



ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
INPUT				
Reverse voltage		V _R	6	V
DC forward current		I _F	60	mA
Surge forward current	t _p ≤ 10 ms	I _{FSM}	2.5	A
Power dissipation		P _{diss}	100	mW
OUTPUT				
Collector emitter voltage		V _{CEO}	70	V
Emitter collector voltage		V _{ECO}	7	V
Collector current		I _C	50	mA
	t _p ≤ 10 ms	I _C	100	mA
Total power dissipation		P _{diss}	150	mW
COUPLER				
Isolation test voltage between emitter and detector		V _{ISO}	5300	V _{RMS}
Creepage distance			≥ 7	mm
Clearance distance			≥ 7	mm
Isolation thickness between emitter and detector Comparative tracking index per DIN IEC 112/VDE 0303, part 1		CTI	≥ 175	
Isolation resistance	V _{IO} = 500 V, T _{amb} = 25 °C	R _{IO}	≥ 10 ¹²	Ω
	V _{IO} = 500 V, T _{amb} = 100 °C	R _{IO}	≥ 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 distance to seating plane ≥ 1.5 mm	T _{slid}	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).

ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
INPUT							
Forward voltage	I _F = 60 mA		V _F	-	1.25	1.65	V
Reverse current	V _R = 6 V		I _R	-	0.01	10	μA
Capacitance	V _R = 0 V, f = 1 MHz		C _O	-	13	-	pF
Thermal resistance			R _{thja}	-	750	-	K/W
OUTPUT							
Collector emitter capacitance	V _{CE} = 5 V, f = 1 MHz		C _{CE}	-	5.2	-	pF
Thermal resistance			R _{thja}	-	500	-	K/W
Collector emitter saturation voltage	I _F = 10 mA, I _C = 2.5 mA		V _{CEsat}	-	0.25	0.4	V
Coupling capacitance			C _C	-	0.4	-	pF
COUPLER							
Collector emitter leakage current	V _{CEO} = 10 V	SFH615AA	I _{CEO}	-	10	100	nA
		SFH615AGB	I _{CEO}	-	10	100	nA
		SFH615AGR	I _{CEO}	-	10	100	nA
		SFH615AY	I _{CEO}	-	10	100	nA

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							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
I_C/I_F	$I_F = 5 \text{ mA}, V_{CE} = 5 \text{ V}$	SFH615AA	CTR	50	-	600	%
		SFH615AGB	CTR	100	-	600	%
		SFH615AGR	CTR	100	-	300	%
		SFH615AY	CTR	50	-	150	%

SWITCHING CHARACTERISTICS							
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Turn-on time	$I_F = 5 \text{ mA}$	t_{on}	-	2	-	μs	
Turn-off time	$I_F = 5 \text{ mA}$	t_{off}	-	25	-	μs	

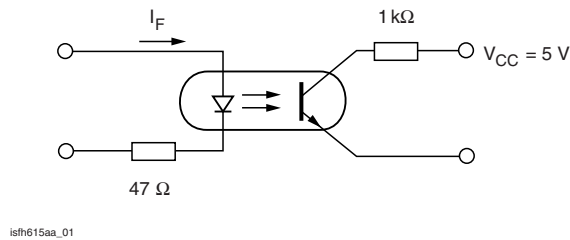
TYPICAL CHARACTERISTICS ($T_{amb} = 25 \text{ }^\circ\text{C}$, unless otherwise specified)


Fig. 1 - Switching Operation (with saturation)

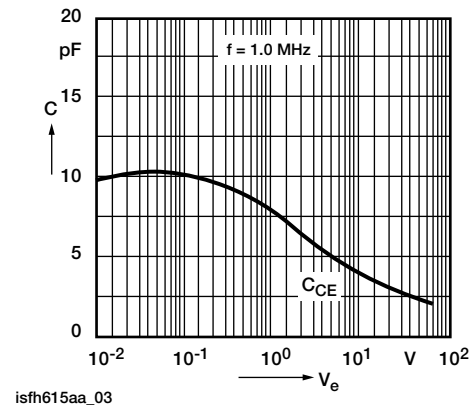


Fig. 3 - Transistor Capacitance (typ.) vs. Collector Emitter Voltage

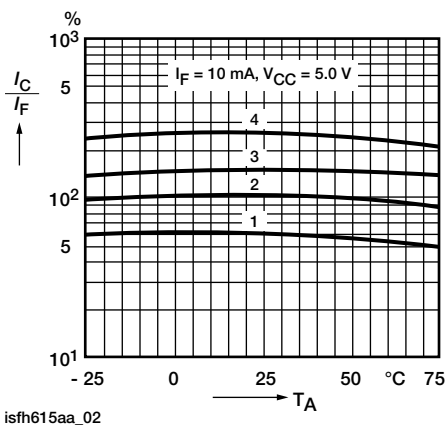


Fig. 2 - Current Transfer Ratio (typ.) vs. Temperature

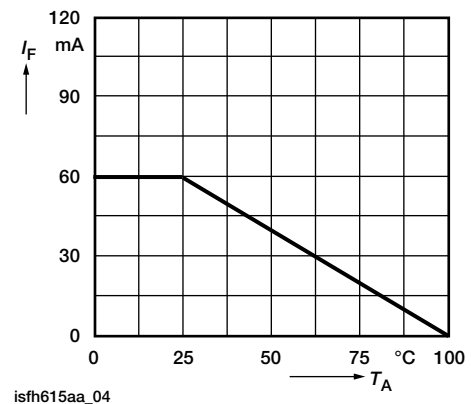


Fig. 4 - Permissible Diode Forward Current vs. Ambient Temperature

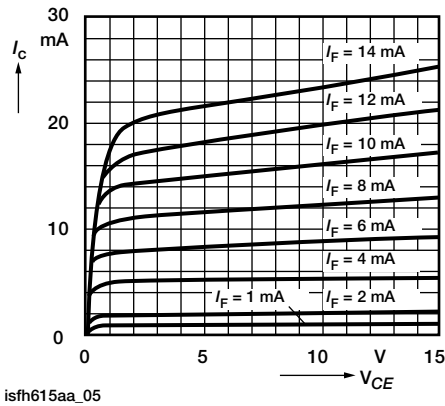


Fig. 5 - Output Characteristics (typ.) Collector Current vs. Collector Emitter Voltage

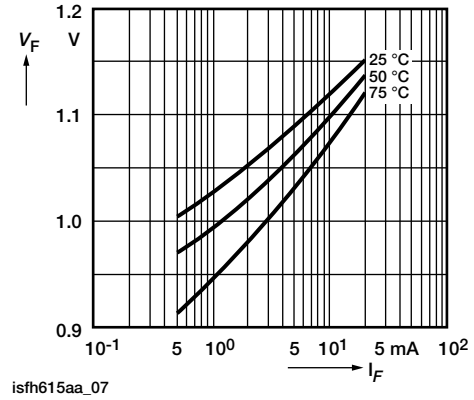


Fig. 7 - Diode Forward Voltage (typ.) vs. Forward Current

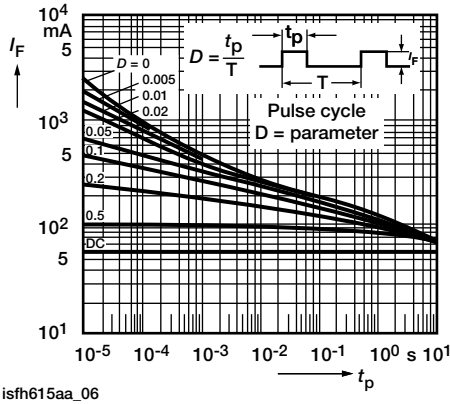


Fig. 6 - Permissible Pulse Handling Capability Forward Current vs. Pulse Width

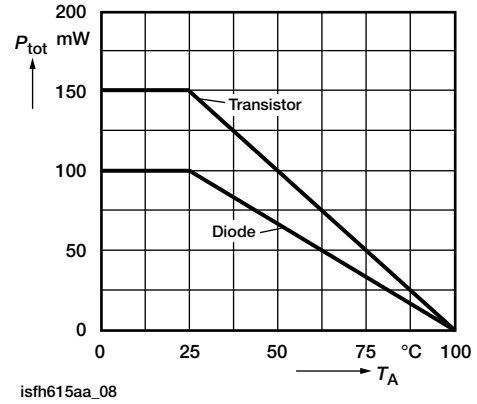
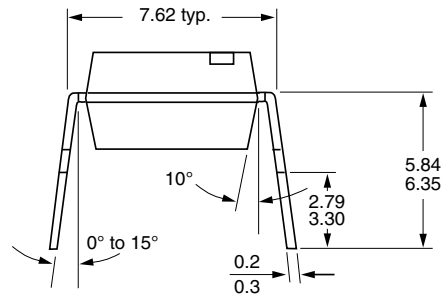
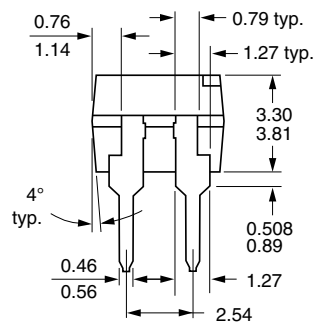
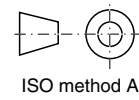
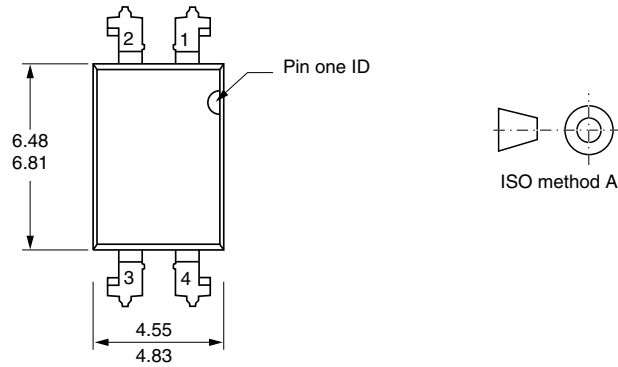


Fig. 8 - Permissible Power Dissipation vs. Temperature

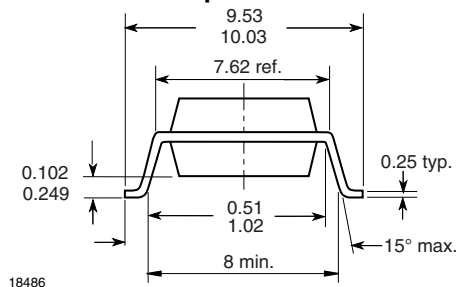


PACKAGE DIMENSIONS in inches (millimeters)



i178027

Option 9



18486



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