

PRODUCT SUMMARY				
Part Number	V _{GS(off)} (V)	r _{DS(on)} Max (Ω)	I _{D(off)} Typ (pA)	t _{ON} Typ (ns)
2N5432	-4 to -10	5	10	2.5
2N5433	-3 to -9	7	10	2.5
2N5434	-1 to -4	10	10	2.5

FEATURES

- Low On-Resistance: 2N5432 <5 Ω
- Fast Switching—t_{ON}: 2.5 ns
- High Off-Isolation—I_{D(off)}: 10 pA
- Low Capacitance: 11 pF
- Low Insertion Loss

BENEFITS

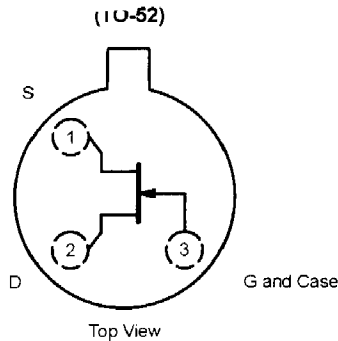
- Low Error Voltage
- High-Speed Analog Circuit Performance
- Negligible "Off-Error," Excellent Accuracy
- Good Frequency Response
- Eliminates Additional Buffering

APPLICATIONS

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

DESCRIPTION

The 2N5432/5433/5434 are suitable for high-performance analog switching and amplifier applications. Breakdown voltage characteristics, low on-resistance, and very fast switching make these devices ideal for a wide range of applications.



ABSOLUTE MAXIMUM RATINGS

Gate-Drain, Gate-Source Voltage -25 V
 Gate Current 100 mA
 Lead Temperature (1/16" from case for 10 sec.) 300°C
 Storage Temperature -65 to 200°C

Operating Junction Temperature -55 to 150°C
 Power Dissipation^a 300 mW

Notes
 a. Derate 2.4 mW/°C above 25°C



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Quality Semi-Conductors

2N5432/5433/5434

SPECIFICATIONS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)										
Parameter	Symbol	Test Conditions	Typ ^a	Limits						Unit
				2N5432		2N5433		2N5434		
				Min	Max	Min	Max	Min	Max	
Static										
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = -1\ \mu\text{A}, V_{DS} = 0\ \text{V}$	-32	-25		-25		-25		V
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 5\ \text{V}, I_D = 3\ \text{nA}$		-4	-10	-3	-9	-1	-4	
Saturation Drain Current ^b	I_{DSS}	$V_{DS} = 15\ \text{V}, V_{GS} = 0\ \text{V}$		150		100		30		mA
Gate Reverse Current	I_{GSS}	$V_{GS} = -15\ \text{V}, V_{DS} = 0\ \text{V}$ $T_A = 150^\circ\text{C}$	-5		-200		-200		-200	pA
			-10		-200		-200		-200	nA
Gate Operating Current ^c	I_G	$V_{DG} = 10\ \text{V}, I_D = 10\ \text{mA}$	-10							pA
Drain Cutoff Current	$I_{D(off)}$	$V_{DS} = 5\ \text{V}, V_{GS} = -10\ \text{V}$ $T_A = 150^\circ\text{C}$	10		200		200		200	pA
			20		200		200		200	nA
Drain-Source On-Voltage	$V_{DS(on)}$	$V_{GS} = 0\ \text{V}, I_D = 10\ \text{mA}$			50		70		100	mV
Drain-Source On-Resistance	$r_{DS(on)}$			2	5		7		10	Ω
Gate-Source Forward Voltage ^c	$V_{GS(F)}$	$I_G = 1\ \text{mA}, V_{DS} = 0\ \text{V}$	0.7							V
Dynamic										
Common-Source Forward Transconductance ^c	g_{fs}	$V_{DS} = 5\ \text{V}, I_D = 10\ \text{mA}$ $f = 1\ \text{kHz}$	17							mS
Common-Source Output Conductance ^c	g_{os}		600							μS
Drain-Source On-Resistance	$r_{ds(on)}$	$V_{GS} = 0\ \text{V}, I_D = 0\ \text{mA}$ $f = 1\ \text{kHz}$			5		7		10	Ω
Common-Source Input Capacitance	C_{iss}	$V_{DS} = 0\ \text{V}, V_{GS} = -10\ \text{V}$ $f = 1\ \text{MHz}$	20		30		30		30	pF
Common-Source Reverse Transfer Capacitance	C_{rss}		11		15		15		15	
Equivalent Input Noise Voltage ^c	\bar{e}_n	$V_{DS} = 5\ \text{V}, I_D = 10\ \text{mA}$ $f = 1\ \text{kHz}$	3.5							nV/ $\sqrt{\text{Hz}}$
Switching										
Turn-On Time ^b	$t_{d(on)}$	$V_{DD} = 1.5\ \text{V}, V_{GS(H)} = 0\ \text{V}$ See Switching Circuit	2		4		4		4	ns
	t_r		0.5		1		1		1	
Turn-Off Time ^b	$t_{d(off)}$		4		6		6		6	
	t_f		18		30		30		30	

Notes

- a Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
- b Pulse test: $PW < 300\ \mu\text{s}$ duty cycle $\leq 3\%$
- c This parameter not registered with JEDEC.