

Linear Systems replaces discontinued Siliconix J175

The J175 is a single P-Channel JFET switch

This p-channel analog switch is designed to provide low on-resistance and fast switching. When used in combination with the complimentary J/SST111 n-channel family, the J175 simplifies series-shunt switching applications

J175 Benefits:

- Low Error Voltage
- High-Speed Analog Circuit Performance
- Negligible "Off-Error," Excellent Accuracy
- Good Frequency Response
- Eliminates Additional Buffering

J175 Applications:

- Analog Switches
- Choppers
- Sample-and-Hold
- Normally "On" Switches
- Current Limiters

FEATURES

DIRECT REPLACEMENT FOR SILICONIX J175

LOW ON RESISTANCE $r_{DS(on)} \leq 125\Omega$

LOW GATE OPERATING CURRENT $I_{D(off)} = 10pA$

FAST SWITCHING $t_{(ON)} 25ns$

ABSOLUTE MAXIMUM RATINGS
@ 25°C (unless otherwise noted)

Maximum Temperatures

Storage Temperature -55°C to +150°C

Operating Junction Temperature -55°C to +135°C

Maximum Power Dissipation

Continuous Power Dissipation 350mW

MAXIMUM CURRENT

Gate Current (Note 1) $I_G = -50mA$

MAXIMUM VOLTAGES

Gate to Drain Voltage $V_{GDS} = 30V$

Gate to Source Voltage $V_{GSS} = 30V$

J175 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

| SYMBOL | CHARACTERISTIC | MIN | TYP. | MAX | UNITS | CONDITIONS |
|---------------|------------------------------------|-----|-------|-----|-------|-------------------------------|
| BV_{GSS} | Gate to Source Breakdown Voltage | 30 | -- | -- | V | $I_G = -1\mu A, V_{DS} = 0V$ |
| $V_{GS(F)}$ | Gate to Source Forward Voltage | -- | -0.7 | -- | | $I_G = -1mA, V_{DS} = 0V$ |
| $V_{GS(off)}$ | Gate to Source Cutoff Voltage | 3 | -- | 6 | | $V_{DS} = -15V, I_D = -10nA$ |
| I_{DSS} | Drain to Source Saturation Current | -7 | -- | -70 | nA | $V_{DS} = -15V, V_{GS} = 0V$ |
| I_{GSS} | Gate Reverse Current | -- | 0.01 | 1 | | $V_{GS} = 20V, V_{DS} = 0V$ |
| I_G | Gate Operating Current | -- | 0.01 | -- | | $V_{DG} = -15V, I_D = -1mA$ |
| $I_{D(off)}$ | Drain Cutoff Current | -- | -0.01 | -1 | | $V_{DS} = -15V, V_{GS} = 0V$ |
| $r_{DS(on)}$ | Drain to Source On Resistance | -- | -- | 125 | | $V_{GS} = 0V, V_{DS} = -0.1V$ |

J175 SWITCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

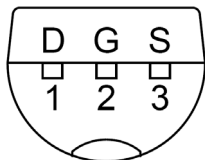
| SYMBOL | CHARACTERISTIC | UNITS | CONDITIONS |
|--------------|--------------------|-------|-----------------------|
| $t_{d(on)}$ | Turn On Time | 10 | ns |
| t_r | Turn On Rise Time | 15 | |
| $t_{d(off)}$ | Turn Off Time | 10 | |
| t_f | Turn Off Fall Time | 20 | |
| | | | See Switching Circuit |

Note 1 - Absolute maximum ratings are limiting values above which J175 serviceability may be impaired.

J175 SWITCHING CIRCUIT PARAMETERS

| | |
|-------------|------|
| V_{DD} | -6V |
| V_{GG} | 12V |
| R_L | 750Ω |
| R_G | 220Ω |
| $I_{D(on)}$ | -7mA |

TO-92 (Bottom View)

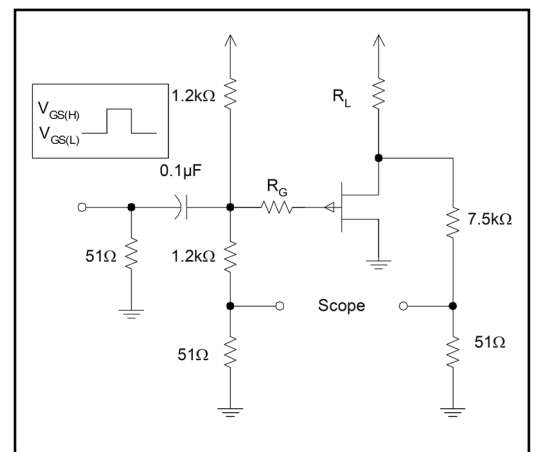


Available Packages:

J175 in TO-92
J175 in bare die.

Please contact Micross for full package and die dimensions

SWITCHING CIRCUIT



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