

**ABSOLUTE MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$  Unless Otherwise Specified)

Storage Temperature .....	$-55^\circ\text{C}$ to $+100^\circ\text{C}$
Operating Temperature .....	$-55^\circ\text{C}$ to $+100^\circ\text{C}$
Soldering:	
Lead Temperature (Iron) .....	$240^\circ\text{C}$ for 5 sec. <sup>(3,4,5)</sup>
Lead Temperature (Flow) .....	$260^\circ\text{C}$ for 10 sec. <sup>(3,4)</sup>

**INPUT DIODE**

Continuous Forward Current .....	60 mA
Reverse Voltage .....	6.0 Volts
Power Dissipation .....	100 mW <sup>(1)</sup>

**OUTPUT TRANSISTOR**

Collector-Emitter Voltage .....	30 Volts
Emitter-Collector Voltage .....	6 Volts
Power Dissipation .....	150 mW <sup>(2)</sup>

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
<b>INPUT DIODE</b>						
Forward Voltage	$V_F$	—		1.7	V	$I_F = 60\text{ mA}$
Reverse Breakdown Voltage	$V_R$	6.0		—	V	$I_R = 10\text{ }\mu\text{A}$
Reverse Leakage Current	$I_R$	—		1.0	$\mu\text{A}$	$V_R = 3\text{ V}$
<b>OUTPUT TRANSISTOR</b>						
Emitter-Collector Breakdown	$BV_{ECO}$	6.0		—	V	$I_E = 100\text{ }\mu\text{A}$ , $E_e = 0$
Collector-Emitter Breakdown	$BV_{CED}$	30		—	V	$I_C = 1\text{ mA}$ , $E_e = 0$
Collector-Emitter Leakage	$I_{CEO}$	—		100	nA	$V_{CE} = 25\text{ V}$ , $E_e = 0$
<b>COUPLED</b>						
On-State Collector Current	$I_{C(ON)}$		See page 3.		mA	
Saturation Voltage	$V_{CE(SAT)}$		See page 3.		V	
Turn-On Time	$t_{ON}$		See page 3.		$\mu\text{S}$	
Turn-Off Time	$t_{OFF}$		See page 3.		$\mu\text{S}$	

**NOTES**

1. Derate power dissipation linearly 1.33 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
2. Derate power dissipation linearly 2.00 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
3. RMA flux is recommended.
4. Methanol or Isopropyl alcohols are recommended as cleaning agents.
5. Soldering iron tip  $\frac{1}{16}$ " (1.6 mm) from housing.

<b><math>I_{C(ON)}</math>, <math>V_{CE(SAT)}</math>, <math>t_{on}</math>, AND <math>t_{off}</math></b>						
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
<b>ON-STATE COLLECTOR CURRENT</b>						
H22A1	$I_{C(ON)}$	0.15	—	—	mA	$I_F = 5\text{mA}$ , $V_{CE} = 5\text{V}$
H22A2	$I_{C(ON)}$	0.30	—	—	mA	$I_F = 5\text{mA}$ , $V_{CE} = 5\text{V}$
H22A3	$I_{C(ON)}$	0.60	—	—	mA	$I_F = 5\text{mA}$ , $V_{CE} = 5\text{V}$
H22A1	$I_{C(ON)}$	1.0	—	—	mA	$I_F = 20\text{mA}$ , $V_{CE} = 5\text{V}$
H22A2	$I_{C(ON)}$	2.0	—	—	mA	$I_F = 20\text{mA}$ , $V_{CE} = 5\text{V}$
H22A3	$I_{C(ON)}$	4.0	—	—	mA	$I_F = 20\text{mA}$ , $V_{CE} = 5\text{V}$
H22A1	$I_{C(ON)}$	1.9	—	—	mA	$I_F = 30\text{mA}$ , $V_{CE} = 5\text{V}$
H22A2	$I_{C(ON)}$	3.0	—	—	mA	$I_F = 30\text{mA}$ , $V_{CE} = 5\text{V}$
H22A3	$I_{C(ON)}$	5.5	—	—	mA	$I_F = 30\text{mA}$ , $V_{CE} = 5\text{V}$
<b>SATURATION VOLTAGE</b>						
H22A2	$V_{CE(SAT)}$	—	—	0.40	V	$I_F = 20\text{mA}$ , $I_C = 1.8\text{mA}$
H22A3	$V_{CE(SAT)}$	—	—	0.40	V	$I_F = 20\text{mA}$ , $I_C = 1.8\text{mA}$
H22A1	$V_{CE(SAT)}$	—	—	0.40	V	$I_F = 30\text{mA}$ , $I_C = 1.8\text{mA}$
Turn-On Time	$t_{on}$	—	8	—	$\mu\text{S}$	$V_{CC} = 5\text{V}$ , $I_F = 30\text{mA}$ , $R_L = 2.5\text{K}\Omega$
Turn-Off Time	$t_{off}$	—	50	—	$\mu\text{S}$	$V_{CC} = 5\text{V}$ , $I_F = 30\text{mA}$ , $R_L = 2.5\text{K}\Omega$

**TYPICAL CHARACTERISTICS**

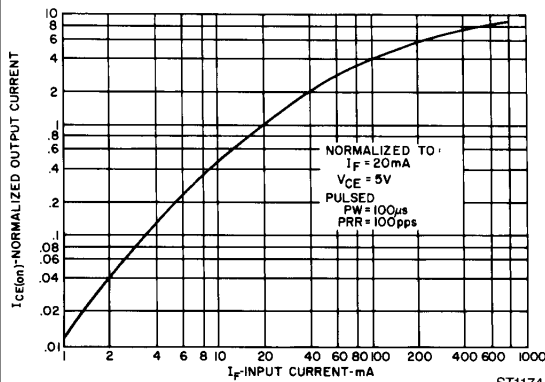


Fig. 1. Output Current vs. Input Current

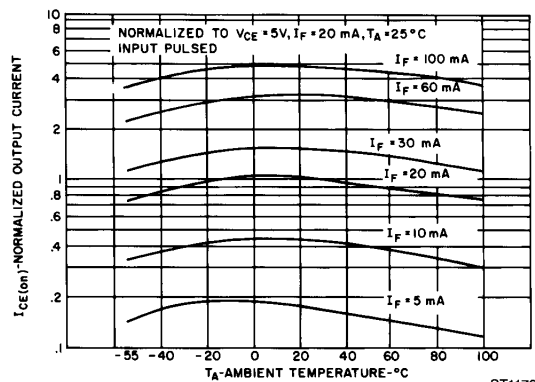


Fig. 2. Output Current vs. Temperature

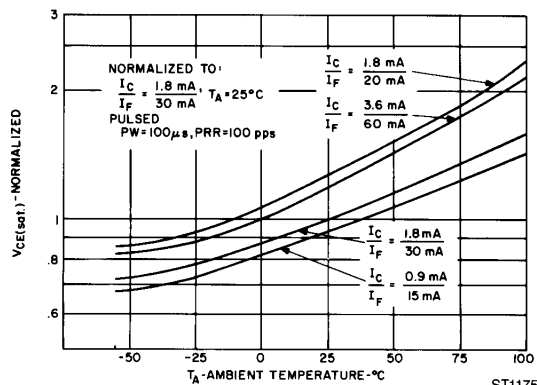


Fig. 3.  $V_{CE(sat)}$  vs. Temperature

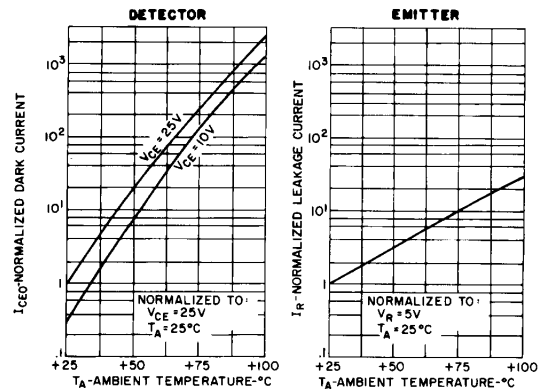


Fig. 4. Leakage Currents vs. Temperature

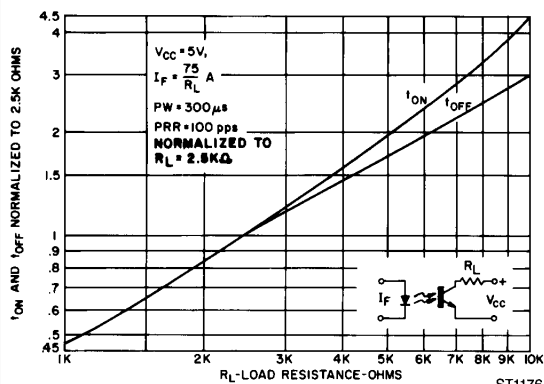


Fig. 5. Switching Speed vs.  $R_L$

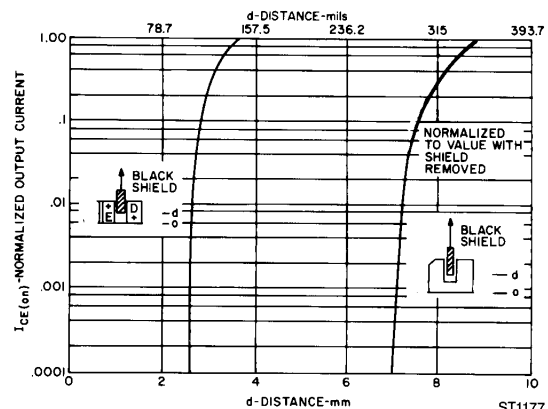


Fig. 6. Output Current vs. Shield Distance



## SLOTTED OPTICAL SWITCH

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.