

.060" NPN Phototransistor Chip**VTT-C60**

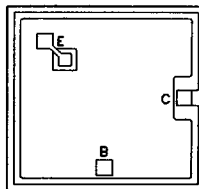
E G & G VACTEC

DESCRIPTION

EG&G Vactec fabricates its silicon photosensor chips using state-of-the-art planar diffusion technology. All chips are nitride passivated to ensure long term stability. Collector contact can be made through the backside of the chip. With some devices an additional collector contact is available on the top surface. Base and emitter contacts are available on the top surface of the chip.

A chromium/nickel metallization system, suitable for conductive epoxy die attach, is employed on the backside of the chip. Aluminum metallization is used for the bond pads on the top surface of the die.

Chips can be specially probed for current gain, breakdown voltage, dark current, etc., to satisfy a specific application. Please contact Vactec with your requirements.

CHIP DIMENSIONS Inch (mm)**CHIP 60T**

.060 (1.52) x .060 (1.52) x .017 (0.43) Thick
 .00257 in² (1.66 mm²) Exposed Sensitive Area
 Collector Contact is Also Back Side of Chip

ABSOLUTE MAXIMUM RATINGS ■

Maximum Temperatures

Storage Temperature: -65°C to 150°COperating Temperature: -65°C to 125°C

Nominal Maximum Continuous

Power Dissipation @ 25°C: 50 mW *

* Exact maximum power dissipation capabilities are determined by customer packaging and are not guaranteed by Vactec.

ELECTRO-OPTICAL CHARACTERISTICS @ 25°C (See also 60T curves, pg. 35)

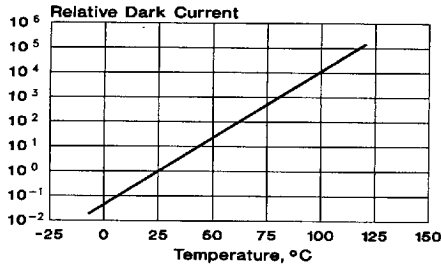
Symbol	Characteristic	Test Condition	Specification			Units
			Min.	Typ.	Max.	
H _{FE} (Beta)	dc Current Gain	I _B = 10 μA, V _{CE} = 5.0 V	200	500		
I _D	Dark Current	V _{CE} = 10 V, I _B = 0			100	nA
V _{BR} (CEO)	Collector Breakdown Voltage	I _C = 100 μA	40			Volts
V _{BR} (ECO)	Emitter Breakdown Voltage	I _E = 100 μA	5.0			Volts
V _{CE} (SAT)	Collector-Emitter Saturation Voltage	I _C = 1.0 mA, I _B = 50 μA			0.4	Volts
t _r , t _f	Rise / Fall Time	I _C = 1.0 mA, R _L = 100 Ω		8		μsec
S _P (C80)	Collector-Base Photometric Sensitivity	V _{CB} = 5.0 V, 2850 K		115		nA / fc
S _R (C80)	Collector-Base Radiometric Sensitivity	V _{CB} = 5.0 V, 940 nm		6.6		nA / (μW/cm ²)
C _J	Collector-Base Capacitance	V _{CB} = 5.0 V, 1 MHz		35		pF

60T Phototransistor Typical Characteristic Curves

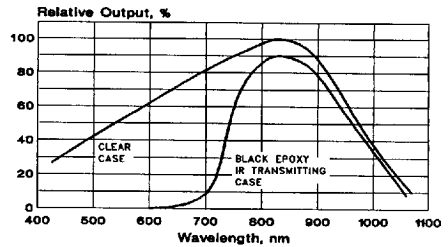
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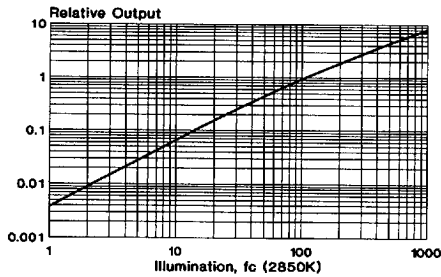
DARK CURRENT vs TEMPERATURE
(REFERRED TO 25°C)



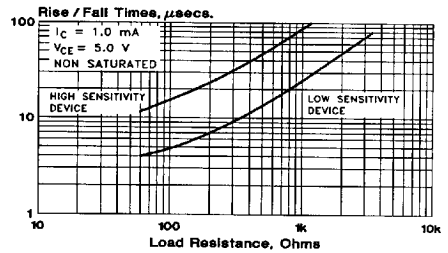
RELATIVE SPECTRAL RESPONSE
(REFERRED TO PEAK RESPONSE OF CLEAR CASE)



RELATIVE OUTPUT vs ILLUMINATION
(NORMALIZED AT 100 fc)



RESPONSE TIME



ANGULAR RESPONSE
TO-46 PACKAGES

