





<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
<b>INPUT</b>				
Continuous forward current		$I_F$	60	mA
Peak reverse voltage		$V_R$	6.0	V
Power dissipation		$P_{diss}$	90	mW
Derate linearly from 25 °C			0.9	mW/°C
<b>OUTPUT</b>				
Collector emitter voltage		$V_{CE}$	70	V
Collector current		$I_C$	50	mA
	$t < 1.0\text{ ms}$	$I_C$	100	mA
Power dissipation		$P_{diss}$	150	mW
Derate linearly from 25 °C			1.5	mW/°C
<b>COUPLER</b>				
Isolation test voltage		$V_{ISO}$	4000	$V_{RMS}$
Operating temperature		$T_{amb}$	-55 to +110	°C
Total package dissipation (LED and detector)		$P_{tot}$	240	mW
Storage temperature		$T_{stg}$	-55 to +150	°C
Soldering temperature <sup>(1)</sup>	Max. 10 s, dip soldering distance to seating plane <sup>3</sup> 1.5 mm	$T_{sld}$	260	°C
Derate linearly from 25 °C			2.4	mW/°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

<sup>(1)</sup> Refer to reflow profile for soldering conditions for surface mounted devices (SOP / SOIC)

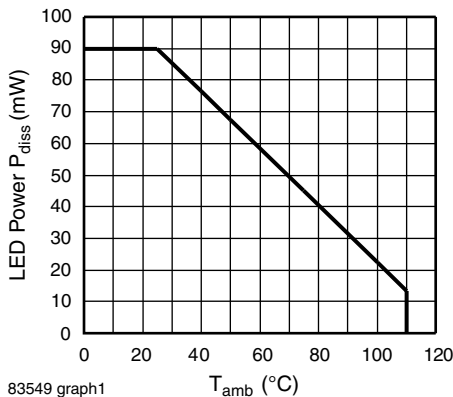


Fig. 1 - Input Power Dissipation (LED) vs. Ambient Temperature

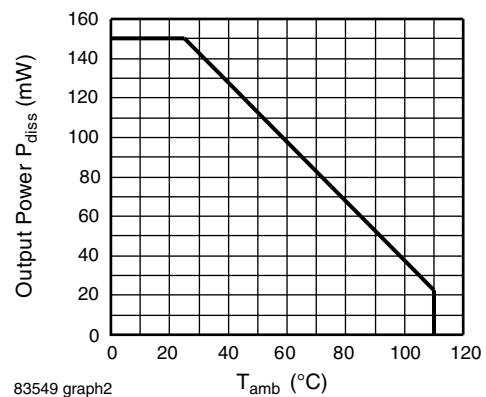


Fig. 2 - Output Power Dissipation vs. Ambient Temperature

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
<b>INPUT</b>							
Forward voltage	$I_F = 10\text{ mA}$		$V_F$	-	1.3	1.5	V
Reverse current	$V_R = 6\text{ V}$		$I_R$	-	0.1	100	$\mu\text{A}$
Capacitance	$V_R = 0\text{ V}$		$C_I$	-	13	-	pF
<b>OUTPUT</b>							
Collector emitter leakage current	$V_{CE} = 10\text{ V}$		$I_{CEO}$	-	5.0	50	nA
Collector emitter breakdown voltage	$I_C = 100\text{ }\mu\text{A}$		$BV_{CEO}$	70	-	-	V
Emitter collector breakdown voltage	$I_E = 100\text{ }\mu\text{A}$		$BV_{ECO}$	7.0	10	-	V
Collector base breakdown current			$BV_{CBO}$	70	-	-	V
Saturation voltage, collector emitter	$I_C = 2\text{ mA}, I_F = 10\text{ mA}$		$V_{CEsat}$	-	-	0.4	V
<b>COUPLER</b>							
DC current transfer ratio	$I_F = 10\text{ mA}, V_{CE} = 5.0\text{ V}$	IL1206AT	CTR	63	-	125	%
		IL1207AT	CTR	100	-	200	%
		IL1208AT	CTR	100	-	320	%
	$I_F = 1.0\text{ mA}, V_{CE} = 5.0\text{ V}$	IL1206AT	CTR	22	40	-	%
		IL1207AT	CTR	34	60	-	%
		IL1208AT	CTR	56	95	-	%
Capacitance (input to output)			$C_{IO}$	-	0.5	-	pF

**Note**

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

<b>SWITCHING CHARACTERISTICS</b>							
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Turn-on time	$I_C = 2\text{ mA}, R_L = 100\text{ }\Omega, V_{CC} = 10\text{ V}$	$t_{on}$	-	3.0	-	$\mu\text{s}$	
Turn-off time	$I_C = 2\text{ mA}, R_L = 100\text{ }\Omega, V_{CC} = 10\text{ V}$	$t_{off}$	-	3.0	-	$\mu\text{s}$	

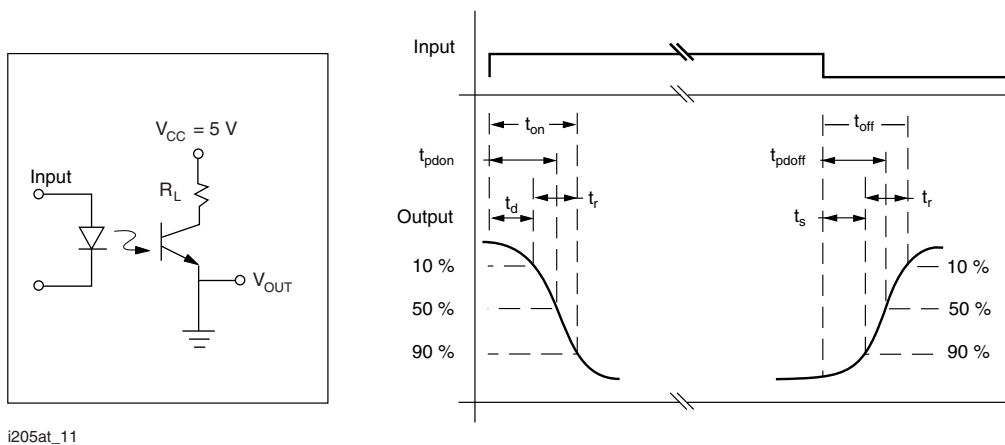


Fig. 1 - Switching Test Circuit

SAFETY AND INSULATION RATINGS						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Climatic classification	According to IEC 68 part 1		-	55 / 110 / 21	-	
Pollution degree (DIN VDE 0109)			-	2.0	-	
Comparative tracking index		CTI	175	-	399	
$V_{IOTM}$	DIN IEC 112 / VDE 0303 part 1, group IIIa per DIN VDE 6110 175 399	$V_{IOTM}$	6000	-	-	V
$V_{IORM}$		$V_{IORM}$	560	-	-	V
Resistance (input to output)		$R_{IO}$	-	$10^{12}$	-	$\Omega$
$P_{SI}$			-	-	350	mW
$I_{SI}$			-	-	150	mA
$T_{SI}$			-	-	165	$^{\circ}C$
Creepage distance			4.0	-	-	mm
Clearance distance			4.0	-	-	mm

**Note**

- As per IEC 60747-5-2, §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

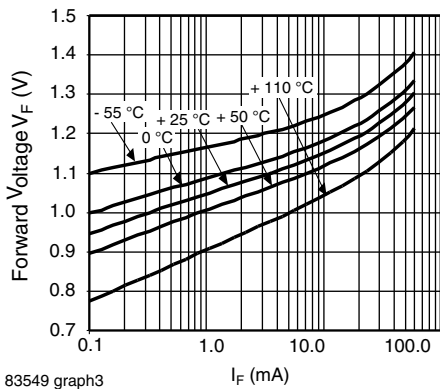
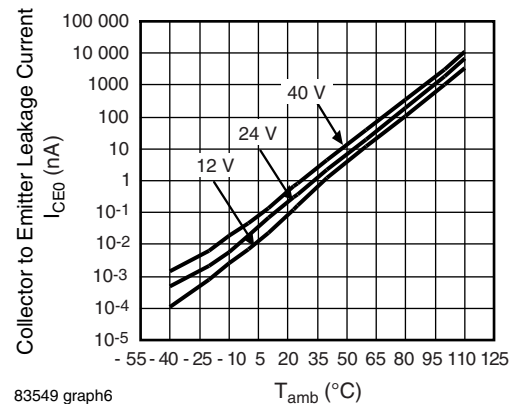
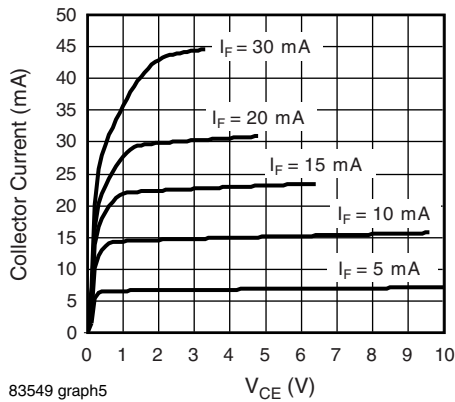
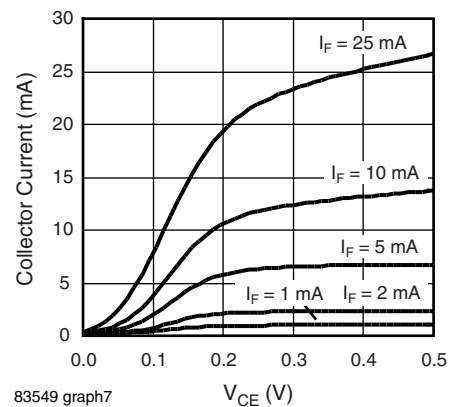
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25^{\circ}C$ , unless otherwise specified)

 Fig. 2 - Diode Forward Voltage  $V_F$  vs. Forward Current


Fig. 4 - Collector to Emitter Current vs. Ambient Temperature


 Fig. 3 -  $I_C$  (non-saturated) vs.  $V_{CE}$ 

 Fig. 5 -  $I_C$  (saturated) vs.  $V_{CE}$

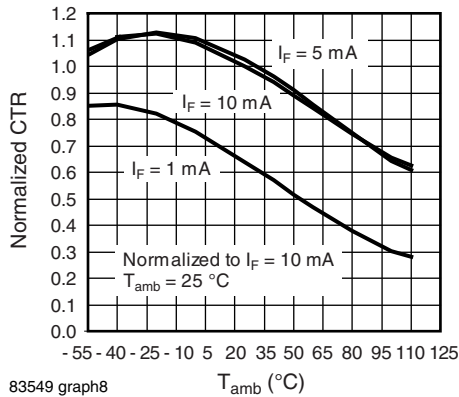


Fig. 6 - CTR Normalized to  $I_F = 10$  mA vs. Ambient Temperature, (Saturated,  $V_{CE} = 0.4$  V)

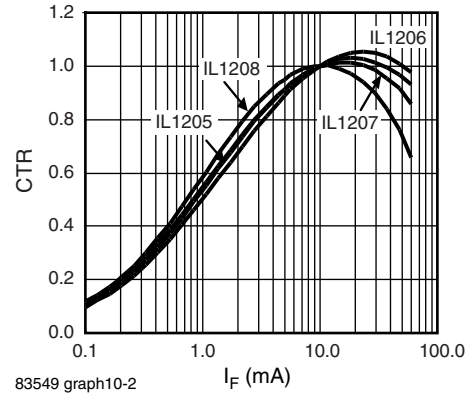


Fig. 9 - CTR vs.  $I_F$ , ( $V_{CE} = 5$  V,  $T_{amb} = 25$  °C) Normalized to  $I_F = 10$  mA,  $T_{amb} = 25$  °C

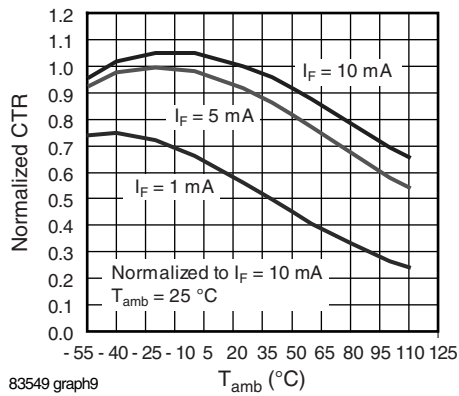


Fig. 7 - CTR Normalized to  $I_F = 10$  mA vs. Ambient Temperature, (Non-Saturated,  $V_{CE} = 5$  V)

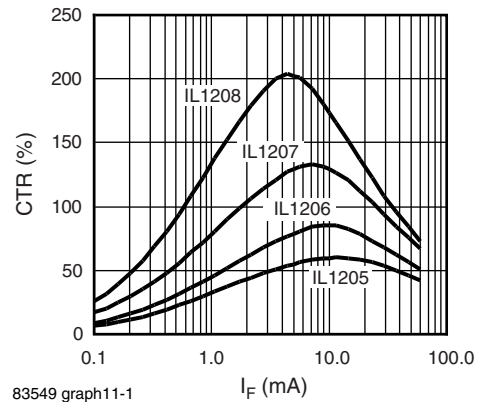


Fig. 10 - CTR vs.  $I_F$  Saturated, ( $V_{CE} = 0.4$  V,  $T_{amb} = 25$  °C)

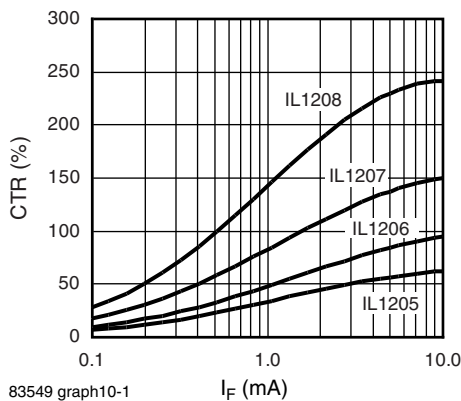


Fig. 8 - CTR vs.  $I_F$ , ( $V_{CE} = 5$  V,  $T_{amb} = 25$  °C) (Not Normalized)

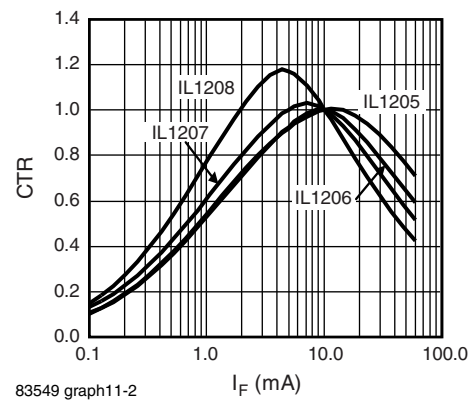


Fig. 11 - CTR vs.  $I_F$  Saturated, Normalized to  $I_F = 10$  mA,  $T_{amb} = 25$  °C

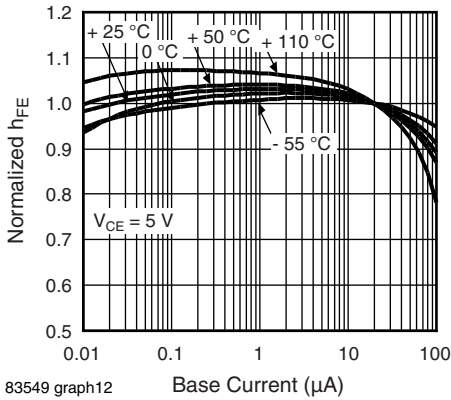


Fig. 12 - Normalized  $h_{FE}$  vs. Base Current and  $T_{amb}$  (Non-Saturated Condition)

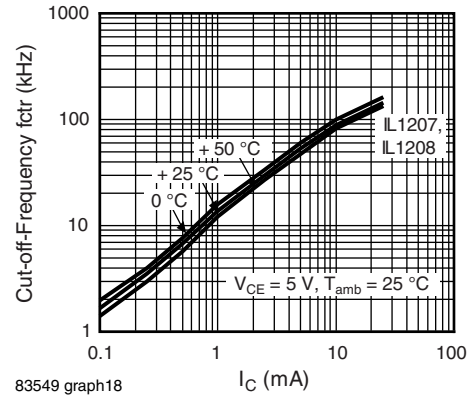


Fig. 15 - Cut-Off-Frequency (-3 dB) vs. Collector Current

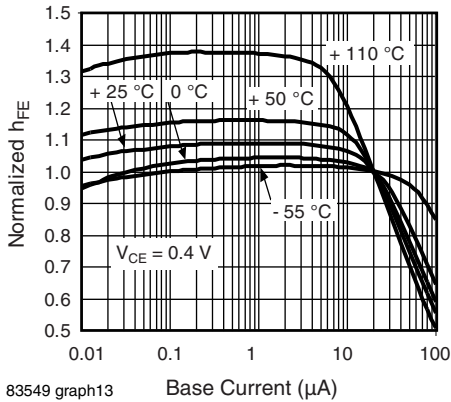


Fig. 13 - Normalized  $h_{FE}$  vs. Base Current and  $T_{amb}$  (Saturated Condition)

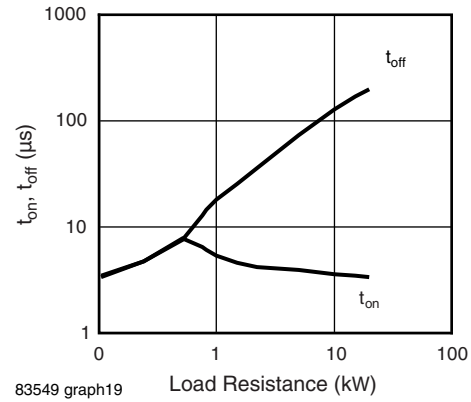


Fig. 16 - Switching Time  $t_{on}$ ,  $t_{off}$  vs. Load Resistance

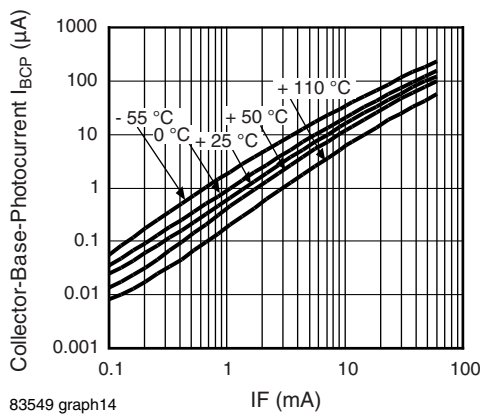


Fig. 14 - Collector Base Photocurrent vs.  $I_F$

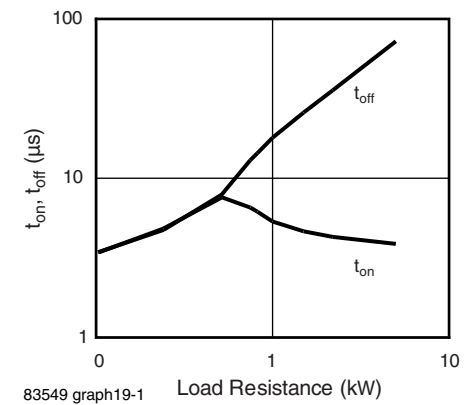


Fig. 17 - Switching Time  $t_{on}$ ,  $t_{off}$  vs. Load Resistance (100  $\Omega$  to 5000  $\Omega$ )

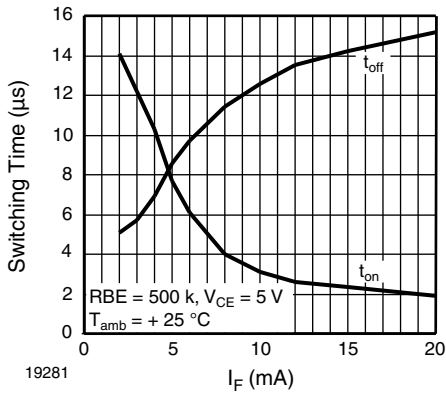


Fig. 18 - Switching Time vs.  $I_F$

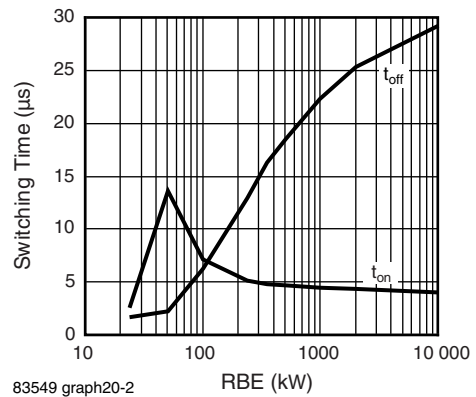
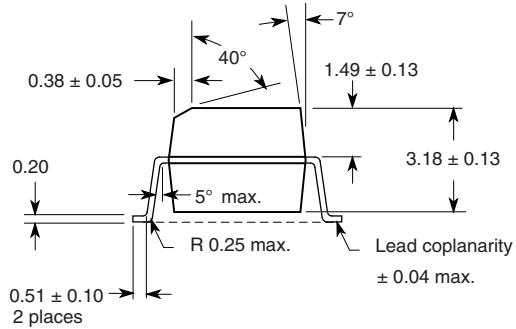
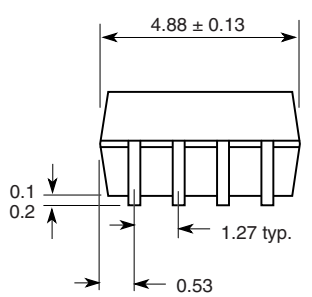
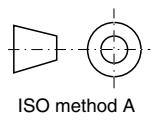
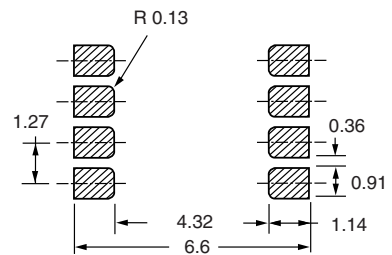
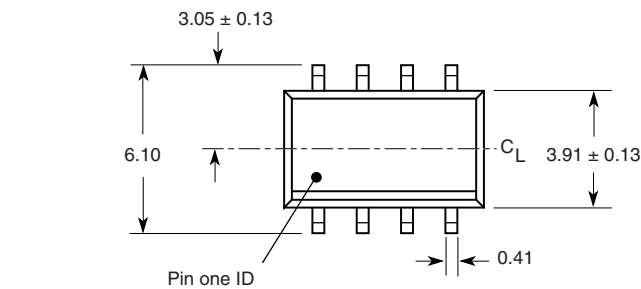


Fig. 19 - Switching Time vs. RBE,  $I_F = 10$  mA

**PACKAGE DIMENSIONS** in millimeters



i178003



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