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# P1086

## P-Channel Switch

- This device is designed for low level analog switching sample and hold circuits and chopper stabilized amplifiers.
- Sourced from process 88.

TO-92

D S G

## Absolute Maximum Ratings $T_C$=25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{DG}$ | Drain-Gate Voltage | - 30 | V |
| $V_{GS}$ | Gate-Source Voltage | 30 | V |
| $I_{GF}$ | Forward Gate Current | 50 | mA |
| $T_J$, $T_{STG}$ | Operating and Storage Junction Temperature Range | -55 ~ +150 | °C |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**NOTES:**
1. These ratings are based on a maximum junction temperature of 150 degrees C.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

## Electrical Characteristics $T_C$=25°C unless otherwise noted

| Symbol | Parameter | Test Condition | | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| $BV_{GSS}$ | Gate-Source Breakdown Voltage | $V_{DS}$ = 0V, IG = 1μA | | 30 | | | V |
| $I_{GSS}$ | Gate Reverse Current | $V_{GS}$ = 15V | | | | 2 | nA |
| $I_D$(off) | Drain Cutoff Leakage Current | $V_{DS}$ = 15V, $V_{GS}$ = 12V | | | | 10 | nA |
| | | | T = +85°C | | | 0.5 | μA |
| $I_{DGO}$ | Drain-Gate Leakage Current | $V_{DG}$ = 15V, $I_S$ = 0 | | | | 2 | nA |
| | | | T = +85°C | | | 0.1 | μA |
| $I_{DSS}$ | Zero-Gate Voltage Drain Current | $V_{DS}$ = 20V, $V_{GS}$ = 0V | | 10 | | | mA |
| $V_{GS}$(off) | Gate-Source Cutoff Voltage | $V_{DS}$ = 15V, $I_D$ = 1μA | | | | 10 | V |
| $V_{DS}$(on) | Drain-Source On Voltage | $V_{GS}$ = 0V, $I_D$ = 6mA | | | | 0.5 | V |
| $r_{DS}$(on) | Drain-Source On Resistance | $V_{GS}$ = 0V, $I_D$ = 1mA | | | | 75 | Ω |
| $r_{ds}$(on) | Drain-Source On Resistance | $V_{GS}$ = 0V, $I_D$ = 0, f = 1kHz | | | | 75 | Ω |
| $C_{iss}$ | Input Capacitance | $V_{DS}$ = 15V, $V_{GS}$ = 0V, f = 1MHz | | | | 45 | pF |
| $C_{rss}$ | Reverse Transfer Capacitance | $V_{DS}$ = 0V, $V_{GS}$ = 12V, f = 1MHz | | | | 10 | pF |
| $t_d$(on) | Trun On Time | $V_{DD}$ = -6V, $V_{GS}$(off) = +12V, $R_L$ = 910Ω, $I_D$(on) = 6mA | | | | 15 | ns |
| $t_r$ | Rise Time | | | | | 20 | ns |
| $t_d$(off) | Trun Off Time | | | | | 15 | ns |
| $t_f$ | Fall Time | | | | | 50 | ns |

## Thermal Characteristics $T_A$=25°C unless otherwise noted

| Symbol | Parameter | Max. | Units |
|---|---|---|---|
| $P_D$ | Total Device Dissipation<br>Derate above 25°C | 350<br>2.8 | mW<br>mW/°C |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case | 125 | °C/W |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 357 | °C/W |

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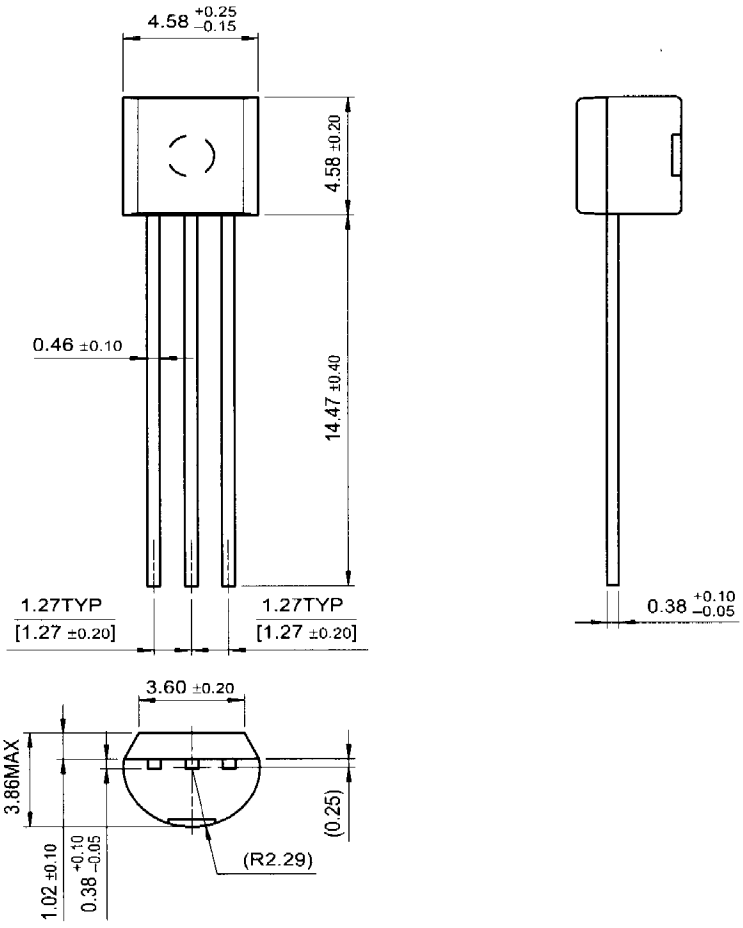
4.58 +0.25 −0.15
4.58 ±0.20
0.46 ±0.10
14.47 ±0.40
1.27TYP
[1.27 ±0.20]
1.27TYP
[1.27 ±0.20]
0.38 +0.10 −0.05
3.60 ±0.20
3.86MAX
(0.25)
(R2.29)
1.02 ±0.10
0.38 +0.10 −0.05