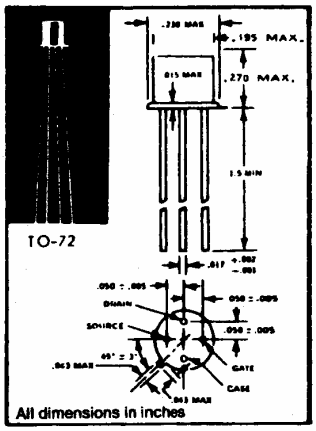
FOTOFET™
SILICON EPITAXIAL JUNCTION N-CHANNEL FIELD EFFECT TRANSISTOR

FF627

GEOMETRY 400

- **ULTRA HIGH SENSITIVITY**
- **LOW DARK CURRENT**
- **FAST RESPONSE**
- **PHOTOTUBE REPLACEMENT**
- **FLAT GLASS TOP FOR EXTERNAL OPTICS**



ACTIVE AREA .0065 SQ. CM.
AT DIE SURFACE SENSITIVITY .3μA/μW

ELECTRICAL DATA ABSOLUTE MAXIMUM RATINGS

Drain to Source Voltage	BV_{DSO}	15 Volts
Drain to Gate Voltage	BV_{DGO}	15 Volts
Gate to Source Voltage	BV_{GSO}	-10 Volts
D.C. Forward Gate Current	I_{GF}	50 mA
Junction Temp. (operating and storage)	T_J	-65°C to +200°C
Power Dissipation (free air)	P_D	400mW
Lead Temp. (@ 1/16" ± 1/32" from case)	T_L	240°C for 10 sec.
Derating Factor From 200°C	D_F	0.43°C/mW

ELECTRICAL CHARACTERISTICS: T_A = 25°C

PARAMETER	SYMBOL	CONDITION	FF 627 Min.	FF 627 Typ.	FF 627 Max.	UNITS
Gate Sensitivity[4]	S_G	V_{DS} = 10V, V_{GS} = 0, λ = 0.9 microns	6.4	16	24	μA/mW/cm²
Gate Current (Light)[1]	λI_g	V_{DS} = 10V, V_{GS} = OV	10	25	37.5	nA/FC
Drain Sensitivity[5]	S_D	V_{DS} = 10V, V_{GS} = 0, R_G = 1MΩ	-	500	--	mA/mW/cm²
Drain Current (Light)[1]	λI_d	V_{DS} = 10V, V_{GS} = OV, R_G = 1MΩ	–	800	–	μA/FC
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 10V, V_{GS} = 0	8.0	25		mA
Transconductance	g_m	V_{DS} = 10V, V_{GS} = 0, f = 1 kHz	8000	–	–	μmho
Rise Time[2]	T_R	V_{DS} = 10V, R_L = R_G = 100Ω	–	30	–	nsec
Fall Time[3]	T_F	V_{DS} = 10V, R_L = R_G = 100Ω	–	50	–	nsec
Pinch-Off Voltage	V_{PO}	V_{DS} = 10V, I_{DS} = 0.1μA	1.0	2.5	5.0	Volts
Gate to Source Cap.	C_{GS}	V_{GS} = –10V, f = 140 kHz	–	–	35	pfd
Gate to Drain Cap.	C_{GD}	V_{GD} = –10V, f = 140 kHz	–	–	20	pfd
Gate Leakage Current (Dark)	I_{GSS}	V_{GS} = –10V, V_{DS} = 0	–	1.0	3.0	nA
On Resistance	R_{DS}	V_{DS} = 0.1V, V_{GS} = 0	–	100	–	Ohms

[1] Tungsten Lamp 2800° K Color Temp. [2] GaAs Diode Source [3] Directly Proportional to R_G
[4] Gate Current per unit Radient Power Density at Lens Surface [5] Drain Current per unit Radient Power Density (λ = 0.9 microns)

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