

## P1086, P1087

## P-Channel Silicon Junction Field-Effect Transistor

- Choppers
- Analog Switches

Absolute maximum ratings at  $T_A = 25^\circ\text{C}$ 

Reverse Gate Source & Reverse Gate Drain Voltage	30 V
Continuous Forward Gate Current	50 mA
Continuous Device Power Dissipation	360 mW
Power Derating	3.27 mW/ $^\circ\text{C}$

At  $25^\circ\text{C}$  free air temperature:

## Static Electrical Characteristics

		P1086		P1087		Process PJ99	
		Min	Max	Min	Max	Unit	Test Conditions
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	30		30		V	$I_G = 1\ \mu\text{A}$ , $V_{DS} = 0\text{V}$
Gate Reverse Current	$I_{GSS}$		2		2	nA	$V_{GS} = 15\text{V}$ , $V_{DS} = 0\text{V}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$		10		5	V	$V_{DS} = -15\text{V}$ , $I_D = -1\ \mu\text{A}$
Saturation Drain Current (Pulsed)	$I_{DSS}$	-10		-5.0		mA	$V_{DS} = -20\text{V}$ , $V_{GS} = 0\text{V}$
Drain Cutoff Current	$I_{D(OFF)}$		-10		-10	nA	$V_{DS} = -15\text{V}$ , $V_{GS} = 12\text{V}$ (P1086)
			-0.5		-0.5	$\mu\text{A}$	$V_{GS} = 7\text{V}$ (P1087)
Drain Reverse Current	$I_{DGO}$		2		2	nA	$V_{DG} = -15\text{V}$ , $I_S = 0\text{A}$
			0.1		0.1	$\mu\text{A}$	$V_{DG} = -15\text{V}$ , $I_S = 0\text{A}$
Drain Source ON Voltage	$V_{DS(ON)}$		-0.5		-0.5	V	$V_{GS} = 0\text{V}$ , $I_D = -6\ \text{mA}$ (P1086)
			-0.5		-0.5	V	$V_{GS} = 0\text{V}$ , $I_D = -3\ \text{mA}$ (P1087)
Static Drain Source ON Resistance	$r_{DS(ON)}$		75		150	$\Omega$	$I_D = -1\ \text{mA}$ , $V_{GS} = 0\text{V}$

## Dynamic Electrical Characteristics

Drain Source ON Resistance	$r_{ds(on)}$		75		150	$\Omega$	$I_D = 0$ , $V_{GS} = 0\text{V}$	$f = 1\ \text{kHz}$
Common Source Input Capacitance	$C_{iss}$		45		45	pF	$V_{DS} = -15\text{V}$ , $V_{GS} = 0\text{V}$	$f = 1\ \text{kHz}$
Common Source Reverse Transfer Capacitance	$C_{rss}$		10		10	pF	$V_{DS} = 0\text{V}$ , $V_{GS} = 12\text{V}$ (P1086)	$f = 1\ \text{MHz}$
			10		10	pF	$V_{DS} = 0\text{V}$ , $V_{GS} = 7\text{V}$ (P1087)	

## Switching Characteristics

Turn ON Delay Time	$t_{d(on)}$		15		15	ns	$V_{DD} = -6\text{V}$ , $V_{GS(ON)} = 0\text{V}$ <b>P1086</b> <b>P1087</b>
Rise Time	$t_r$		20		75	ns	
Turn OFF Delay Time	$t_{d(off)}$		15		25	ns	
Fall Time	$t_f$		50		100	ns	
							$V_{GS(OFF)}$ 12      7      V $V_{D(ON)}$ -6      -3      MA $R_L$ 910      1.8K $\Omega$

## TO-226AA Package

Dimensions in Inches (mm)

## Pin Configuration

1 Source, 2 Drain, 3 Gate

## Surface Mount

SMPP1086, SMPP1087