

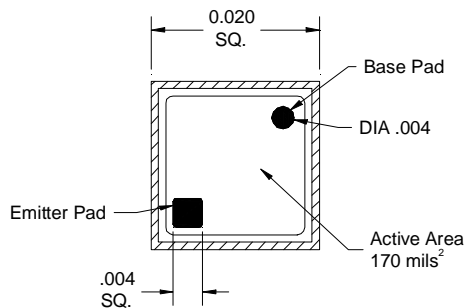
.021 x .021 Phototransistor Medium-High Gain

ET0421

- ### FEATURES
- Spectrally matched to GaAs and GaAlAs emitters
 - High sensitivity
 - High gain
 - Collector voltage to 30V

DESCRIPTION

The ET0421 phototransistor is fabricated using silicon planar diffused technology. The die is silicon nitride passivated for reliability, and anti-reflection coated to enhance light absorption. Standard thickness is 15 mils. Die can be probed to special beta requirements, and sawed in various array configurations. Applications include optical encoders and industrial controls.



1. Emitter and Base bond pads are aluminum.
2. Backside is metallized with gold.
3. Arrayed die are on .021 centers in X and Y.
4. Dimensions are in inches or mils.

**Photo not yet
available...**

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Max.	Units	Ref.
Operating Temperature Range	T _A	-60	125	°C	(Note 1)
Collector-Emitter Voltage	V _{CE}	-	30	V	
Emitter-Collector Voltage	V _{EC}	-	6	V	
Power Dissipation	P _D	-	50	mW	(Note 1)
Continuous Collector Current	I _C	-	50	mA	(Note 1)

ETIC RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME TO IMPROVE THE DESIGN AND TO SUPPLY THE BEST PRODUCT.

ELECTRICAL CHARACTERISTICS

Unless otherwise specified, typical values given at $V_{CE}=5V$, $T_A = 25^{\circ}C$, $h=0mW/cm^2$.

Parameters	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Collector Dark Current	I_D	-	<5	30	nA	$V_{CE} = 10V$
Collector-Emitter Breakdown Voltage	V_{CE}	30	-	-	V	$I_C = 100\mu A$
Collector-Base Breakdown Voltage	V_{CB}	50	-	-	V	$I_C = 100\mu A$
Emitter-Base Breakdown Voltage	V_{EB}	6.0	-	-	V	$I_E = 100nA$
Collector-Emitter Saturation Voltage	V_{SAT}	-	80	235	mV	$I_C = 1mA$, $I_B = 40\mu A$, (Note 2)
Emitter-Collector Breakdown Voltage	V_{EC}	6.0	-	-	V	$I_C = 100\mu A$
Responsivity	R	-	.32	-	A/W	$h = 5 mW/cm^2$ (Note 3)
Current Gain	h_{FE}	800	-	1600	-	$I_B = 1\mu A$ (Note 2)

AC SWITCHING CHARACTERISTICS

Values given at $V_{CE} = 5V$, $T_A = 25^{\circ}C$, $R_L = 100$ ohms.

Parameters	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Rise Time	T_R	-	8	-	μs	(Note 3)
Fall Time	T_F	-	8	-	μs	(Note 3)

NOTES:

1. This value is very dependent on the thermal impedance of subsequent packaging techniques.
2. For test, base current is forced at base pad rather than created by illumination.
3. These values are typical for the process and are not tested.

ETIC RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME TO IMPROVE THE DESIGN AND TO SUPPLY THE BEST PRODUCT.

East Texas Integrated Circuits USA • 1221 W. Campbell Road Suite 115 • Richardson, Texas 75080 • Tel (972) 234-5656 • Fax (972) 234-5657
Visit our website at www.easttexasic.com, or send us email at sales@easttexasic.com.