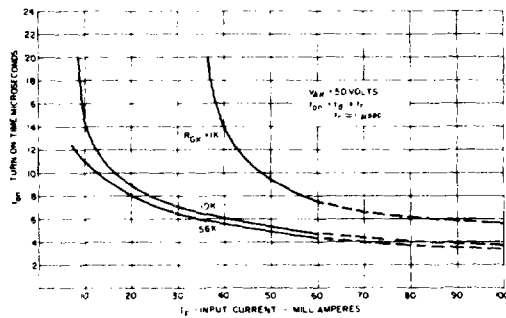


FIGURE 5. TURN-ON TIME VS. INPUT CURRENT

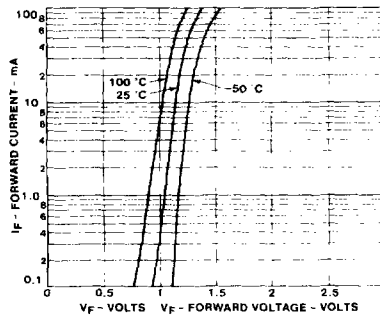


FIGURE 6. INPUT CHARACTERISTICS IF VS. VF