



ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
INPUT				
Reverse voltage		V_R	5	V
Forward current		I_F	80	mA
Forward surge current	$t_p \leq 10\text{ }\mu\text{s}$	I_{FSM}	3	A
Power dissipation		P_{diss}	100	mW
Junction temperature		T_j	100	$^{\circ}\text{C}$
OUTPUT				
Off state output terminal voltage		V_{DRM}	250	V
On state RMS current		I_{TRM}	100	mA
Peak surge current, non-repetitive	$t_p \leq 10\text{ ms}$	I_{TMS}	1.5	A
Power dissipation		P_{diss}	300	mW
Junction temperature		T_j	100	$^{\circ}\text{C}$
COUPLER				
Isolation test voltage (RMS)	$t = 1\text{ s}$	V_{ISO}	5300	V_{RMS}
Total power dissipation		P_{tot}	350	mW
Storage temperature range		T_{stg}	- 55 to + 150	$^{\circ}\text{C}$
Ambient temperature range		T_{amb}	- 55 to + 100	$^{\circ}\text{C}$
Soldering temperature ⁽¹⁾	2 mm from case, $t \leq 10\text{ s}$	T_{sld}	260	$^{\circ}\text{C}$

Notes

- Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of this document. Exposure to absolute maximum ratings for extended periods of the time can adversely affect reliability.
- ⁽¹⁾ Refer to wave profile for soldering conditions for through hole devices (DIP) "Assembly Instructions" (www.vishay.com/doc?80054)

ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
INPUT							
Forward voltage	I _F = 50 mA		V _F		1.25	1.6	V
Junction capacitance	V _R = 0, f = 1 MHz		C _j		50		pF
OUTPUT							
Forward peak off-state voltage (repetitive)	I _{RDM} = 100 nA		V _{DRM} ⁽¹⁾	250			V
Peak on-state voltage	I _{TM} = 100 mA		V _{TM}		1.5	3	V
Critical rate of rise of off-state voltage	I _{FT} = 0, I _{FT} = 30 mA		dV/d _{tcr}		10		V/μs
			dV/d _{tcrq}	0.1	0.2		V/μs
COUPLER ⁽²⁾							
Collector emitter trigger current	V _S = 3 V, R _L = 150 Ω	K3010P	I _{FT}		8	15	mA
		K3010PG	I _{FT}		8	15	mA
		K3011P	I _{FT}		5	10	mA
		K3011PG	I _{FT}		5	10	mA
		K3012P	I _{FT}		2	5	mA
		K3012PG	I _{FT}		2	5	mA
Holding current	I _F = 10 mA, V _S ≥ 3 V		I _H		100		μA

Notes

- Minimum and maximum values are testing requirements. Typical values are characteristics of the device and are the result of engineering evaluation. Typical values are for information only and are not part of the testing requirements.
- ⁽¹⁾ Test voltage must be applied within dV/dt ratings.
- ⁽²⁾ I_{FT} is defined as a minimum trigger current.

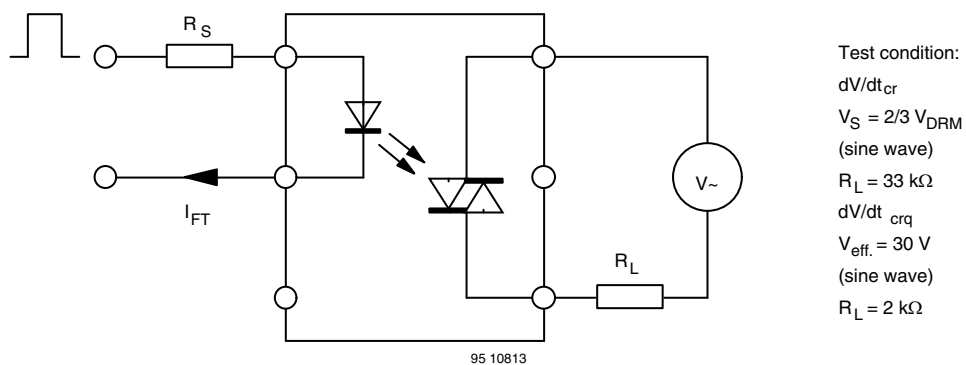
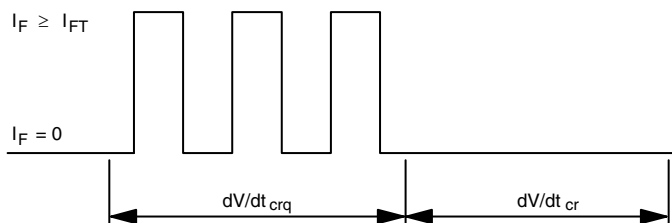


Fig. 1 - Test Circuit for dV/dt_{cr} and dV/dt_{crq}



dV/dt_{cr} Highest value of the "rate of rise of off-state voltage" which does not cause any switching from the off state to the on state

dV/dt_{crq} Highest value of the "rate of rise of communicating voltage" which does not switch on the device again, after the voltage has decreased to zero and the trigger current is switched from I_{FT} to zero

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Fig. 2

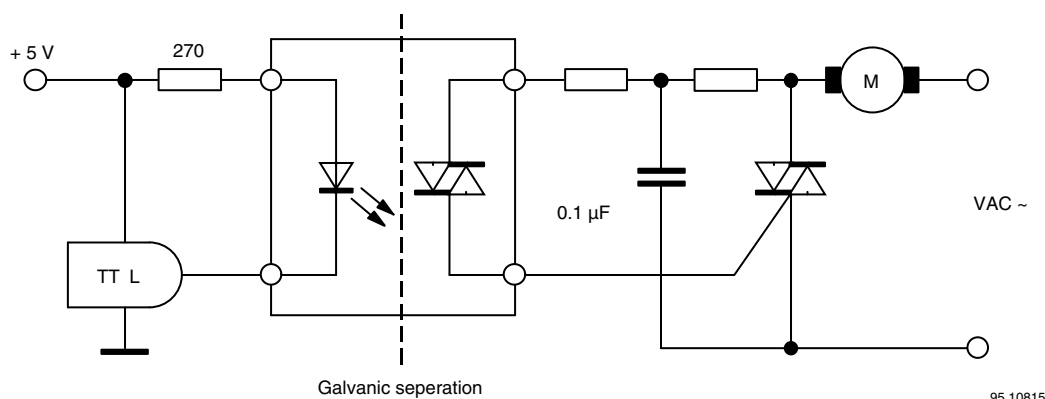


Fig. 3 - Motor Control Circuit

SAFETY AND INSULATION RATINGS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Climatic classification (according to IEC 68 part 1)			55/100/21		
Pollution degree (DIN VDE 0109)			2		
Comparative tracking index	CTI	175			
Peak transient overvoltage	V _{IOTM}			8000	V _{peak}
Peak working insulation voltage	V _{IORM}			890	V _{peak}
Partial discharge test voltage (method a, V _{pd} = V _{IORM} x 1.875)	V _{pd}			1669	V _{peak}
Isolation resistance at T _{amb} = 100 °C, V _{DC} = 500 V	R _{IO}	10 ¹¹			Ω
Isolation resistance at T _{amb} = 25 °C, V _{DC} = 500 V	R _{IO}	10 ¹²			Ω
Safety rating - power	P _{SO}			265	mW
Safety rating - input current	I _{SI}			130	mA
Safety rating - temperature	T _{SI}			150	°C
Clearance distance (Standard DIP-6)		7			mm
Creepage distance (Standard DIP-6)		7			mm
Clearance distance (400 mil DIP-6)		8			mm
Creepage distance (400 mil DIP-6)		8			mm

Note

- According to DIN EN60747-5-5 (see figure 4). This optocoupler is suitable for safe electrical isolation only within the safety ratings. Compliance with the safety ratings shall be ensured by means of suitable protective circuits.

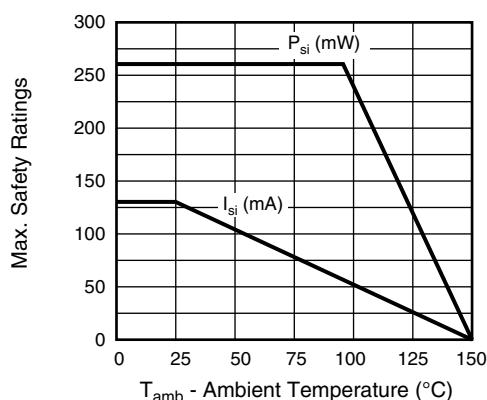


Fig. 4 - Safety Parameter Derating Diagram

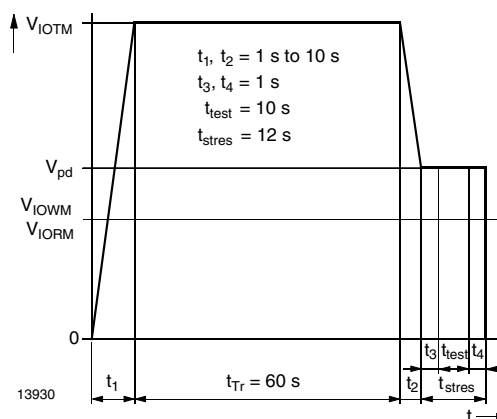


Fig. 5 - Test Pulse Diagram for Sample Test according to DIN EN60747-5-5/DIN EN60747-; IEC 60747

TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

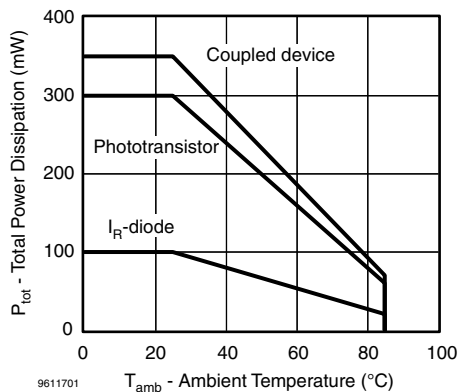


Fig. 6 - Total Power Dissipation vs. Ambient Temperature

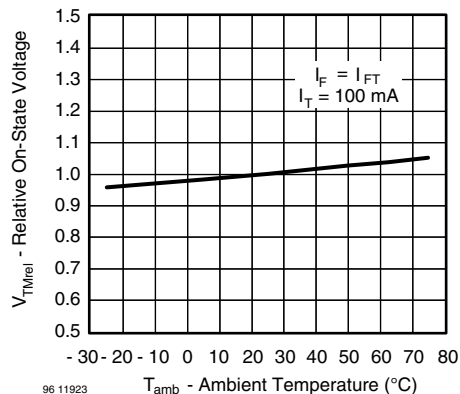


Fig. 9 - Relative On-State vs. Ambient Temperature

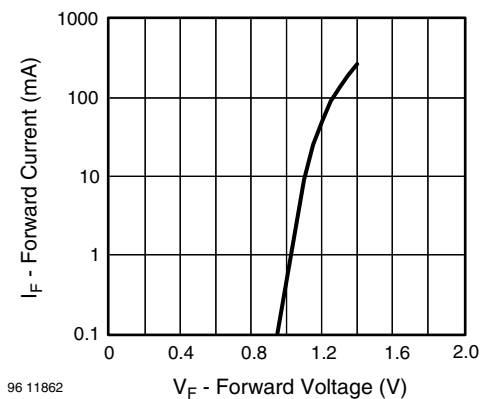


Fig. 7 - Forward Current vs. Forward Voltage

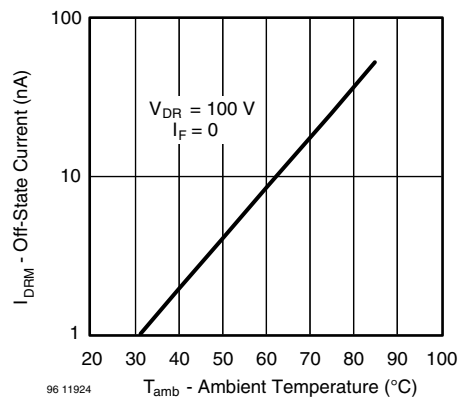


Fig. 10 - Off-State Current vs. Ambient Temperature

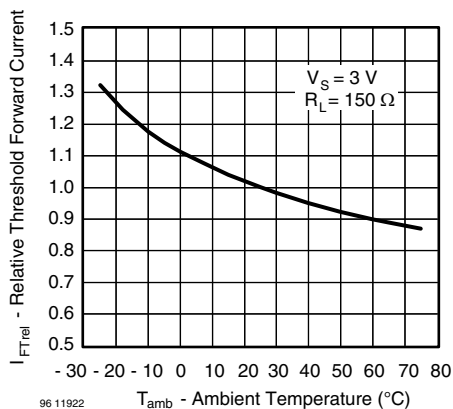


Fig. 8 - Relative Threshold Forward Current vs. Ambient Temperature

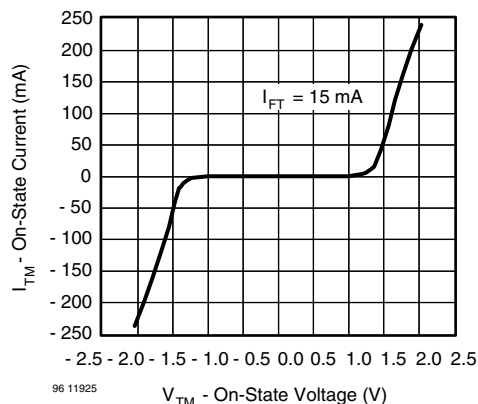
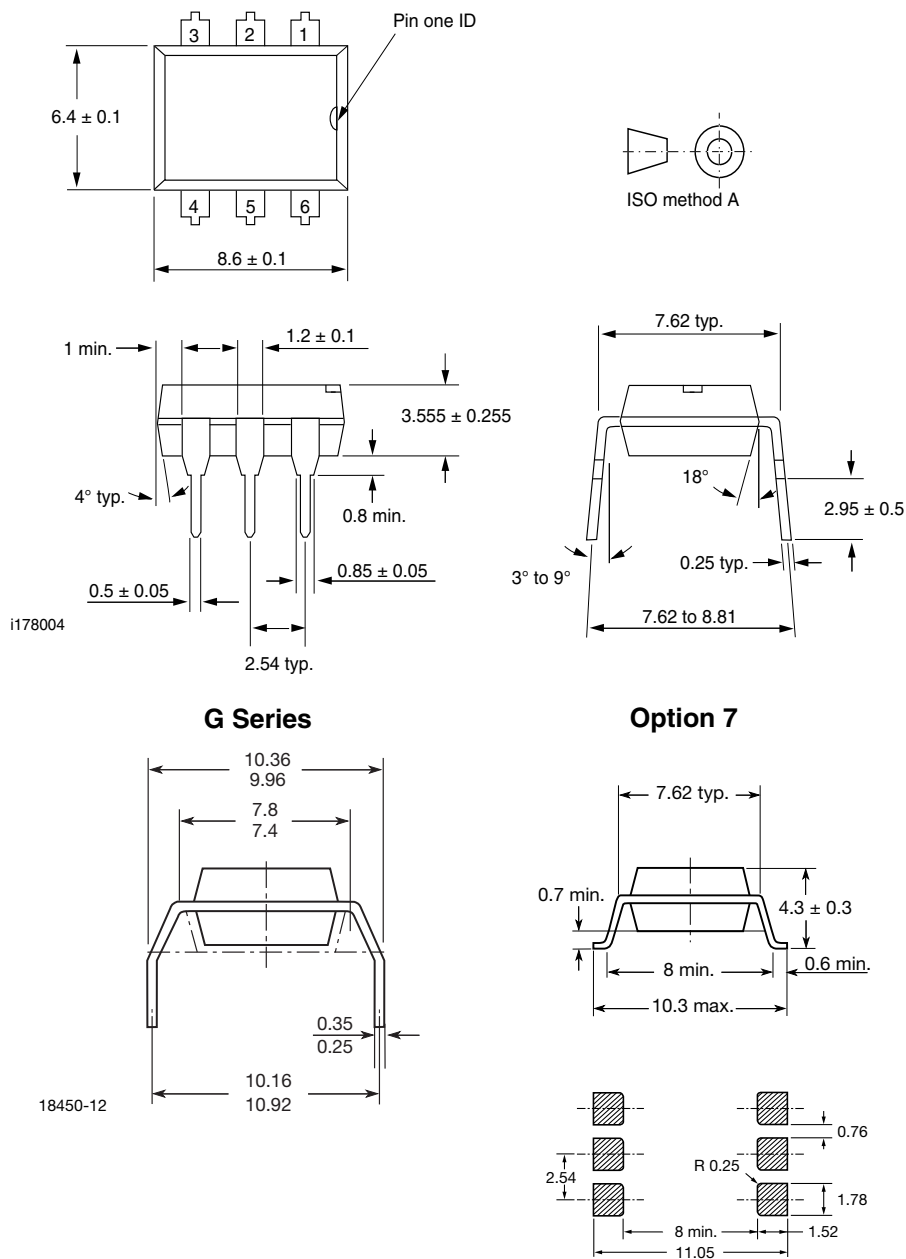


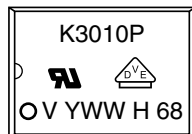
Fig. 11 - Collector Current vs. Forward Current



PACKAGE DIMENSIONS millimeters



PACKAGE MARKING (example)



Notes

- The “G” of the 400 mil G leadform type is not marked on the body.
- The VDE logo is only marked on option1 parts.



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