ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)					
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**VALUE**	**UNIT**
INPUT					
Reverse voltage			V_R	6	V
Forward current			I_F	60	mA
Surge current			I_{FSM}	2.5	A
Power dissipation			P_{diss}	100	mW
Derate from 25 °C				1.33	mW/°C
OUTPUT					
Peak off-state voltage		IL420	V_{DRM}	600	V
		IL4208	V_{DRM}	800	V
RMS on-state current			I_{TM}	300	mA
Single cycle surge current			I_{TSM}	3	A
Power dissipation			P_{diss}	500	mW
Derate from 25 °C				6.6	mW/°C
COUPLER					
Isolation test voltage between emitter and detector	t = 1 s		V_{ISO}	5300	V_{RMS}
Isolation resistance	V_{IO} = 500 V, T_{amb} = 25 °C		R_{IO}	$\geq 10^{12}$	Ω
	V_{IO} = 500 V, T_{amb} = 100 °C		R_{IO}	$\geq 10^{11}$	Ω
Storage temperature range			T_{stg}	- 55 to + 150	°C
Ambient temperature range			T_{amb}	- 55 to + 100	°C
Soldering temperature (1)	max. ≤ 10 s dip soldering ≥ 0.5 mm from case bottom		T_{sld}	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 condditions for through hole devices (DIP).

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
INPUT						
Forward voltage	I_F = 10 mA	V_F		1.16	1.35	V
Reverse current	V_R = 6 V	I_R		0.1	10	µA
Input capacitance	V_F = 0 V, f = 1 MHz	C_{IN}		40		pF
Thermal resistance, junction to ambient		R_{thja}		750		°C/W
OUTPUT						
Off-state current	$V_D = V_{DRM}$, T_{amb} = 100 °C	I_{DRM}		10	100	µA
On-state voltage	I_T = 300 mA	V_{TM}		1.7	3	V
Surge (non-repetitive), on-state current	f = 50 Hz	I_{TSM}			3	A
Holding current		I_H		65	500	µA
Latching current	V_T = 2.2 V	I_L			500	µA
LED trigger current	V_D = 5 V	I_{FT}		1	2	mA
Trigger current temperature gradient		$\Delta I_{FT}/\Delta T_j$		7	14	µA/°C
Critical rate of rise off-state voltage	V_D = 0.67 V_{DRM}, T_j = 25 °C	dV/dt_{cr}	10 000			V/µs
	V_D = 0.67 V_{DRM}, T_j = 80 °C	dV/dt_{cr}	5000			V/µs
Critical rate of rise of voltage at current commutation	V_D = 230 V_{RMS}, I_D = 300 mA_{RMS}, T_J = 25 °C	dV/dt_{crq}		8		V/µs
	V_D = 230 V_{RMS}, I_D = 300 mA_{RMS}, T_J = 85 °C	dV/dt_{crq}		7		V/µs
Critical rate of rise of on-state current commutation		dI/dt_{crq}		12		A/ms
Thermal resistance, junction to ambient		R_{thja}		150		°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
COUPLER						
Critical rate of rise of coupled input/output voltage	I_T = 0 A, $V_{RM} = V_{DM} = V_{DRM}$	dV/dt		5000		V/µs
Capacitance (input to output)	f = 1 MHz, V_{IO} = 0 V	C_{IO}		0.8		pF

Note

- 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.

SWITCHING CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Turn-on time	$V_{RM} = V_{DM} = V_{DRM}$	t_{on}		35		µs

SAFETY AND INSULATION RATINGS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Climatic classification (according to IEC68 part 1)				55/100/21		
Comparative tracking index		CTI	175		399	
V_{IOTM}			8000			V
V_{IORM}			630			V
P_{SO}					500	mW
I_{SI}					250	mA
T_{SI}					175	°C
Creepage distance	Standard DIP-8		7			mm
Clearance distance	Standard DIP-8		7			mm
Creepage distance	400 mil DIP-8		8			mm
Clearance distance	400 mil DIP-8		8			mm
Insulation thickness	For IL4208 only		0.4			mm

Note

- As per IEC60747-5-2, § 7.4.3.8.1, this optocoupler is suitable for “safe electrical insulation” only within the safety ratings. Compliance with the safety ratings shall be ensured by means of protective circuits.

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

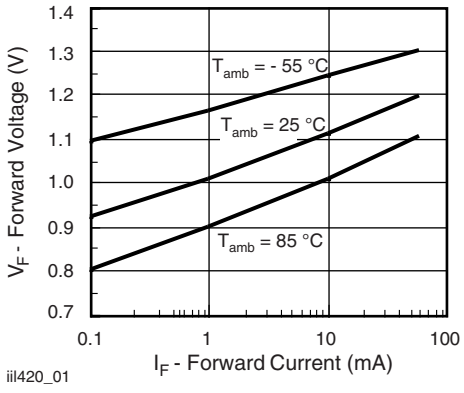


Fig. 1 - Forward Voltage vs. Forward Current

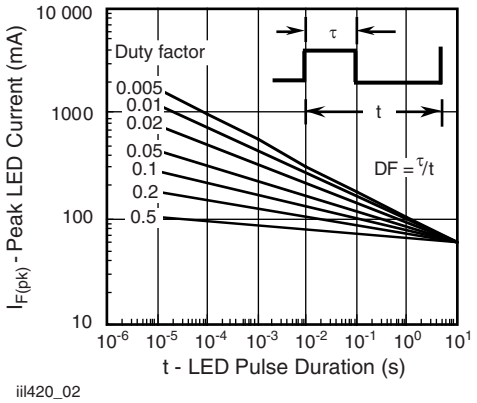


Fig. 2 - Peak LED Current vs. Duty Factor, τ

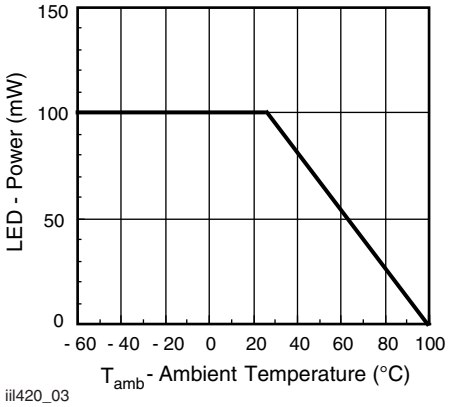


Fig. 3 - Maximum LED Power Dissipation

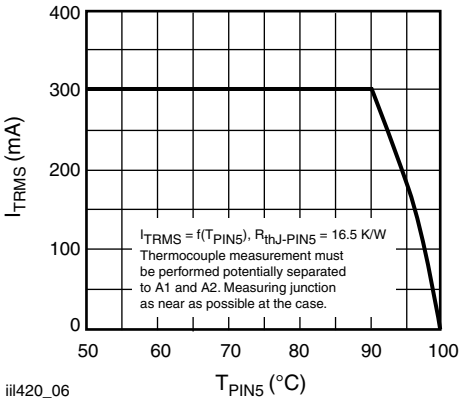


Fig. 6 - Current Reduction

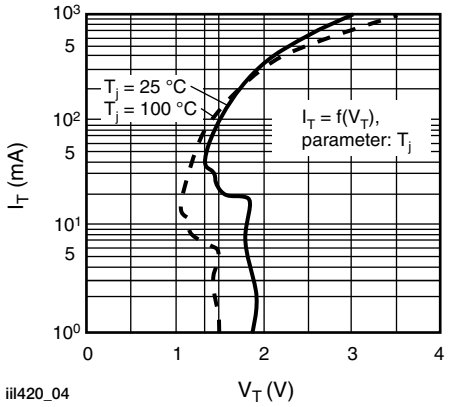


Fig. 4 - Typical Output Characteristics

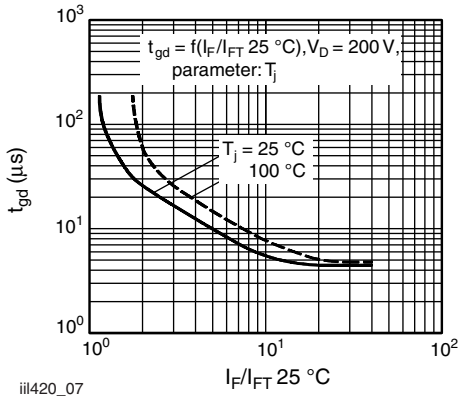


Fig. 7 - Typical Trigger Delay Time

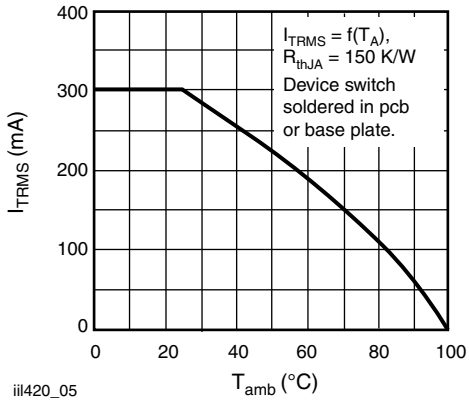


Fig. 5 - Current Reduction

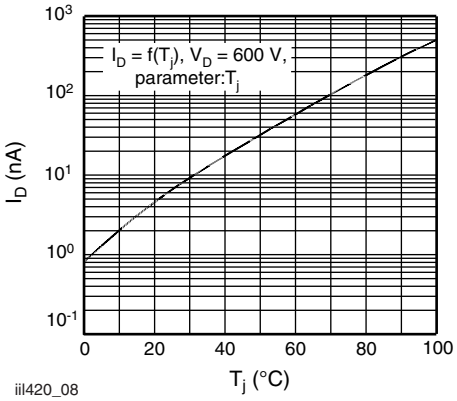


Fig. 8 - Typical Off-State Current

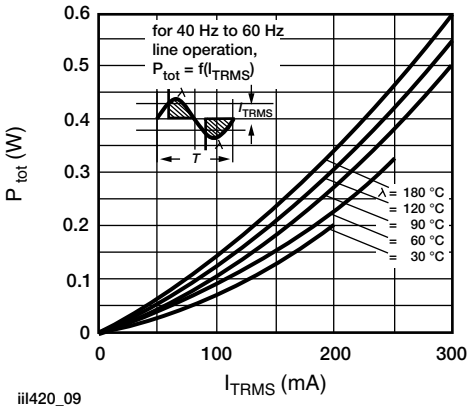


Fig. 9 - Power Dissipation

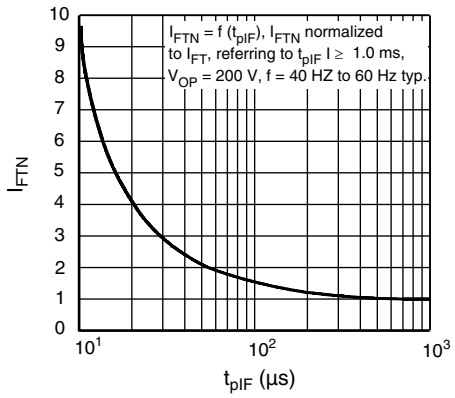
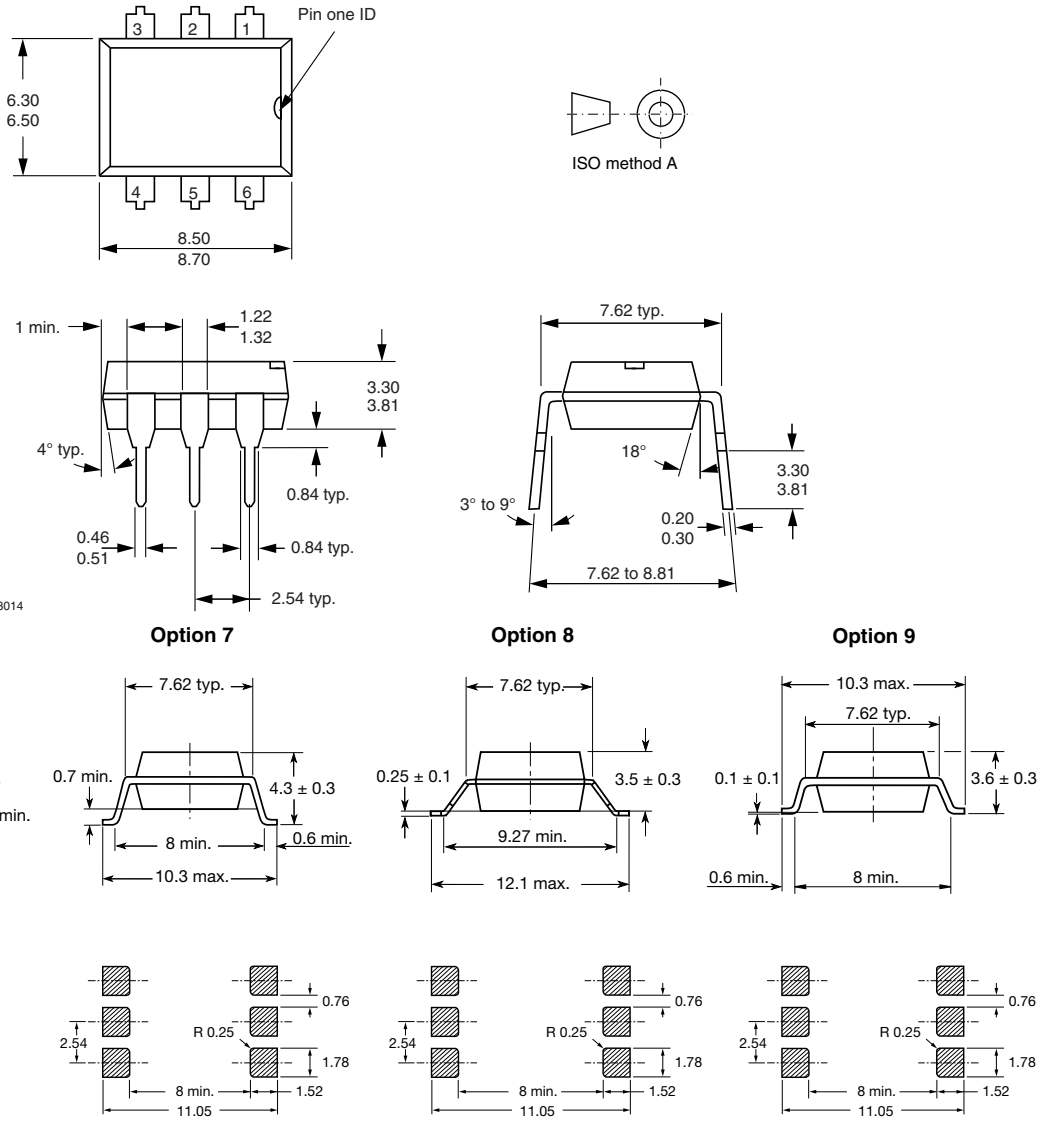
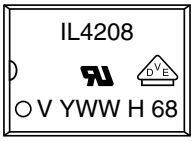


Fig. 10 - Pulse Trigger Current

PACKAGE DIMENSIONS in millimeters



PACKAGE MARKING (example)



Notes

- Only options 1, 7, and 8 are reflected in the package marking.
- The 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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