



FOTOFET™
SILICON EPITAXIAL JUNCTION
N-CHANNEL FIELD EFFECT TRANSISTOR

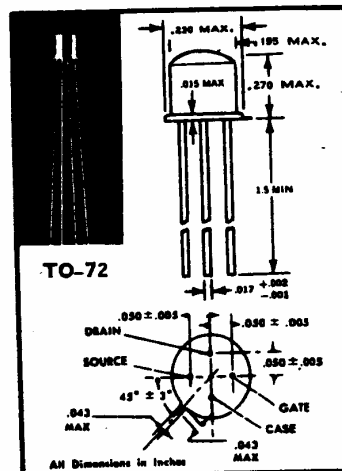
FF102

GEOMETRY 282

- HIGH SENSITIVITY
- LOW DARK CURRENT
- FAST RESPONSE
- PHOTOTUBE REPLACEMENT

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	400 mW
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



ACTIVE AREA .0013 SQ. CM.

AT DIE SURFACE SENSITIVITY = .3μA/μW

ELECTRICAL CHARACTERISTICS: T_A = 25°C

PARAMETER	SYMBOL	CONDITION	FF102			UNITS
			Min.	Typ.	Max.	
Gate Sensitivity ⁴	S _G	V _{DS} = 10V, V _{GS} = 0, λ = 0.9 microns	4.0	25	—	μA/mW/cm ²
Gate Current (Light) ¹	λ _{Ig}	V _{DS} = 10V, V _{GS} = 0V	7.5	—	—	nA/FC
Drain Sensitivity ⁵	S _D	V _{DS} = 10V, V _{GS} = 0, R _G = 1MΩ	—	8.0	—	mA/mW/cm ²
Drain Current (Light) ¹	λ _{Id}	V _{DS} = 10V, V _{GS} = 0V, R _G = 1MΩ	—	15	—	μA/FC
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 10V, V _{GS} = 0	0.8	3.0	5.0	mA
Transconductance	g _m	V _{DS} = 10V, V _{GS} = 0, f = 1 kHz	800	1500	—	μmho
Rise Time ²	T _R	V _{DS} = 10V, R _L = 1K, R _G = 1K	—	30	—	nsec
Fall Time ³	T _F	V _{DS} = 10V, R _L = 1K, R _G = 1K	—	50	—	nsec
Pinch-Off Voltage	V _{PO}	V _{DS} = 10V, I _{DSS} = 0.1μA	1.0	3.0	6.0	Volts
Gate to Source Cap.	C _{GS}	V _{GS} = -10V, f = 140 kHz	—	—	8.0	pf
Gate to Drain Cap.	C _{GD}	V _{GD} = -10V, f = 140 kHz	—	—	5.0	pf
Gate Leakage Current (Dark)	I _{GSS}	V _{GS} = -10V, V _{DS} = 0	—	0.05	1.0	nA
On Resistance	R _{DS}	V _{DS} = 0.1V, V _{GS} = 0	—	1K	—	Ohms

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

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