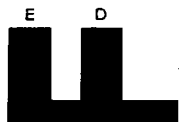


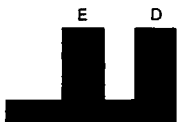
PACKAGE TYPES



MSA6530



MSA8530



MSA7530



MSA9530 C1996

DESCRIPTION

The MSAXXXX series of optoswitches is designed to allow the user maximum flexibility in his application. Each switch consists of an infrared emitting diode facing an NPN silicon photo-darlington across a 0.125" (3.18 mm) gap. Switching occurs whenever an IR-opaque object passes through the slot. A polysulfone housing provides excellent chemical and solvent resistance while allowing a fully enclosed design that keeps out dust and dirt.

FEATURES

- Fully enclosed design
- Choice of 4 mounting configurations
- Superior polysulfone material
- Guaranteed CTR _(SAT)
- Internal aperture of 0.050"

ABSOLUTE MAXIMUM RATINGS

Storage temperature range	..... -55°C to 100°C
Operating temperature range	..... -55°C to 100°C
Lead temperature (Soldering, 5 sec.)	..... 260°C
INPUT DIODE	
Power dissipation	..... 100 mW
Derate linearly 1.33 mW/°C above 25°C ambient	
Continuous forward current	..... 50 mA
Peak forward current (1 μsec PW, 300 pps)	..... 1 A

OUTPUT DARLINGTON

Power dissipation	..... 150 mW
Derate linearly 2 mW/°C above 25°C ambient	
Continuous collector current	..... 100 mA
Collector-emitter voltage	..... 30 V
Emitter-collector voltage	..... 5 V

MSA6530 MSA7530 MSA8530 MSA9530

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
INPUT DIODE						
Forward voltage	V_F		1.5	1.7	V	$I_F = 20\text{ mA}$
Reverse breakdown	BV_R	3.0	15		V	$I_R = 10\mu\text{A}$
Reverse leakage current	I_R			10	μA	$V_R = 3.0\text{ V}$
OUTPUT DARLINGTON						
Breakdown voltage						
Collector-emitter	BV_{CE0}	30			V	$I_C = 0.1\text{ mA}, I_F = 0$
Emitter-collector	BV_{EC0}	5	7		V	$I_E = 100\mu\text{A}, I_F = 0$
Collector dark current	I_{CE0}		5	100	nA	$V_{CE} = 5\text{ V}, I_F = 0, E_o = 0$

TRANSFER CHARACTERISTICS

DC CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
SATURATED COUPLING						
On-State collector current	$I_{C(ON)}$	1.6			mA	$I_F = 1.6\text{ mA}, V_{CE} = 1.0\text{ V}$
		10			mA	$I_F = 5\text{ mA}, V_{CE} = 1.0\text{ V}$
		25			mA	$I_F = 10\text{ mA}, V_{CE} = 1.0\text{ V}$

TYPICAL CHARACTERISTIC CURVES ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

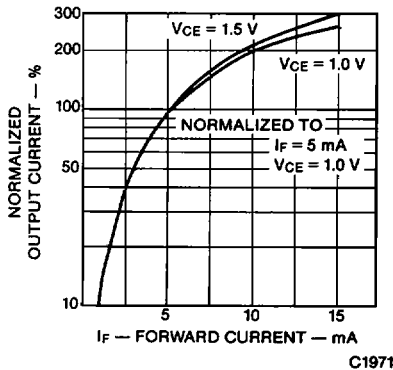


Fig. 1. Normalized Output Current vs. Input Current

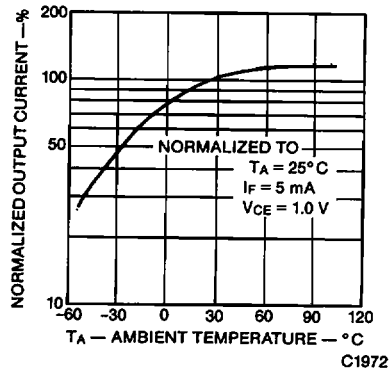


Fig. 2. Normalized Output Current vs. Ambient Temperature

MSA6530 MSA7530 MSA8530 MSA9530

TYPICAL CHARACTERISTIC CURVES ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified) (Cont'd)

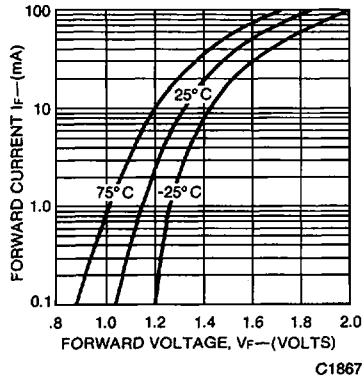


Fig. 3. Forward Current vs. Forward Voltage

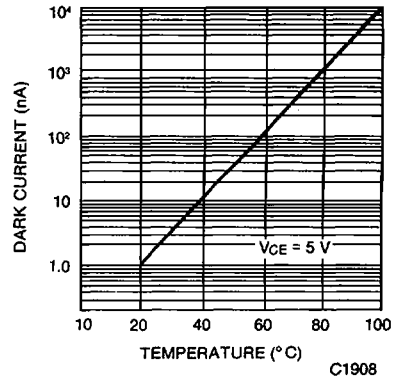


Fig. 4. Collector Dark Current vs. Ambient Temperature

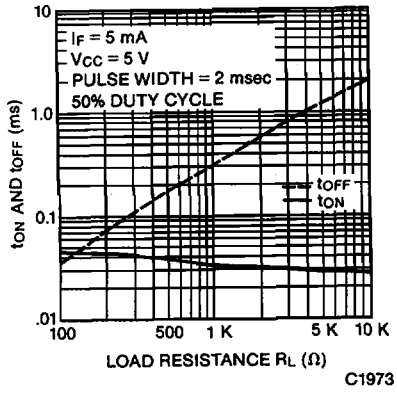


Fig. 5. Turn-on and Turn-off Time vs. Load Resistance

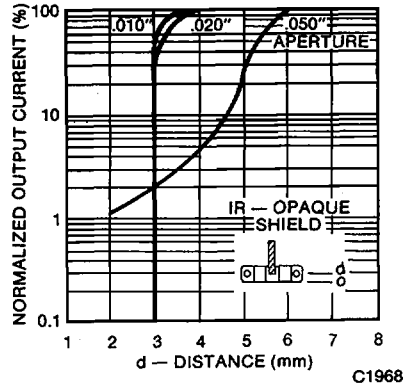


Fig. 6. Normalized Output Current vs. Lateral Shield Displacement

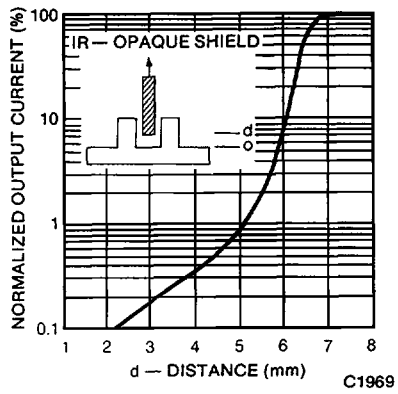


Fig. 7. Normalized Output Current vs. Vertical Shield Displacement

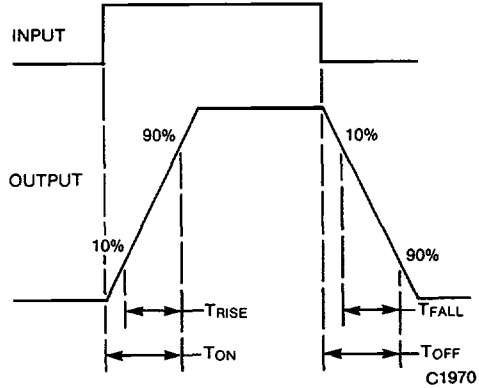
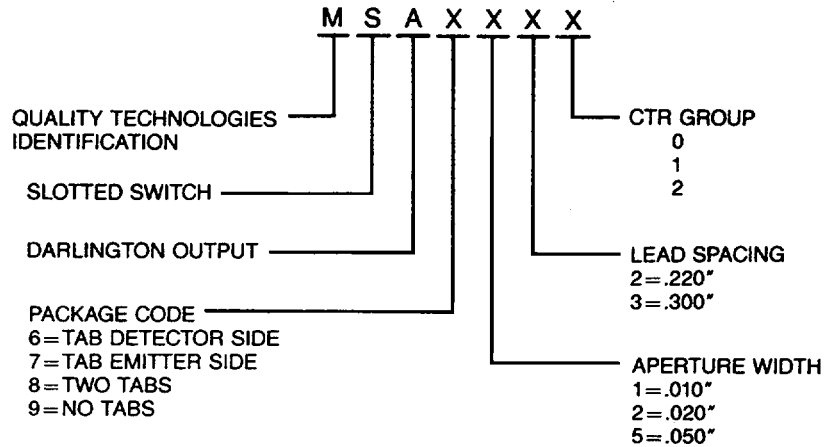


Fig. 8. Definition of Switching Parameters

MSA6530 MSA7530 MSA8530 MSA9530

MSAXXX SERIES NUMBERING SYSTEM



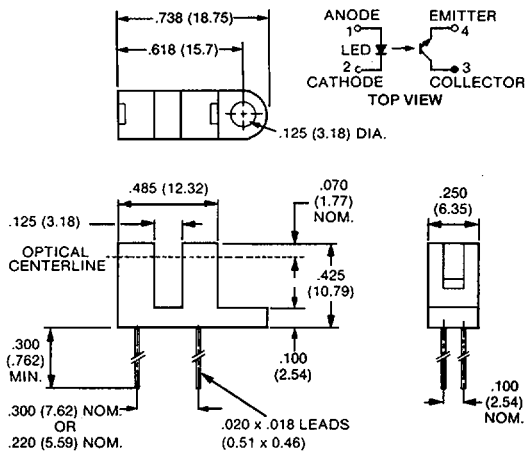
CROSS-REFERENCE GUIDE TO GE OPTOSWITCHES

H21B1	MSA8530	H21B5	MSA8530	H22B3	MSA9530
H21B2	MSA8530	H21B6	MSA8530	H22B4	MSA9530
H21B3	MSA8530	H22B1	MSA9530	H22B5	MSA9530
H21B4	MSA8530	H22B2	MSA9530	HSSB6	MSA9530

NOTE: *Minor mechanical variations may exist between the MSAXXX Series and GE's Optoswitches*

MSA6530 MSA7530 MSA8530 MSA9530

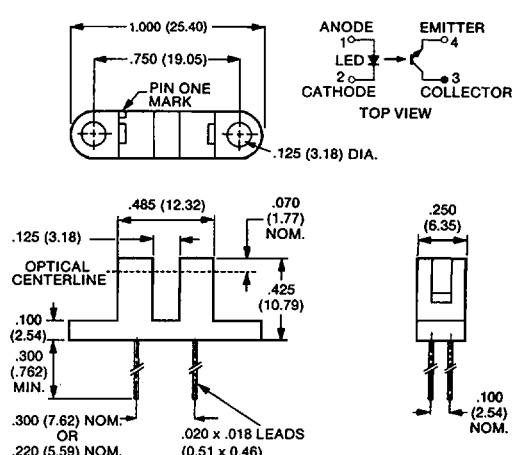
PACKAGE DIMENSIONS



ALL DIMENSIONS ARE IN INCHES (mm)
DIMENSIONS ±.010 INCHES
PIN 1 INDICATED BY DOT ON PACKAGE

MSA6530

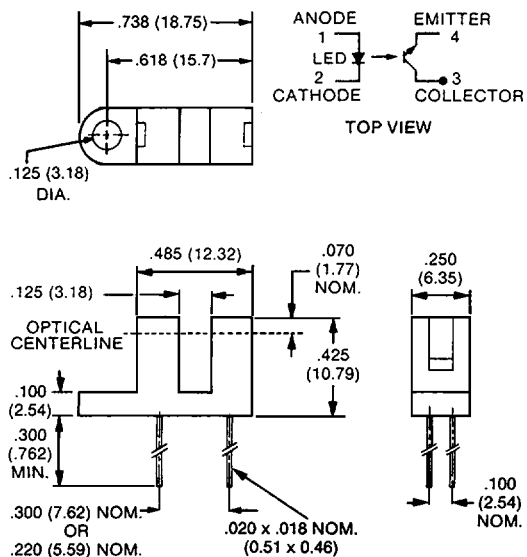
C1989



ALL DIMENSIONS ARE IN INCHES (mm)
DIMENSIONS ±.010 INCHES
PIN 1 INDICATED BY DOT ON PACKAGE

MSA8530

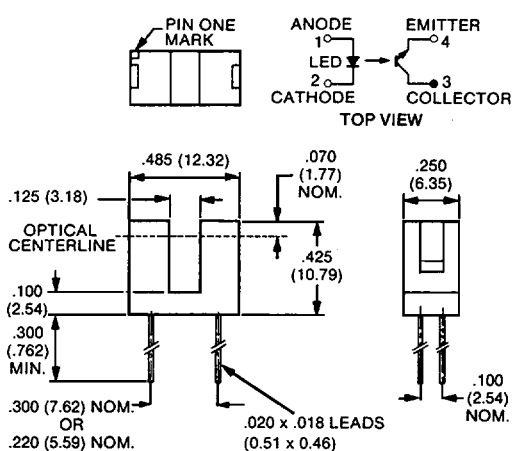
C1991



ALL DIMENSIONS ARE IN INCHES (mm)
DIMENSIONS ±.010 INCHES

MSA7530

C1988



ALL DIMENSIONS ARE IN INCHES (mm)
DIMENSIONS ±.010 INCHES

MSA9530

C1990

MSA6530 MSA7530 MSA8530 MSA9530

