





ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
<b>INPUT</b>					
Reverse voltage			V <sub>R</sub>	6	V
Forward current			I <sub>F</sub>	60	mA
Power dissipation			P <sub>diss</sub>	100	mW
Derate from 25 °C				1.33	mW/°C
<b>OUTPUT</b>					
Peak off-state voltage		VO4254D/H/M	V <sub>DRM</sub>	400	V
		VO4256D/H/M	V <sub>DRM</sub>	600	V
RMS on-state current			I <sub>TM</sub>	300	mA
Power dissipation			P <sub>diss</sub>	500	mW
Derate from 25 °C				6.6	mW/°C
<b>COUPLER</b>					
Isolation test voltage (between emitter and detector, climate per DIN 500414, part 2, Nov. 74)	t = 1 s		V <sub>ISO</sub>	5300	V <sub>RMS</sub>
Storage temperature range			T <sub>stg</sub>	- 55 to + 150	°C
Ambient temperature range			T <sub>amb</sub>	- 55 to + 100	°C
Soldering temperature <sup>(2)</sup>	max. ≤ 10 s dip soldering ≥ 0.5 mm from case bottom		T <sub>sld</sub>	260	°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 reflow profile for soldering conditions for surface mounted devices (SMD). Refer to wave profile for soldering conditions for through hole devices (DIP).

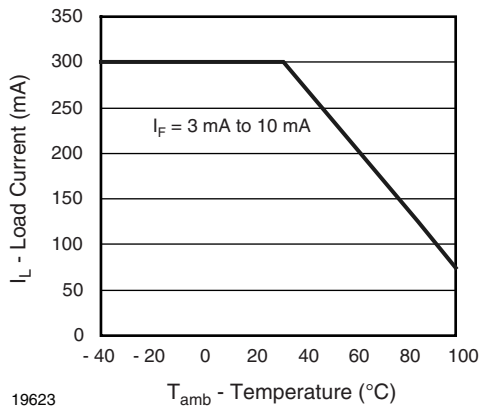
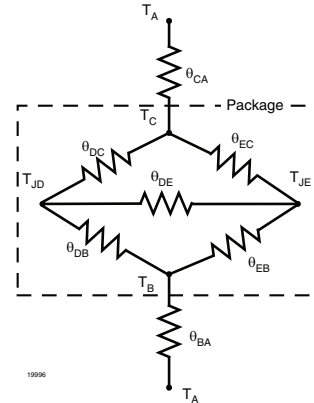


Fig. 1 - Recommended Operating Condition

THERMAL CHARACTERISTICS			
PARAMETER	SYMBOL	VALUE	UNIT
LED power dissipation	$P_{diss}$	100	mW
Output power dissipation	$P_{diss}$	500	mW
Maximum LED junction temperature	$T_{jmax.}$	125	°C
Maximum output die junction temperature	$T_{jmax.}$	125	°C
Thermal resistance, junction emitter to board	$\theta_{JEB}$	150	°C/W
Thermal resistance, junction emitter to case	$\theta_{JEC}$	139	°C/W
Thermal resistance, junction detector to board	$\theta_{JDB}$	78	°C/W
Thermal resistance, junction detector to case	$\theta_{JDC}$	103	°C/W
Thermal resistance, junction emitter to junction detector	$\theta_{JED}$	496	°C/W
Thermal resistance, case to ambient	$\theta_{CA}$	3563	°C/W


**Note**

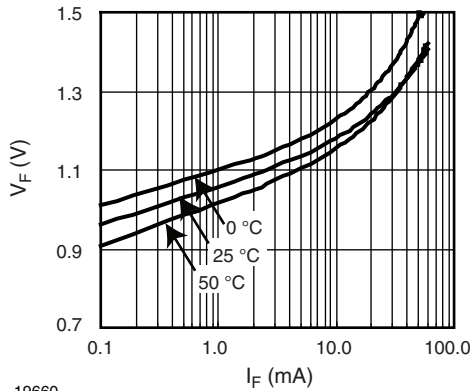
- The thermal characteristics table above were measured at 25 °C and the thermal model is represented in the thermal network below. Each resistance value given in this model can be used to calculate the temperatures at each node for a given operating condition. The thermal resistance from board to ambient will be dependent on the type of PCB, layout and thickness of copper traces. For a detailed explanation of the thermal model, please reference Vishay's Thermal Characteristics of Optocouplers application note.

ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ °C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
<b>INPUT</b>							
Forward voltage	$I_F = 10\text{ mA}$		$V_F$		1.2	1.4	V
Reverse current	$V_R = 6\text{ V}$		$I_R$		0.1	10	$\mu\text{A}$
Input capacitance	$V_F = 0\text{ V}$ , $f = 1\text{ MHz}$		$C_I$		40		pF
<b>OUTPUT</b>							
Repetitive peak off-state voltage	$I_{DRM} = 100\text{ }\mu\text{A}$	VO4254D/H/M	$V_{DRM}$	400			V
		VO4256D/H/M	$V_{DRM}$	600			V
Off-state current	$V_D = V_{DRM}$		$I_{DRM}$			100	$\mu\text{A}$
On-state voltage	$I_T = 300\text{ mA}$		$V_{TM}$			3	V
On-current	$PF = 1$ , $V_{T(RMS)} = 1.7\text{ V}$		$I_{TM}$			300	mA
Critical rate of rise of off-state voltage	$V_D = 0.67 V_{DRM}$ , $T_J = 25\text{ °C}$		$dV/dt_{cr}$	5000			V/ $\mu\text{s}$
<b>COUPLER</b>							
LED trigger current, current required to latch output	$V_D = 3\text{ V}$	VO4254D	$I_{FT}$			1.6	mA
		VO4254H	$I_{FT}$			2	mA
		VO4254M	$I_{FT}$			3	mA
		VO4256D	$I_{FT}$			1.6	mA
		VO4256H	$I_{FT}$			2	mA
		VO4256M	$I_{FT}$			3	mA
Capacitance (input to output)	$f = 1\text{ MHz}$ , $V_{IO} = 0\text{ V}$		$C_{IO}$		0.8		pF

**Note**

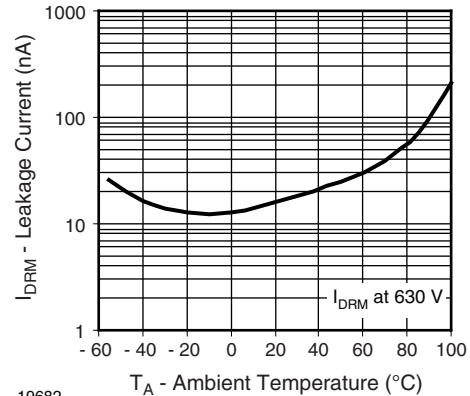
- Minimum and maximum values were tested requirements. Typical values are characteristics of the device and are the result of engineering evaluation. Typical values are for information only and are not part of the testing requirements.

SAFETY AND INSULATION RATINGS						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Climatic classification (according to IEC68 part 1)				55/100/21		
Pollution degree (DIN VDE 0109)				2		
Comparative tracking index per DIN IEC112/VDE 0303 part 1, group IIIa per DIN VDE 6110 175 399			175		399	
$V_{IOTM}$		$V_{IOTM}$	8000			V
$V_{IORM}$		$V_{IORM}$	890			V
$P_{SO}$		$P_{SO}$			500	mW
$I_{SI}$		$I_{SI}$			250	mA
$T_{SI}$		$T_{SI}$			175	°C
Creepage distance			7			mm
Clearance distance			7			mm

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


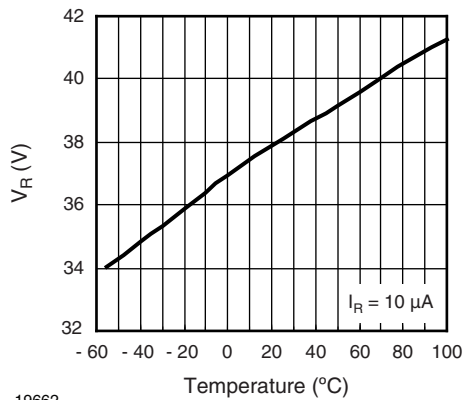
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Fig. 2 - Diode Forward Voltage vs. Forward Current



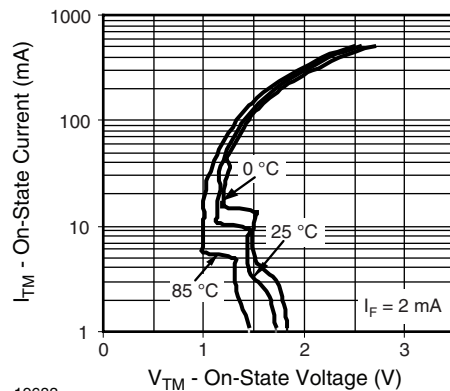
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Fig. 4 - Leakage Current vs. Ambient Temperature



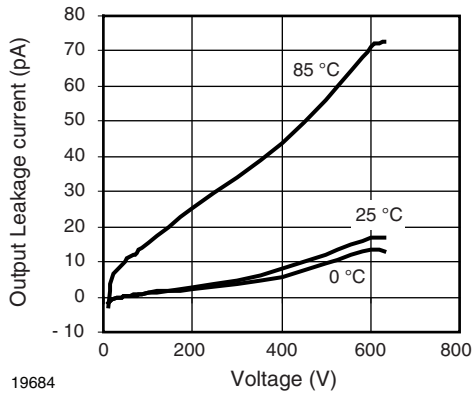
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Fig. 3 - Diode Reverse Voltage vs. Temperature



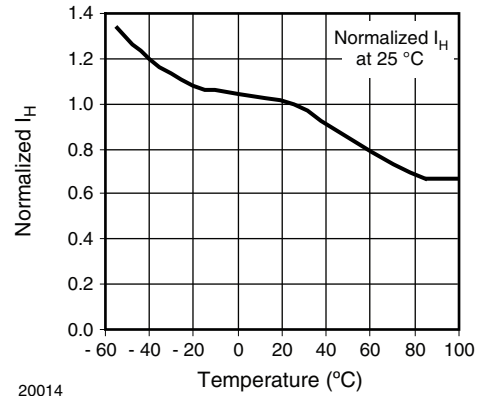
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Fig. 5 - On-State Current vs. On-State Voltage



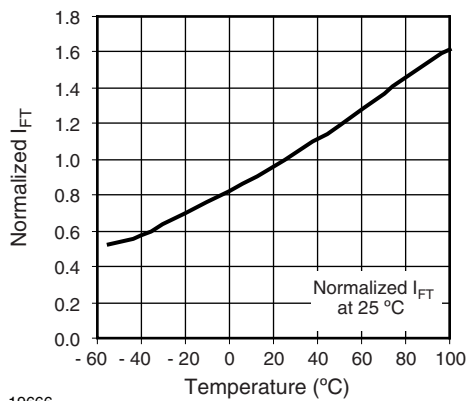
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Fig. 6 - Output Off Current (Leakage) vs. Voltage



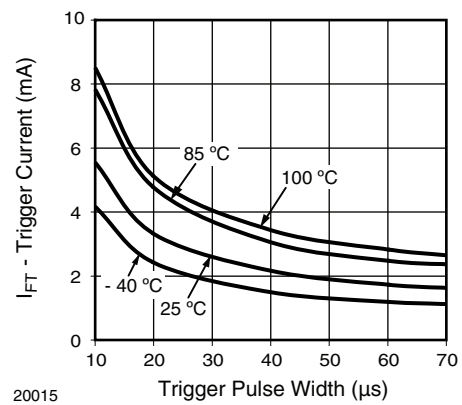
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Fig. 9 - Normalized  $I_H$  vs. Temperature



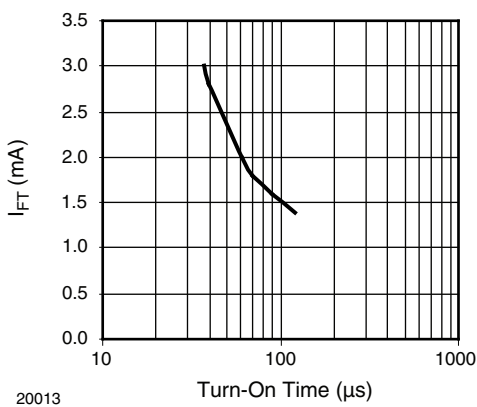
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Fig. 7 - Normalized Trigger Input Current vs. Temperature



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Fig. 10 -  $I_{FT}$  vs. LED Pulse Width

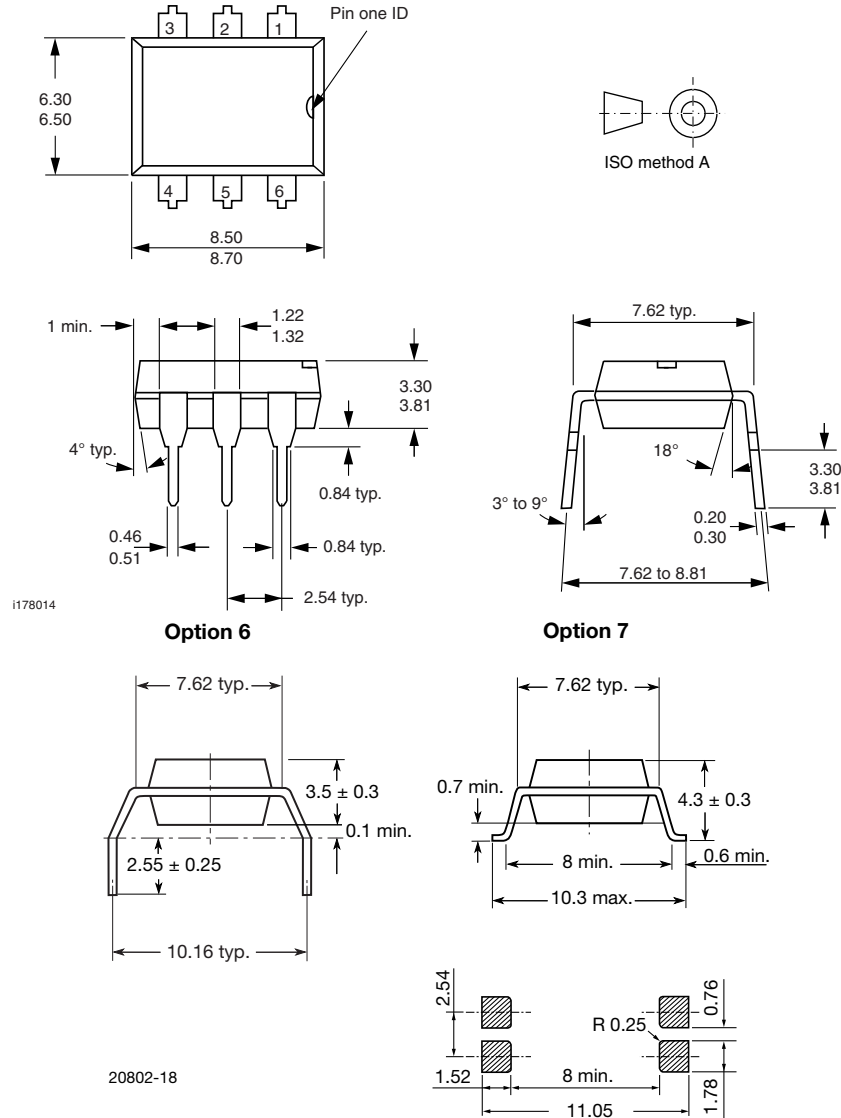


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Fig. 8 -  $I_{FT}$  vs. Turn-On Time ( $\mu$ s)



**PACKAGE DIMENSIONS** in millimeters



**PACKAGE MARKING** (example)



**Note**

- VDE logo is only marked on option 1 parts. Tape and reel suffix (T) is not part of the package marking.



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