

Single Channel, AC/DC Sensing Input, Phototransistor Output in Half-Pitch Mini-Flat 4-Pin Package

FODM214, FODM217 Series

The FODM217 series consist of a gallium arsenide infrared emitting diode driving a phototransistor. The FODM214 series consist of two gallium arsenide infrared emitting diodes connected in inverse parallel for AC operation. Both were built in a compact, half-pitch, mini-flat, 4-pin package. The lead pitch is 1.27 mm.

Features

- Current Transfer Ratio Ranges from 20 to 600%
 - at $I_F = \pm 1 \text{ mA}$, $V_{CE} = 5 \text{ V}$, $T_A = 25^\circ\text{C}$
 - ◆ FODM214 – 20 to 400%
 - ◆ FODM214A – 50 to 250%
 - at $I_F = 5 \text{ mA}$, $V_{CE} = 5 \text{ V}$, $T_A = 25^\circ\text{C}$
 - ◆ FODM217A – 80 to 160%
 - ◆ FODM217B – 130 to 260%
 - ◆ FODM217C – 200 to 400%
 - ◆ FODM217D – 300 to 600%
- Safety and Regulatory Approvals:
 - ◆ UL1577, 3750 VAC_{RMS} for 1 min
 - ◆ DIN EN/IEC60747-5-

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ELECTRICAL CHARACTERISTICS $T_A = 25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Device	Conditions	Min.	Typ.	Max.	Units
EMITTER							
V_F	Forward Voltage	FODM214	$I_F = \pm 20 \text{ mA}$		1.2	1.4	V
		FODM217	$I_F = 20 \text{ mA}$				
I_R	Reverse Current	FODM217	$V_R = 4 \text{ V}$			10	μA
C_T	Terminal Capacitance	All	$V = 0 \text{ V}, f = 1 \text{ kHz}$		30	250	pF
DETECTOR							
BV_{CEO}	Collector–Emitter Breakdown Voltage	All					

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TYPICAL CHARACTERISTICS

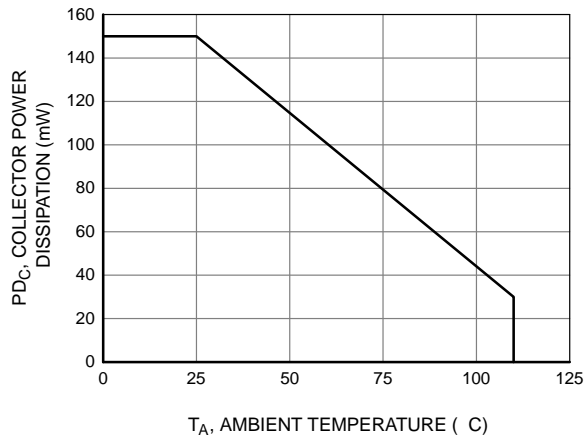


Figure 1. Collector Power Dissipation vs. Ambient Temperature

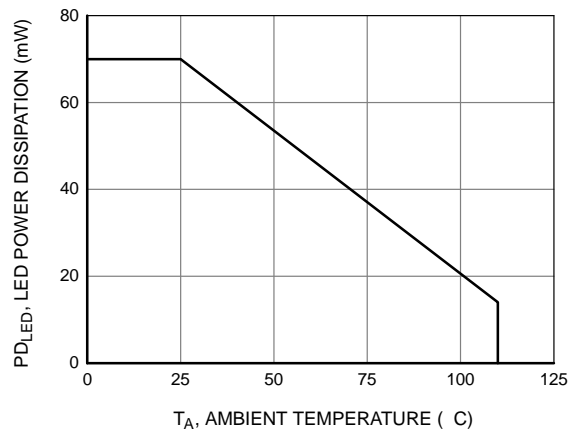


Figure 2. LED Power Dissipation vs. Ambient Temperature

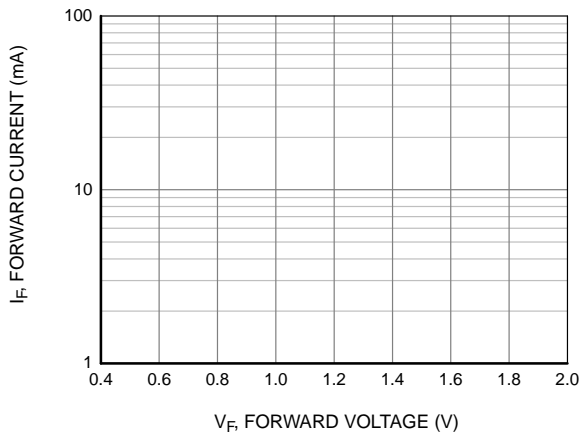


Figure 3. Forward Current vs. Forward Voltage

Figure 4. Forward Voltage Temperature Coefficient vs. Forward Current

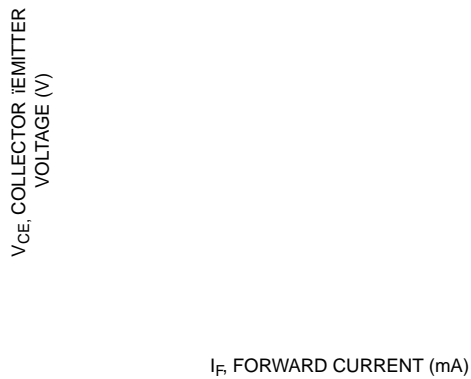


Figure 5. Collector Emitter Voltage vs. Forward Current

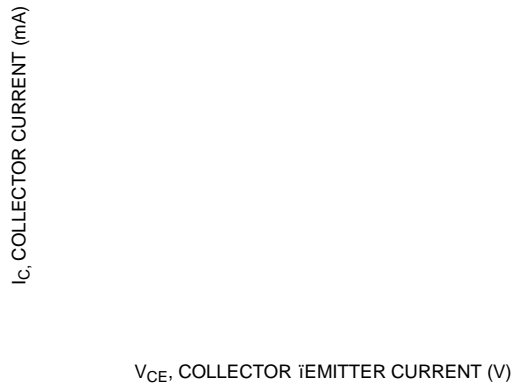


Figure 6. Collector Current vs. Collector Emitter Voltage

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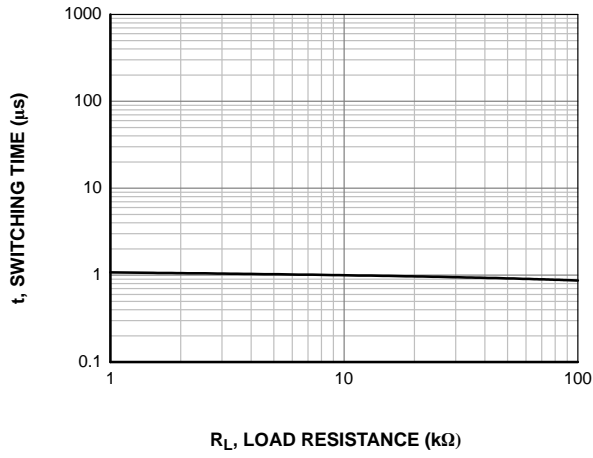


Figure 13. Switching Time vs. Load Resistance

T_A, AMBIENT TEMPERATURE (°C)

Figure 14. Switching Time vs. Ambient Temperature

REFLOW PROFILE

Figure 16. Reflow Profile

Profile Feature	Pb-free Assembly Profile
Temperature Min. (T _{min})	150°C
Temperature Max. (T _{max})	200°C
	60–120 seconds
	3°C/second max.
Soak Temperature (T _L)	217°C
(t _L) Maintained Above (T _L)	60–150 seconds
Body Package Temperature	260°C +0°C / -5°C
(t _P) within 5°C of 260°C	8 minutes
Cool-down Rate (T _P to T _L)	
25°C to Peak Temperature	

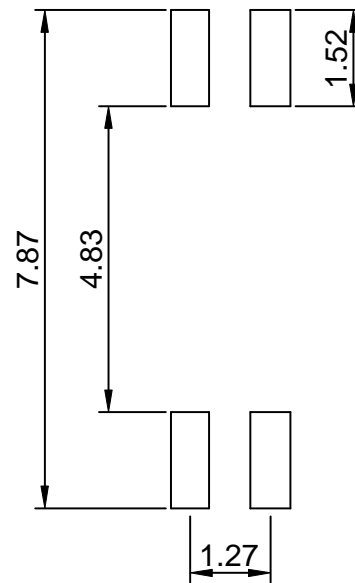
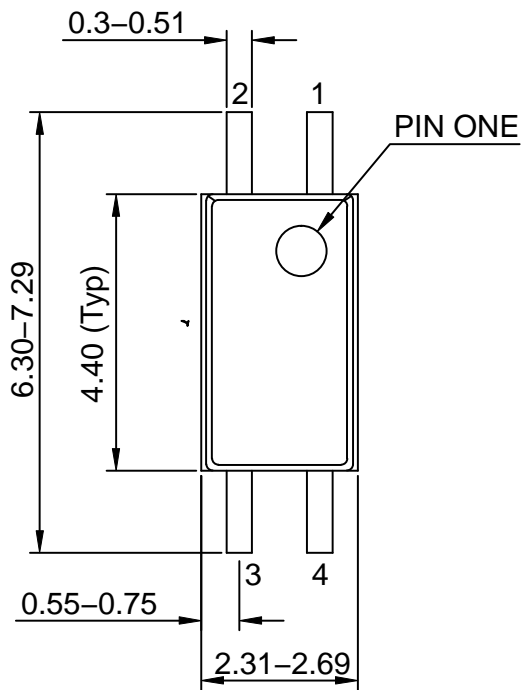
SEE TABLE 1 FOR REFLUXING INFORMATION (Note 5)

Package

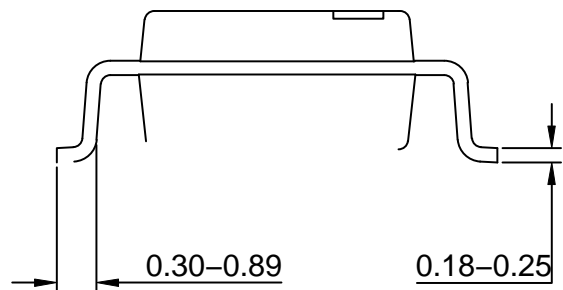
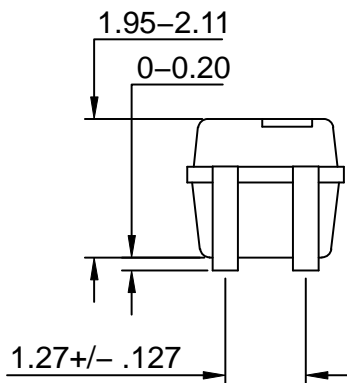
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PACKAGE DIMENSIONS

MFP4 2.5x4.4, 1.27P
CASE 100AL
ISSUE O



LAND PATTERN RECOMMENDATION



NOTES:

- A) NO STANDARD APPLIES TO THIS PACKAGE
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSION

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