

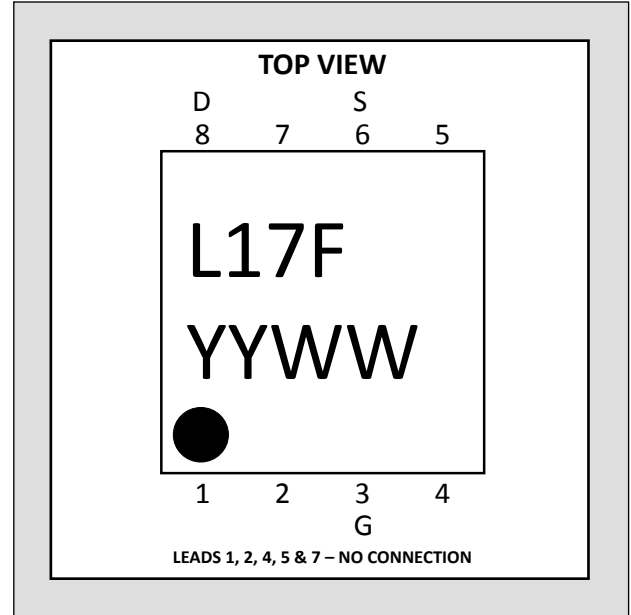
LINEAR SYSTEMS

Improved Standard Products[®]

174DFN Series

MINATURE/NON-MAGNETIC
8-PIN DFN PACKAGE
P-CHANNEL JFET SWITCH

FEATURES	
Replacement For SILICONIX J/SST174 SERIES	
LOW ON RESISTANCE	$r_{DS(on)} \leq 85\Omega$
LOW GATE OPERATING CURRENT	$I_{D(off)} = 10\text{pA}$
ABSOLUTE MAXIMUM RATINGS ¹	
@ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-55 to 150°C
Junction Operating Temperature	-55 to 135°C
Maximum Power Dissipation	
Continuous Power Dissipation ³	350mW
Maximum Currents	
Gate Current	$I_G = -50\text{mA}$
Maximum Voltages	
Gate to Drain Voltage	$V_{GDS} = 30\text{V}$
Gate to Source Voltage	$V_{GSS} = 30\text{V}$



COMMON ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	30			V	$I_G = 1\mu\text{A}, V_{DS} = 0\text{V}$
$V_{GS(F)}$	Gate to Source Forward Voltage		-0.7			$I_G = -1\text{mA}, V_{DS} = 0\text{V}$
I_{GSS}	Gate Reverse Current		0.01	1	nA	$V_{GS} = 20\text{V}, V_{DS} = 0\text{V}$
I_G	Gate Operating Current		0.01			$V_{DG} = -15\text{V}, I_D = -1\text{mA}$
$I_{D(off)}$	Drain Cutoff Current		-0.01	-1		$V_{DS} = -15\text{V}, V_{GS} = 10\text{V}$

SPECIFIC ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	174DFN		175DFN		176DFN		177DFN		UNITS	CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
$V_{GS(off)}$	Gate to Source Cutoff Voltage	5	10	3	6	1	4	0.8	2.25	V	$V_{DS} = -15\text{V}, I_D = -10\text{nA}$
I_{DSS}	Drain to Source Saturation Current	-20	-195	-7	-90	-2	-55	-1.5	-30	mA	$V_{DS} = -15\text{V}, V_{GS} = 0\text{V}$
$r_{DS(on)}$	Drain to Source On Resistance		85		125		250		300	Ω	$V_{GS} = 0\text{V}, V_{DS} = -0.1\text{V}$

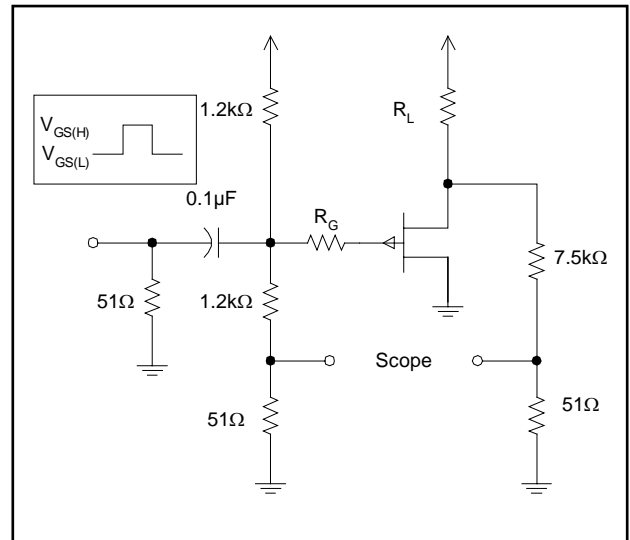
SWITCHING CHARACTERISTICS

SYMBOL	CHARACTERISTIC	TYP	UNITS	CONDITIONS
$t_{d(on)}$	Turn On Time	10	ns	$V_{GS(L)} = 0V$ $V_{GS(H)} = 10V$ See Switching Circuit
t_r	Turn On Rise Time	15		
$t_{d(off)}$	Turn Off Time	10		
t_f	Turn Off Fall Time	20		

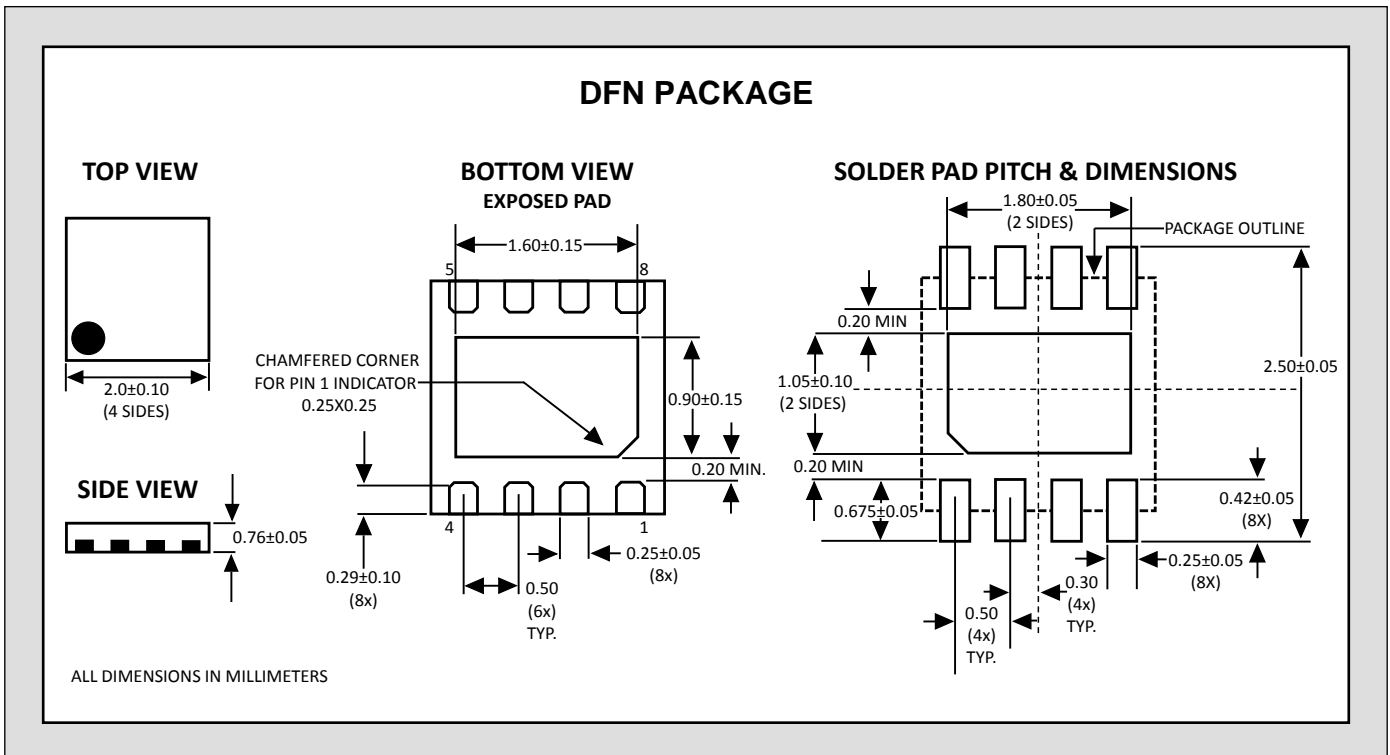
SWITCHING CIRCUIT PARAMETERS

	174-DFN	175-DFN	176-DFN	177-DFN
V_{DD}	-10V	-6V	-6V	-6V
V_{GG}	20V	12V	8V	5V
R_L	560Ω	750Ω	1800Ω	5600Ω
R_G	100Ω	220Ω	390Ω	390Ω
$I_{D(on)}$	-15mA	-7mA	-3mA	-1mA

SWITCHING CIRCUIT



DFN PACKAGE



NOTES

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulsed test: $P_w \leq 300\mu S$ Duty Cycle: 3%
3. Derate 2.8mW/°C above 25 °C.

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