ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
INPUT				
DC forward current		I_F	60	mA
Reverse voltage		V_R	6	V
Power dissipation		P_{diss}	70	mW
Surge forward current	$t_p \leq 10$ µs	I_{FSM}	2.5	A
OUTPUT				
Collector emitter voltage		V_{CEO}	80	V
Emitter collector voltage		V_{ECO}	7	V
Collector current		I_C	50	mA
	$t_p \leq 1$ ms		100	mA
Power dissipation		P_{diss}	150	mW
COUPLER				
Isolation test voltage between emitter and detector	t = 1 min	V_{ISO}	3750	V_{RMS}
Total power dissipation		P_{tot}	170	mW
Operating temperature range		T_{amb}	- 55 to + 110	°C
Storage temperature range		T_{stg}	- 55 to + 150	°C
Junction temperature		T_j	125	°C
Soldering temperature (1)		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) See “Assembly Instructions” for surface mounted devices (www.vishay.com/doc?80054).

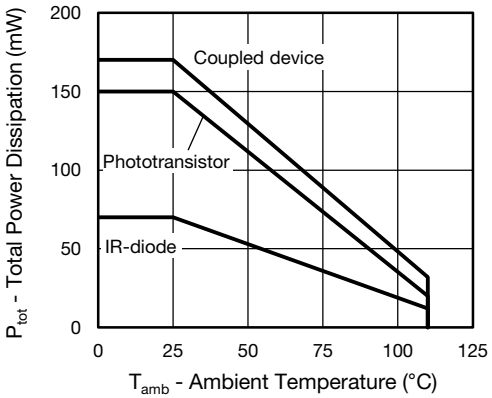


Fig. 1 - Total Power Dissipation vs. Ambient Temperature

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
INPUT						
Forward voltage	I_F = 5 mA	V_F		1.1	1.6	V
Reverse current	V_R = 6 V	I_R		0.01	10	µA
Capacitance	V_R = 0 V, f = 1 MHz	C_j		9		pF
OUTPUT						
Collector emitter leakage current	V_{CE} = 20 V	I_{CEO}		0.3	100	nA
Collector emitter breakdown voltage	I_C = 100 µA	BV_{CEO}	80			V
Emitter collector breakdown voltage	I_E = 10 µA	BV_{ECO}	7			V
Collector emitter capacitance	V_{CE} = 5 V, f = 1 MHz	C_{CE}		2.8		pF
COUPLER						
Coupling capacitance	f = 1 MHz	C_{IO}		0.3		pF
Collector emitter saturation voltage	I_F = 10 mA, I_C = 2.5 mA	V_{CEsat}		0.12	0.4	V
Cut-off frequency	I_F = 10 mA, V_{CC} = 5 V, R_L = 100 Ω	f_{ctr}		110		kHz

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.

CURRENT TRANSFER RATIO (T_{amb} = 25 °C, unless otherwise specified)							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
I_C/I_F	I_F = 5 mA, V_{CE} = 5 V	VOM617A	CTR	50		600	%
		VOM617A-2	CTR	63		125	%
		VOM617A-3	CTR	100		200	%
		VOM617A-4	CTR	160		320	%
		VOM617A-6	CTR	250		500	%
		VOM617A-7	CTR	80		160	%
		VOM617A-8	CTR	130		260	%
		VOM617A-9	CTR	200		400	%

SWITCHING CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
NON-SATURATED						
Rise and fall time	I_C = 2 mA, V_{CC} = 5 V, R_L = 100 Ω	t_r		3		µs
Fall time		t_f		3		µs
Turn-on time		t_{on}		6		µs
Turn-off time		t_{off}		4		µs
SATURATED						
Rise and fall time	I_F = 1.6 mA, V_{CC} = 5 V, R_L = 1.9 kΩ	t_r		7		µs
Fall time		t_f		12		µs
Turn-on time		t_{on}		9		µs
Turn-off time		t_{off}		15		µs

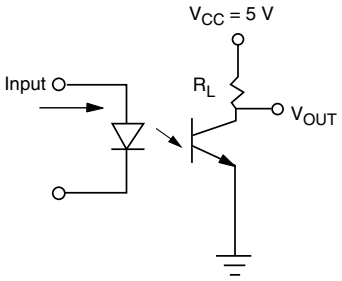


Fig. 2 - Test Circuit

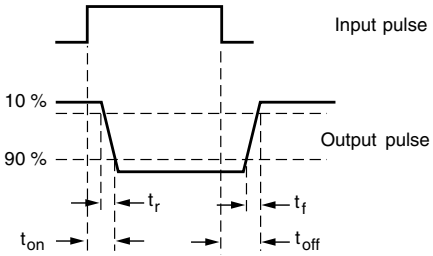


Fig. 3 - Test Circuit and Waveforms

SAFETY AND INSULATION RATINGS				
PARAMETER		**SYMBOL**	**VALUE**	**UNIT**
MAXIMUM SAFETY RATINGS				
Output safety power		P_{SO}	300	mW
Input safety current		I_{si}	200	mW
Safety temperature		T_S	150	°C
Comparative tracking index		CTI	175	
INSULATION RATED PARAMETERS				
Maximum withstanding isolation voltage		V_{ISO}	3750	V_{RMS}
Maximum transient isolation voltage		V_{IOTM}	6000	V_{peak}
Maximum repetitive peak isolation voltage		V_{IORM}	565	V_{peak}
Insulation resistance	T_{amb} = 25 °C, V_{DC} = 500 V	R_{IO}	10^{12}	Ω
Isolation resistance	T_{amb} = 100 °C, V_{DC} = 500 V	R_{IO}	10^{11}	Ω
Climatic classification (according to IEC 68 part 1)			55/110/21	
Environment (pollution degree in accordance to DIN VDE 0109)			2	
Internal creepage			≥ 5	mm
External creepage			≥ 5	mm
Clearance			≥ 5	mm
Insulation thickness			≥ 0.4	mm

Note

- As per DIN EN 60747-5-5 (VDE 0884), § 7.4.3.8.2, 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)

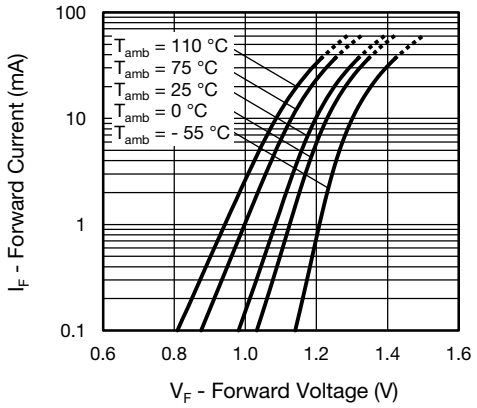


Fig. 4 - Forward Voltage vs. Forward Current

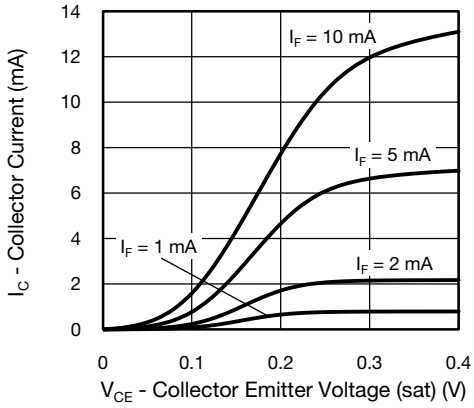


Fig. 7 - Collector Current vs. Collector Emitter Voltage (sat)

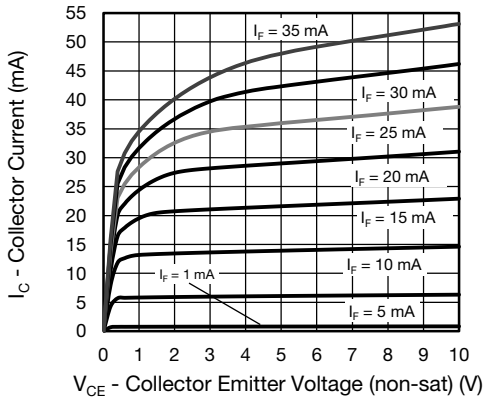


Fig. 5 - Collector Current vs. Collector Emitter Voltage (NS)

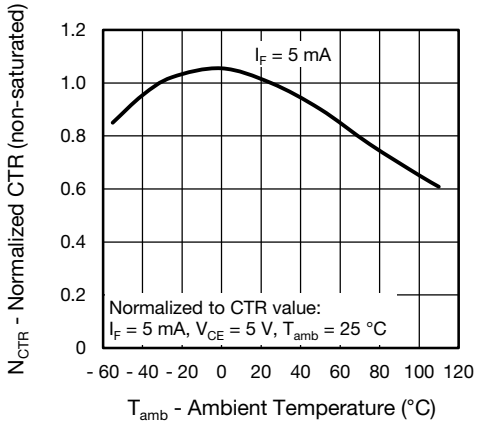


Fig. 8 - Normalized Current Transfer Ratio (non-sat) vs. Ambient Temperature

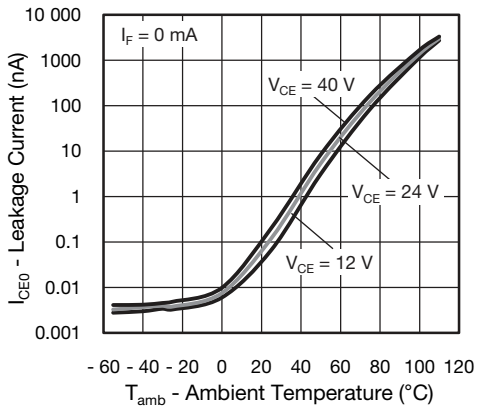


Fig. 6 - Leakage Current vs. Ambient Temperature

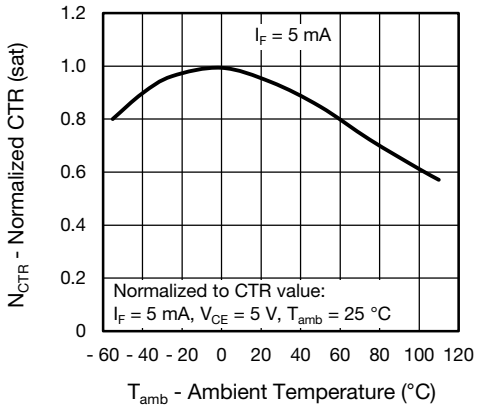


Fig. 9 - Normalized Current Transfer Ratio (sat) vs. Ambient Temperature

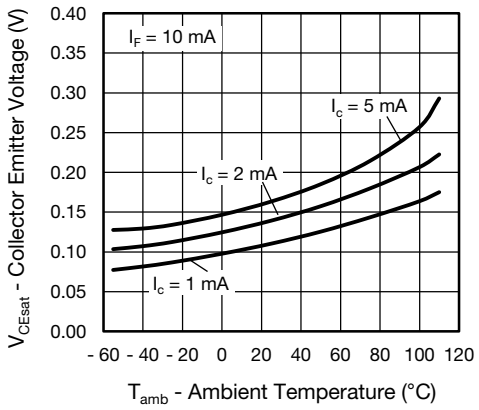


Fig. 10 - Collector Emitter Voltage vs. Ambient Temperature (saturated)

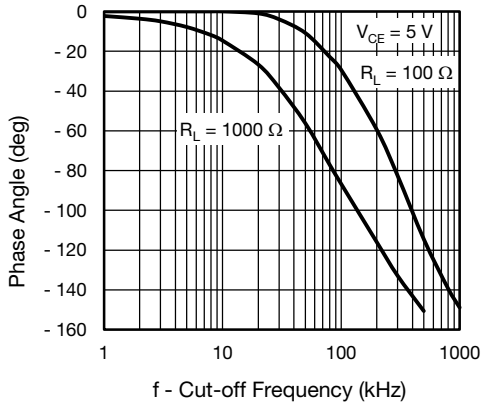


Fig. 13 - F_{CTR} vs. Phase Angle

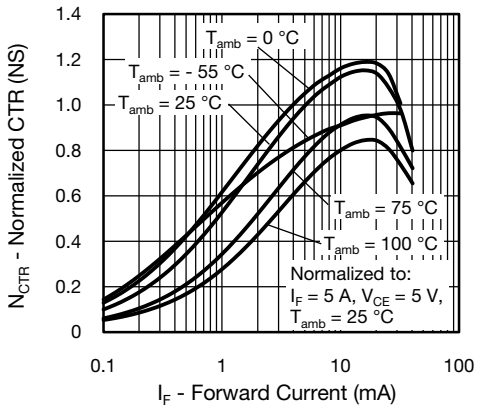


Fig. 11 - Normalized CTR (NS) vs. Forward Current

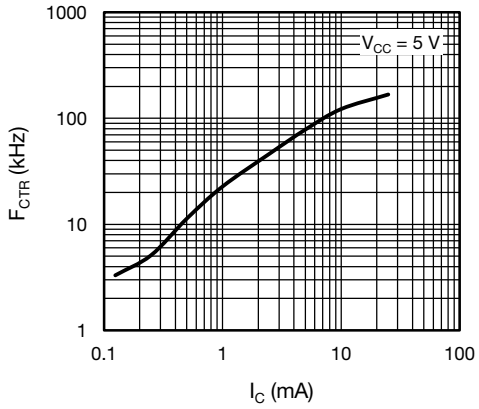


Fig. 14 - F_{CTR} vs. Collector Current

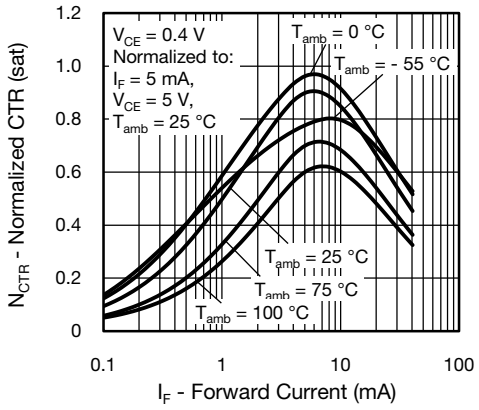


Fig. 12 - Normalized CTR (sat) vs. Forward Current

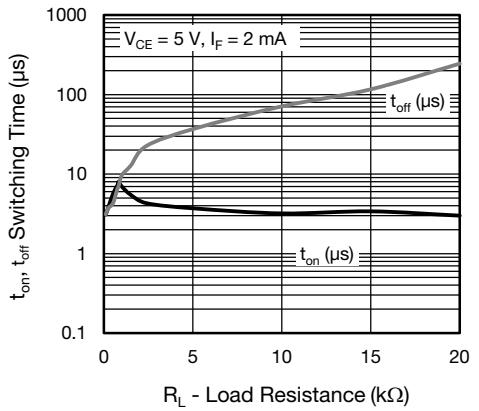
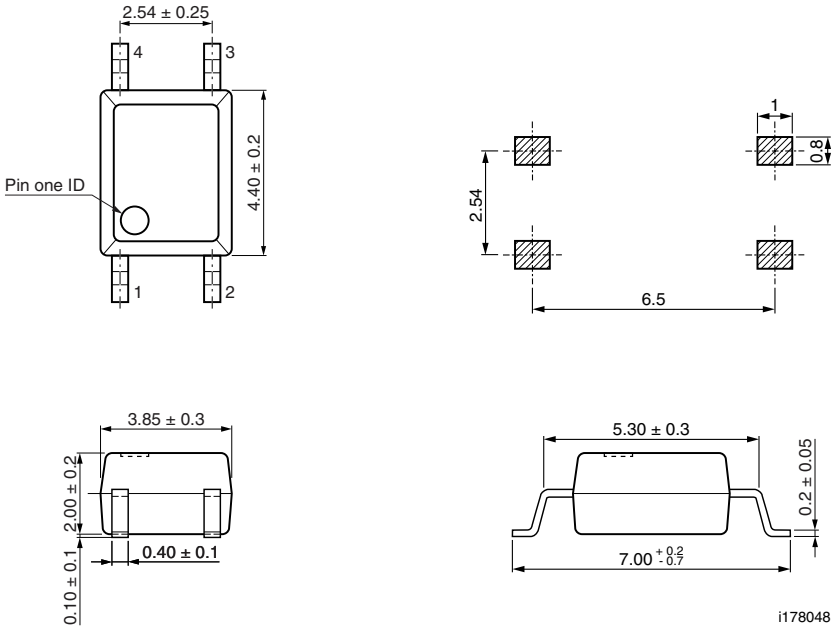
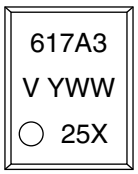


Fig. 15 - Switching Time vs. Load Resistance

PACKAGE DIMENSIONS in millimeters



PACKAGE MARKING (example of VOM617A-3X001T)



Notes

- Only option 1 is reflected in the package marking with the characters “X”.
- Tape and reel suffix (T) is not part of the package marking.

TAPE AND REEL DIMENSIONS in millimeters

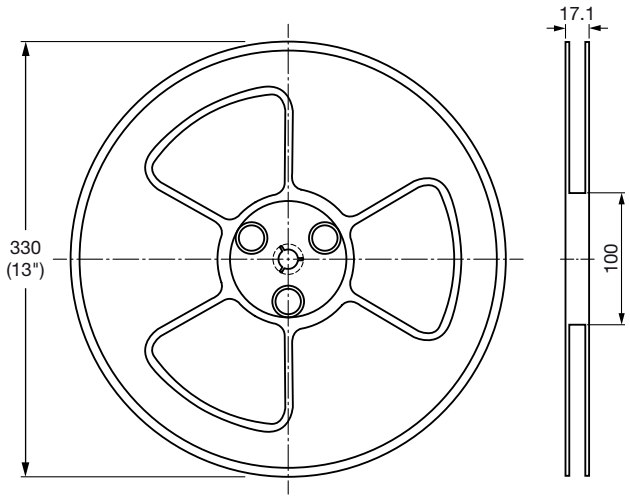


Fig. 16 - Reel Dimensions (3000 units per reel)

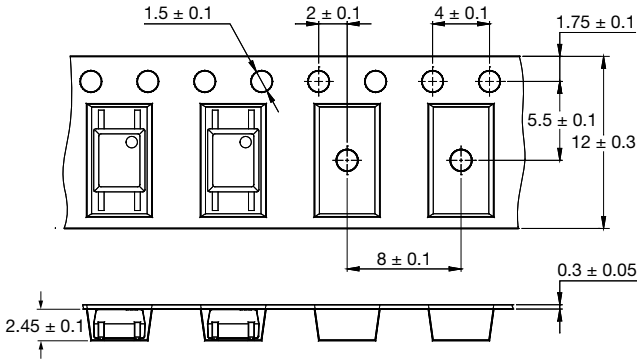


Fig. 17 - Tape Dimensions

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