

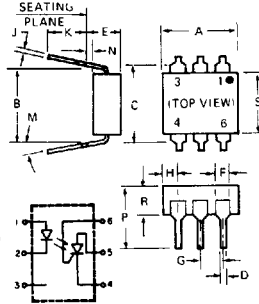
Generic Optoisolator Specifications

T-41-87

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	J4)	
B	7.62 REF		.300 REF		1
C	4.06	8.64	.16	.310	2
D	5.08		.200		3
E	1.01	1.78	.040	.070	
F	2.28	2.80	.090	.110	
G	2.16		.085		4
H	2.03	305.1	.008	.012	
J	2.54		.100		
K	15		.15		
M	381		.015		
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) (100µsec 1% duty cycle)	1 ampere
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
	MCS2400	2	µA
Off-State Current — I _D (V _D = 400V, I _F = 0, R _{GK} = 27K)	MCS2	2	µA
	MCS2400	2	µA
Reverse Current — I _R (V _R = 200V, I _F = 0)	MCS2	2	µA
	MCS2400	2	µA
Reverse Current — I _R (V _R = 400V, I _F = 0)	—	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	.5	14	milliamps
Isolation Resistance (Input to Output)	100	—	gigaohms
Turn-On Time — V _{AK} = 50V, I _F = 30mA, R _{GK} = 10KΩ, R _L = 200Ω	—	50	microseconds
Coupled dv/dt, Input to Output	500	—	volts/microsec.
Input to Output Capacitance (Input to Output Voltage = 0, f = 1MHz)	—	2	picofarads

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

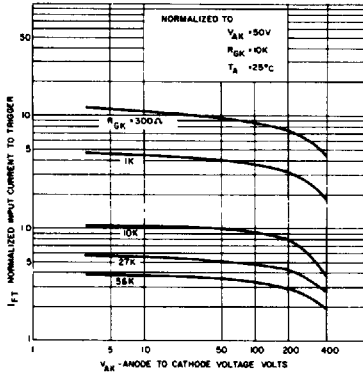


FIGURE 1. INPUT CURRENT TO TRIGGER VS. ANODE-CATHODE VOLTAGE

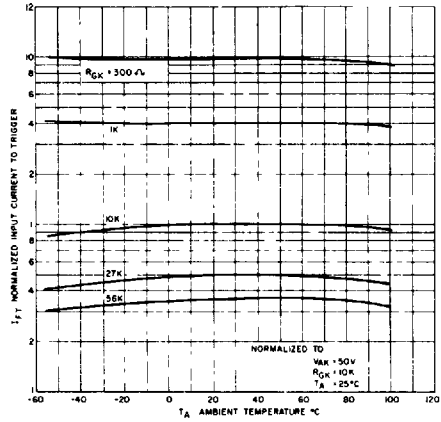


FIGURE 2. INPUT CURRENT TO TRIGGER VS. TEMPERATURE

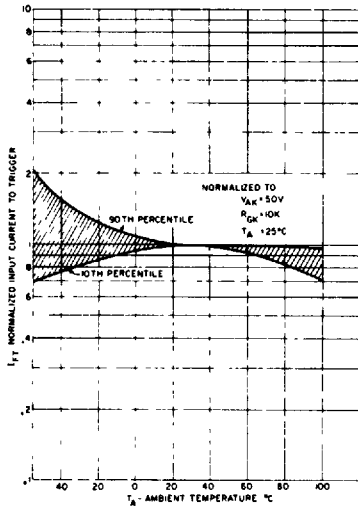


FIGURE 3. INPUT CURRENT TO TRIGGER DISTRIBUTION VS. TEMPERATURE

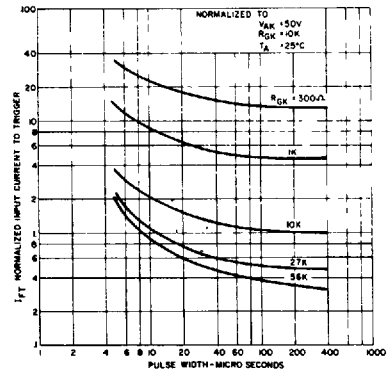


FIGURE 4. INPUT CURRENT TO TRIGGER VS. PULSE WIDTH

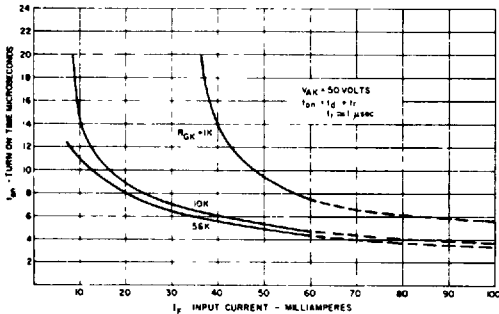


FIGURE 5. TURN-ON TIME VS. INPUT CURRENT

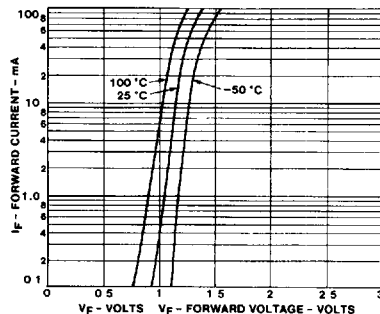


FIGURE 6. INPUT CHARACTERISTICS I_F VS. V_F