DEVICE	TYPE	Re A/W	» nm	I_{SC} (mA)
S1010	Standard	0.48	900	17.0
FR1010EPL	Infra-Red	0.45	900	11.5
VB1010EPL	Violet-Blue	0.48	900	21.0
GB1010EPL	Green Blaze	0.20	555	2.5

A series of spectral-response silicon photocells designed for unique product applications.

VIO-BLUE
Enhanced violet and blue response. Also can be used in U.V. detection because of high sensitivity to short wavelength radiation.

GREEN BLAZE
Photopic curve response for use in innumerable light response applications---with high reliability and low cost.

INFRA-R
Visible cut-off, high infrared response. Solves ambient light problems in IR activated photoelectric applications.

FEATURES
- Select spectral response
- No bias power source needed
- High temperature stability and high sensitivity through silicon construction
- Low noise
- High reliability
- A wide variety of sizes and packages, special geometries available

APPLICATIONS
- Photographic equipment
- Color, pattern recognition equipment
- Light discriminating systems

SPECTRA-BAND PHOTOCELLS
TOIs' special spectral response photocells are designed for the photographic industry, photometric instrumentation, and photoelectric control/switching applications.

MECHANICAL SPECIFICATIONS

Spectra-Band Cell Configurations					
		Part Number	Part Number	Part Number	Part Number
GREEN BLAZE		GB02505EPL	GB0505EPL	GB1010EPL	GB1020EPL
INFRA-R		FR02505EPL	FR0505EPL	FR1010EPL	FR1020EPL
VIO-BLUE		VB02505EPL	VB0505EPL	VB1010EPL	VB1020EPL
Package		Coated Cell	Coated Cell	Coated Cell	Coated Cell
Lead Termination		6" Length Std.	6" Length Std.	6" Length Std.	6" Length Std.
Cell Dimensions	In.	0.1 x 0.2	0.2 x 0.2	0.4 x 0.4	0.4 x 0.8
	Cm.	0.25 x 0.5	0.5 x 0.5	1.0 x 1.0	1.0 x 2.0
Active Area (Sq. Cm.)		0.1	0.2	0.9	1.8

INFRA-R SERIES

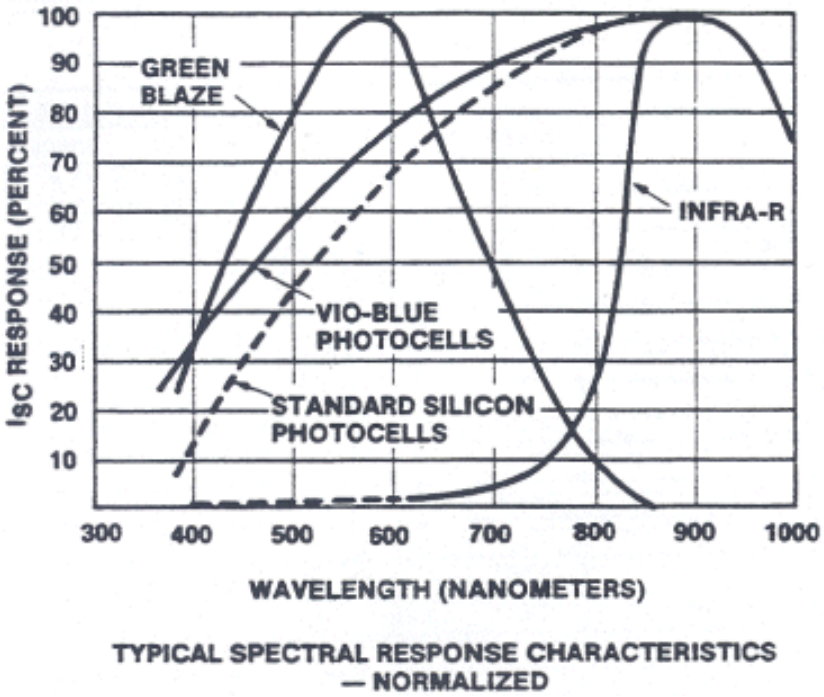
PARAMETER	SYMBOL	UNIT	TEST CONDITION	FR02505 SEPL	FR0505 SEPL	FR1010 EPL	FR1020 EPL
Short Circuit Current	I_{SC}	mA	100mW/cm^2 Am 1 Solar Radiation	1.3	2.6	11.5	23.0
Open Circuit Voltage	V_{OC}	Volts	100mW/cm^2 Am 1 Solar Radiation	0.55	0.55	0.55	0.55
Forward Voltage	V_F	Volts	I_F = 1 mA	0.50	0.50	0.45	0.40
Dark Current	I_D	¼A	V_R = 0.1 V	0.20	0.40	0.80	0.90
Capacitance	C_T	nF	V_R = 0 V	1.0	3.0	10.0	15.0
Responsivity	R_e	A/W	»p = 900 nm, V_R = 0	0.45	0.45	0.45	0.45

VIO-BLUE SERIES

PARAMETER	SYMBOL	UNIT	TEST CONDITION	VB02505 SEPL	VB0505 SEPL	VB1010 EPL	VB1020 EPL
Short Circuit Current	I_{SC}	mA	100mW/cm^2 Am 1 Solar Radiation	2.3	4.7	21.0	42.0
Open Circuit Voltage	V_{OC}	Volts	100mW/cm^2 Am 1 Solar Radiation	0.55	0.55	0.55	0.55
Forward Voltage	V_F	Volts	I_F = 1 mA	0.50	0.50	0.45	0.40
Dark Current	I_D	¼A	V_R = 0.1 V	0.20	0.40	0.80	0.90
Capacitance	C_T	nF	V_R = 0 V	1.0	3.0	10.0	15.0
Responsivity	R_e	A/W	»p = 900 nm, V_R = 0	0.48	0.48	0.48	0.48

GREEN-BLAZE SERIES

PARAMETER	SYMBOL	UNIT	TEST CONDITION	GB02505 SEPL	GB0505 SEPL	GB1010 EPL	GB1020 EPL
Short Circuit Current	I_{SC}	mA	100mW/cm^2 Am 1 Solar Radiation	0.27	0.55	2.5	5.0
Open Circuit Voltage	V_{OC}	Volts	100mW/cm^2 Am 1 Solar Radiation	0.47	0.47	0.47	0.47
Forward Voltage	V_F	Volts	I_F = 1 mA	0.50	0.45	0.45	0.40
Dark Current	I_D	¼A	V_R = 0.1 V	0.30	0.40	0.80	1.00
Capacitance	C_T	nF	V_R = 0 V	1.0	2.0	3.0	5.0
Responsivity	R_e	A/W	»p = 555 nm,	0.20	0.20	0.20	0.20



TYPICAL SPECTRAL RESPONSE CHARACTERISTICS — NORMALIZED

TYPICAL SHORT CIRCUIT CURRENT (I_{SC}) RESPONSE

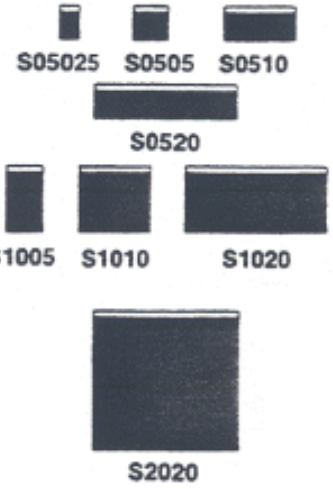
- Standard Silicon Photovoltaic Cell (at 900 nm) ~ 0.48 A/W
- Vio-Blue (at 900 nm) ~ 0.48 A/W
- Green Blaze (at 555 nm) ~ 0.20 A/W
- Infra-R (at 900 nm) ~ 0.45 A/W

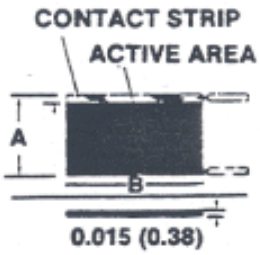
SILICON PHOTOCELL SENSORS

TOI silicon photocells are employed in photometer, switching, position detection, tape and disc EOT/BOT sensing, solar energy conversion, and other numerous applications. Silicon photosensors with special geometries, spectral response and switching characteristics, are available on a custom basis, and are widely used in the optical encoder, character recognition, and optical instrumentation fields.

STANDARD CELL OUTLINES

Also available as gridded type.





Standard Size Part Numbers	Cell Dimensions		Photo Active Area		(1)Test Voltage (Volts)
	in.	cm.	$in.^2$	cm^2	
S05025	0.20 x 0.10	0.5 x 0.25	.017	0.1	.43
S0505	0.20 x 0.20	0.5 x 0.5	.034	0.2	.43
S0510	0.20 x 0.40	0.5 x 1.0	.068	0.4	.43
S0520	0.20 x 0.80	0.5 x 2.0	.136	0.8	.43
S1005	0.40 x 0.20	1.0 x 0.5	.074	0.4	.43
S1010	0.40 x 0.40	1.0 x 1.0	.148	0.9	.43
S1020	0.40 x 0.80	1.0 x 2.0	.296	1.9	.43
S2020	0.80 x 0.80	2.0 x 2.0	.620	3.8	.43
S2900	1.125 Dia.	2.86	.88	5.7	.43
S2901	Quarter Section of S2900	—	.22	1.4	.43

NOTE: (1) Irradiance: 100 mW/cm^2, AM1 solar radiation.

Part Number Code for Ordering Silicon Light Sensors

EXAMPLE: S 05 05 G E 6 PL

Silicon	"A" Width	"B" Length	Gridded Type	Device Type	Minimum Conversion Efficiency	Leads If Desired
(Outline L-2)	05 = 0.20" (0.5 cm) 10 = 0.40" (1.0 cm) 20 = 0.80" (2.0 cm)		Add "G" for cells 0.4" x 0.4" (1.0 x 1.0 cm) and larger	"E" P on N	5% to 10% (6 = 6%, etc.)	PL — (Pigtail Leads)

TYPICAL PERFORMANCE CHARACTERISTICS								
STANDARD SILICON PHOTOCELL								
PARAMETER	**SYMBOL**	**UNIT**	**TEST CONDITION**	**S05025**	**S0505**	**S0510**	**S0520**	**S1005**
Short Circuit Current	I_{SC}	mA	100mW/cm^2 Am 1 Solar Radiation	1.8	3.8	7.5	15.0	7.5
Short Circuit Current	I_{SC}	mA	100 fc, Tungsten @ 2870 K Am 1 Solar Radiation	0.07	0.13	0.27	0.54	0.27
Open Circuit Voltage	V_{OC}	Volts	100mW/cm^2 Am 1 Solar Radiation	0.43	0.43	0.43	0.43	0.43
Forward Voltage	V_F	Volts	I_F = 1 mA	0.50	0.50	0.42	0.42	0.42
Dark Current	I_D	¼A	V_R = 0.1 V	0.3	0.5	0.6	0.8	0.6
Capacitance	C_T	nF	V_R = 0 V	1.5	2.4	5.0	10.0	5.0
Responsivity	R_e	A/W	»p = 900 nm,	0.48	0.48	0.48	0.48	0.48

STANDARD SILICON PHOTOCELLS (continued)						
PARAMETER	**SYMBOL**	**UNIT**	**TEST CONDITION**	**S1010**	**S1020**	**S2020**
Short Circuit Current	I_{SC}	mA	100mW/cm^2 Am 1 Solar Radiation	17.0	35.0	72.0
Short Circuit Current	I_{SC}	mA	100 fc, Tungsten @ 2870 °K Am 1 Solar Radiation	0.55	1.10	2.2
Open Circuit Voltage	V_{OC}	Volts	100mW/cm^2 Am 1 Solar Radiation	0.43	0.43	0.43
Forward Voltage	V_F	Volts	I_F = 1 mA	0.42	0.40	0.30
Dark Current	I_D	¼A	V_R = 0.1 V	0.8	1.8	25.0
Capacitance	C_T	nF	V_R = 0 V	20.0	25.0	70.0
Responsivity	R_e	A/W	»p = 900 nm,	0.48	0.48	0.48