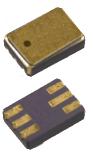
JAN/JANTX/JANTXV 4N47U, 4N48U, 4N49U



Features:

- Surface Mount (SM), Leadless Chip Carrier (LCC)
- 1 kV electrical isolation
- Base contact provided for conventional transistor biasing
- JANTX and JANTXV devices are processed to MIL-PRF-19500



Description:

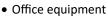
Each isolator in this series consists of an infrared emitting diode and a NPN silicon phototransistor, which are mounted in a hermetically sealed Surface Mount, 6 Pin package. Devices are designed for military and/or harsh environments.

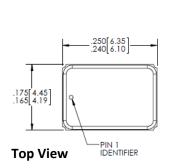
The JAN / JANTX / JANTXV 4N47U, 4N48U and 4N49U devices are processed to MIL-PRF-19500/548. This series of 4N products are JEDEC registered, DSCC qualified.

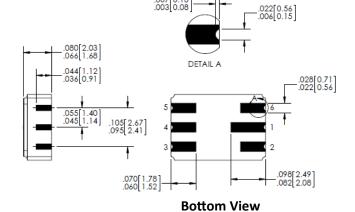
Please contact your local representative for more information.

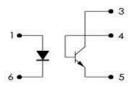
Applications:

- Military equipment
- High-Reliability environments
- High voltage isolation between input and output
- Electrical isolation in dirty environments
- Industrial equipment
- Medical equipment









DIMENSIONS ARE IN INCHES [MM]

Pin #	LED	Pin #	Transistor
3	Collector	2	N/A
4	Base	1	Anode
5	Emitter	6	Cathode

General Note





Electrical Specifications

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Storage Temperature Range	-55° C to +150° C
Operating Temperature Range	-55° C to +125° C
Input-to-Output Isolation Voltage	± 1.00 kVDC ⁽¹⁾
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	260° C ⁽²⁾

Input Diode

Forward DC Current (65° C or below)	40 mA
Reverse Voltage	2 V
Power Dissipation	60 mW ⁽³⁾

Output Phototransistor:

Continuous Collector Current	50 mA
Collector-Emitter Voltage	40 V
Collector-Base Voltage	45 V
Emitter-Base Voltage	7.0 V
Power Dissipation	300 mW ⁽⁴⁾

Notes:

- 1. Measured with input leads shorted together and output leads shorted together.
- 2. RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- 3. Derate linearly 1.0 mW/° C above 65° C.
- 4. Derate linearly 3.0 mW/° C above 25° C.

Ordering Information					
Part Number	Isolation Voltage (kV)	I _F (mA) Typ / Max	V _{CE} (Volts) Max	Processing MIL-PRF-19500	
JAN4N47U					
JANTX4N47U					
JANTXV4N47U					
JAN4N48U					
JANTX4N48U	1	1/40	40	548	
JANTXV4N48U					
JAN4N49U					
JANTX4N49U					
JANTXV4N49U					

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Electrical Characteristics (T_A = 25°C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Dioc	le					
V_{F}	Forward Voltage	0.80 1.00 0.70	- - -	1.50 1.70 1.30	V	I _F = 10.0 mA I _F = 10.0 mA, T _A = -55° C ⁽¹⁾ I _F = 10.0 mA, T _A = 100° C ⁽¹⁾
I _R	Reverse Current	-	-	100	μА	V _R = 2.0 V
Output Ph	ototransistor	·				
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	40	-	-	V	I _C = 1.0 mA, I _B = 0, I _F = 0
V _{(BR)CBO}	Collector-Base Breakdown Voltage	45	-	-	V	I _C = 100 μA, I _B = 0, I _F = 0
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	7	-	-	V	I _E = 100 μA, I _C = 0, I _F = 0
I _{C(OFF)} ¹	Collector-Emitter Dark Current	-	-	100	nA	V _{CE} = 20 V, I _B = 0, I _F = 0
I _{C(OFF)} ²	Collector-Emitter Dark Current	-	-	100	μА	$V_{CE} = 20 \text{ V, } I_B = 0, I_F = 0, T_A = 100^{\circ} \text{ C}^{(1)}$
I _{CB(OFF)}	Collector-Base Dark Current	-	-	10	nA	V _{CB} = 20 V, I _E = 0, I _F = 0
Coupled						
	On-State Collector Current JAN / JANTX / JANTXV 4N47 [U]	0.50 0.70 0.50	- - -	- - - 5		$I_{F} = 1.0 \text{ mA}, V_{CE} = 5.0 \text{ V}, I_{B} = 0$ $I_{F} = 2.0 \text{ mA}, V_{CE} = 5.0 \text{ V}, I_{B} = 0, T_{A} = -55^{\circ} \text{ C}^{(1)}$ $I_{F} = 2.0 \text{ mA}, V_{CE} = 5.0 \text{ V}, I_{B} = 0, T_{A} = 100^{\circ} \text{ C}^{(1)}$ $I_{F} = 1.0 \text{ mA}, V_{CE} = 5.0 \text{ V}, I_{B} = 0$
I _{C(ON)}	JAN / JANTX / JANTXV 4N48 [U]	1.40 1.00	-	-	mA	$I_F = 2.0$ mA, $V_{CE} = 5.0$ V, $I_B = 0$, $T_A = -55^{\circ}$ C ⁽¹⁾ $I_F = 2.0$ mA, $V_{CE} = 5.0$ V, $I_B = 0$, $T_A = 100^{\circ}$ C ⁽¹⁾
	JAN / JANTX / JANTXV 4N49 [U]	2.00 2.80 2.00	- - -	10 - -		$\begin{split} I_F &= 1.0 \text{ mA, } V_{CE} = 5.0 \text{ V, } I_B = 0 \\ I_F &= 2.0 \text{ mA, } V_{CE} = 5.0 \text{ V, } I_B = 0, T_A = -55^{\circ} \text{ C}^{(1)} \\ I_F &= 2.0 \text{ mA, } V_{CE} = 5.0 \text{ V, } I_B = 0, T_A = 100^{\circ} \text{ C}^{(1)} \end{split}$
I _{CB(ON)}	On-State Collector Base	30	-	-	μΑ	V _{CB} = 5 V, I _E = 0, I _F = 10 mA
V _{CE(SAT)}	Collector-Emitter Saturation Voltage JAN / JANTX / JANTXV 4N47 [U] JAN / JANTX / JANTXV 4N48 [U] JAN / JANTX / JANTXV 4N49 [U]			0.30 0.30 0.30	V	I _F = 2.0 mA, I _C = 0.5 mA, I _B = 0 I _F = 2.0 mA, I _C = 1.0 mA, I _B = 0 I _F = 2.0 mA, I _C = 2.0 mA, I _B = 0
H _{FE}	DC Current Gain	100	-	-	V	V _{CE} = 5.0 V , I _C = 10.0 mA, I _F = 0 mA
R _{IO}	Resistance (Input-to-Output)	10 ¹¹	-	-	Ω	V _{I-O} = ± 1000 VDC ⁽³⁾
C _{IO}	Capacitance (Input-to-Output)	-	-	5	pF	V _{I-O} = 0 V, f = 1.0 MHz ⁽³⁾
T_R,T_F	Rise and Fall Time	-	-	20	μs	V_{CC} = 10.0 V , I_F = 5.0 mA, R_L = 100 Ω

Notes:

- 1. Guaranteed but not tested.
- 2. Sample tested, LTPD = 10.
- 3. Measured with input leads shorted together and output leads shorted together.

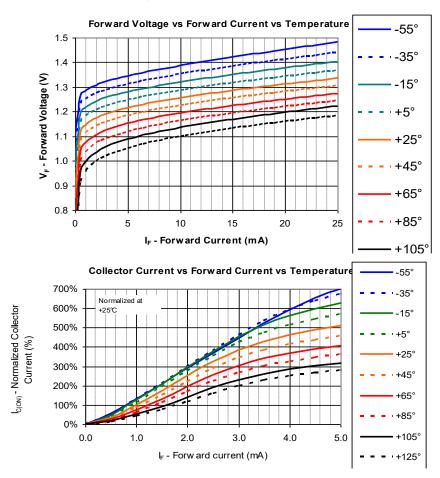
General Note

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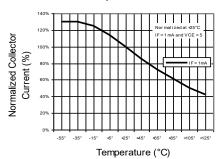




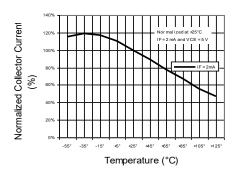
Typical Performance Curves



Normalized Collector Current Vs Temperature



Normalized Collector Current Vs
Temperature



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