

VTS-2 PROCESS

LOW CAPACITANCE LARGE AREA PHOTODIODE

FEATURES

- Visible to IR spectral range.
- Response @ 940nm, 0.54 A/W, typ.
- Useable with visible and IR LEDs.
- 1-2% linearity over 3 to 4 decades.
- Moderate shunt resistance.
- Low capacitance.
- Fast response.
- Large area cells.
- Unmounted cells with and without flexible leads.
- Solderable contacts.

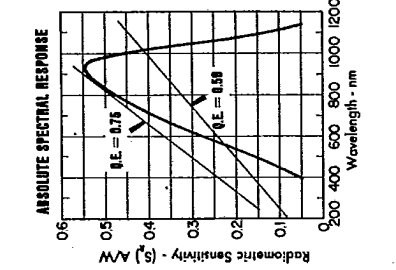
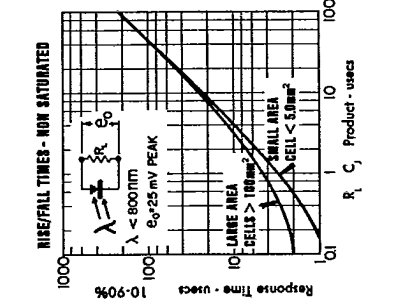
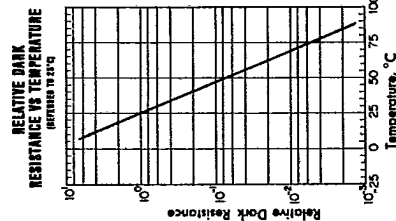
PRODUCT DESCRIPTION

This series of P on N large area silicon diodes is intended for use in the photovoltaic mode but may be used with a small reverse bias. They have excellent response in the infrared region and are well matched to IR LEDs. The low capacitance of these units permits fast response time when high load resistances are required. These cells have moderate shunt resistance which provides low offset gain in transimpedance op-amp circuits. All cells with solderable contacts are available as chips or with flexible flying leads.

GENERAL CHARACTERISTICS

Data Typical Except as Noted

PARAMETER	SYM.	MOUNTED AND UNMOUNTED PHOTOCELLS	UNITS
OPEN CIRCUIT VOLTAGE, 100c, 2850K SOURCE	V_{oc}	330	mV
SPECTRAL RESPONSE - PEAK	λ_{pk}	925	nm
APPLICATION RANGE	λ_{range}	400-1100	nm
RADIOMETRIC SENSITIVITY @ PEAK	S_{pk}	0.55	A/W
TEMPERATURE COEFFICIENT SHORT CIRCUIT CURRENT	TCIL	+0.2	%/°C
OPEN CIRCUIT VOLTAGE 2850K SOURCE	TCOCV	-2.0	mV/°C
SHUNT RESISTANCE	TCRSH	-11.0	%/°C



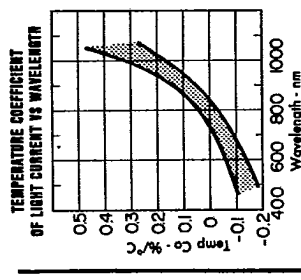
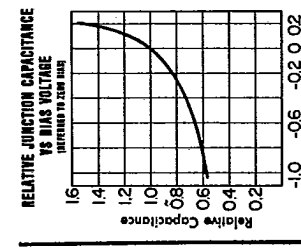
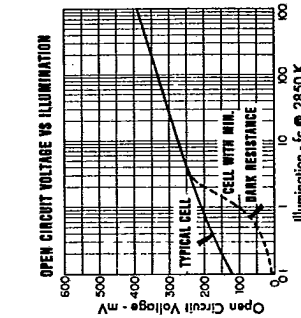
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ELECTRO-OPTICAL CHARACTERISTICS (at 25°C)

PART NO. (see Note 7) or Part Number	DIMENSIONS ^a						Light Current				Dark Current I _D	Dark Resistance R _D	Junction Capacitance C _J	NOTES	
	MILLIMETERS		INCHES		μA	mA	100 fA/cm ² Short Circuit	μA							
	L	W	L	W	Active Area	Area	min	typ.	max	typ.					
CASE NO.	L	W	L	W	Active Area	Area	min	typ.	max	typ.	max	typ.	max	typ.	typ.
UNMOUNTED CELLS ⁽¹⁰⁾															
VTS-80	44A	20.3	20.3	382	0.800	0.800	0.007	—	210	250	3.25	0.2	1.0	0.3	5.0
VTS-81	44C	20.3	10.2	187	0.800	0.400	0.290	—	100	120	1.60	0.1	0.5	0.6	2.3
VTS-82	44A	10.2	10.2	93	0.400	0.400	0.144	—	50	60	0.74	0.05	0.2	1.2	1.0
VTS-83	44C	20.3	5.1	85	0.800	0.200	0.132	—	46	55	0.69	0.05	0.2	1.2	1.0
VTS-84	44C	10.2	5.1	42	0.400	0.200	0.065	—	23	27	0.35	0.04	0.1	1.5	0.60
VTS-85	44A	5.1	5.1	21	0.200	0.200	0.032	—	12	14	0.17	0.02	0.1	3.0	0.36
VTS-86	44B	25.4	5.1	10	0.100	0.200	0.015	—	5.5	0.065	0.085	0.01	0.1	6.0	0.16
VTS-87	44B	2.2	5.1	8.5	0.087	0.200	0.013	—	4.7	0.055	0.074	0.01	0.1	6.0	0.13
VTS-90	44B	12.7	3.18	3.2	0.050	0.125	0.005	—	1.7	0.014	0.019	0.005	0.1	12	0.07
VTS-91	44C	10.2	2.54	16.5	0.400	0.100	0.026	—	9.0	0.10	0.13	0.04	0.2	1.5	0.30
VTS-92	44C	15.2	2.54	25	0.600	0.100	0.039	—	13.5	0.15	0.20	0.04	0.2	1.5	0.45
VTS-93	44C	20.3	2.54	34	0.800	0.100	0.052	—	19	0.18	0.23	0.04	0.2	1.5	0.60
VTS-94	44C	34.9	2.54	53	1.375	0.100	0.082	—	29	0.32	0.42	0.02	0.1	3.0	1.10
VTS-95	44C	31.8	3.8	88	1.25	0.150	0.136	—	48	0.55	0.72	0.04	0.2	1.5	1.7
VTS-96	44C	15.2	10.2	139	0.600	0.400	0.215	—	75	0.89	1.15	0.1	0.4	0.6	2.0
MOUNTED CELLS															
VTS 1188	12	—	—	11	—	—	0.017	12.5	16	—	0.28	—	0.250	—	0.18
VTS 1188L	—	—	—	11	—	—	0.017	12.5	16	—	0.28	0.01	0.05	6.0	0.18
VTS 4085H	13	—	—	21	—	—	0.032	11.4	15	—	0.20	0.015	0.05	4.0	0.35
VTS 4085S	—	—	—	21	—	—	0.032	11.4	15	—	0.20	0.015	0.05	4.0	0.35
VTS 6085/ 2IR	15B	—	—	20	—	—	0.031	—	3.6	0.045	0.055	5.0	10.0	0.30	0.30
VTS 7080A	16	—	—	278	—	—	0.431	—	90	1.2	1.5	0.075	2.0	0.8	3.75

REFER TO SPECIFICATION NOTES, PAGE 11.



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