



N-Channel JFETs

2N5484	SST5484
2N5485	SST5485
2N5486	SST5486

PRODUCT SUMMARY				
Part Number	$V_{GS(off)}$ (V)	$V_{(BR)GSS}$ Min (V)	g_{fs} Min (mS)	I_{DSS} Min (mA)
2N/SST5484	-0.3 to -3	-25	3	1
2N/SST5485	-0.5 to -4	-25	3.5	4
2N/SST5486	-2 to -6	-25	4	8

FEATURES

- Excellent High-Frequency Gain: Gps 13 dB (typ) @ 400 MHz – 5485/6
- Very Low Noise: 2.5 dB (typ) @ 400 MHz – 5485/6
- Very Low Distortion
- High AC/DC Switch Off-Isolation

BENEFITS

- Wideband High Gain
- Very High System Sensitivity
- High Quality of Amplification
- High-Speed Switching Capability
- High Low-Level Signal Amplification

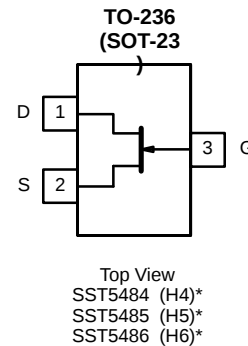
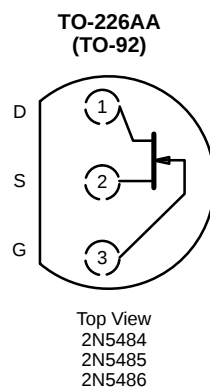
APPLICATIONS

- High-Frequency Amplifier/Mixer
- Oscillator
- Sample-and-Hold
- Very Low Capacitance Switches

DESCRIPTION

The 2N/SST5484 series consists of n-channel JFETs designed to provide high-performance amplification, especially at high frequencies up to and beyond 400 MHz.

The 2N series, TO-226AA (TO-92), and SST series, TO-236 (SOT-23), packages provide low-cost options and are available with tape-and-reel to support automated assembly (see Packaging Information).



*Marking Code for TO-236

ABSOLUTE MAXIMUM RATINGS

Gate-Drain, Gate-Source Voltage -25 V
 Gate Current 10 mA
 Lead Temperature 300°C
 Storage Temperature -65 to 150°C

Operating Junction Temperature -55 to 150°C

Power Dissipation^a 350 mW

Notes

a. Derate 2.8 mW/°C above 25°C

SPECIFICATIONS FOR 2N SERIES (T _A = 25°C UNLESS OTHERWISE NOTED)											
Parameter	Symbol	Test Conditions	Typ ^a	Limits						Unit	
				2N5484		2N5485		2N5486			
				Min	Max	Min	Max	Min	Max		
Static											
Gate-Source Breakdown Voltage	V _{(BR)GSS}	I _G = -1 μA , V _{DS} = 0 V	-35	-25		-25		-25		V	
Gate-Source Cutoff Voltage	V _{GS(off)}	V _{DS} = 15 V, I _D = 10 nA		-0.3	-3	-0.5	-4	-2	-6		
Saturation Drain Current ^b	I _{DSS}	V _{DS} = 15 V, V _{GS} = 0 V		1	5	4	10	8	20	mA	
Gate Reverse Current	I _{GSS}	V _{GS} = -20 V, V _{DS} = 0 V	-0.002		-1		-1		-1	nA	
		T _A = 100°C	-0.2		-200		-200		-200		
Gate Operating Current ^c	I _G	V _{DG} = 10 V, I _D = 1 mA	-20							μA	
Gate-Source Forward Voltage ^c	V _{GS(F)}	I _G = 10 mA , V _{DS} = 0 V	0.8							V	
Dynamic											
Common-Source Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, V _{GS} = 0 V f = 1 kHz		3	6	3.5	7	4	8	mS	
Common-Source Output Conductance ^b	g _{os}				50		60		75	μS	
Common-Source Input Capacitance	C _{iss}	V _{DS} = 15 V, V _{GS} = 0 V f = 1 MHz	2.2		5		5		5	pF	
Common-Source Reverse Transfer Capacitance	C _{rss}		0.7		1		1		1		
Common-Source Output Capacitance	C _{oss}		1		2		2		2		
Equivalent Input Noise Voltage ^c	$\bar{e}_n$	V _{DS} = 15 V, V _{GS} = 0 V f = 100 Hz	10							nV/ √Hz	
High-Frequency											
Common-Source Transconductance	Y _{fs(RE)}	V _{DS} = 15 V V _{GS} = 0 V	f = 100 MHz	5.5	2.5					mS	
			f = 400 MHz	5.5			3		3.5		
Common-Source Output Conductance	Y _{os(RE)}		f = 100 MHz	45		75				μS	
			f = 400 MHz	65			100		100		
Common-Source Input Conductance	Y _{is(RE)}		f = 100 MHz	0.05		0.1				mS	
			f = 400 MHz	0.8			1		1		
Common-Source Power Gain	G _{ps}	V _{DS} = 15 V, I _D = 1 mA f = 100 MHz		20	16	25				dB	
		V _{DS} = 15 V I _D = 4 mA	f = 100 MHz	21			18	30	18		30
			f = 400 MHz	13			10	20	10		20
Noise Figure	NF	V _{DS} = 15 V, V _{GS} = 0 V R _G = 1 MΩ, f = 1 kHz		0.3		2.5		2.5			2.5
		V _{DS} = 15 V, I _D = 1 mA R _G = 1 kΩ, f = 100 MHz		2		3					
		V _{DS} = 15 V I _D = 4 mA R _G = 1 kΩ	f = 100 MHz	1				2			2
			f = 400 MHz	2.5				4			4

**SPECIFICATIONS FOR SST SERIES ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)**

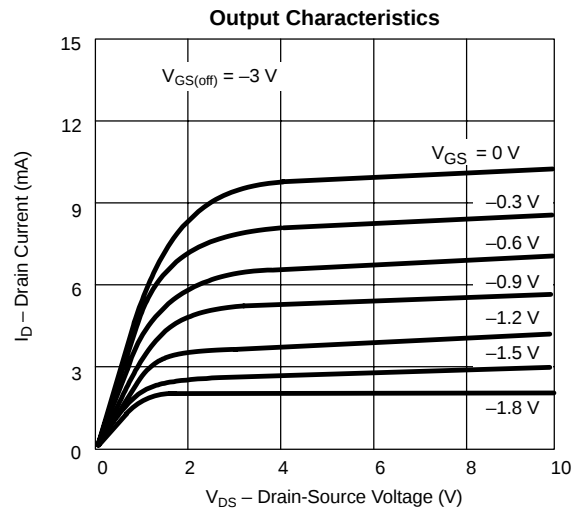
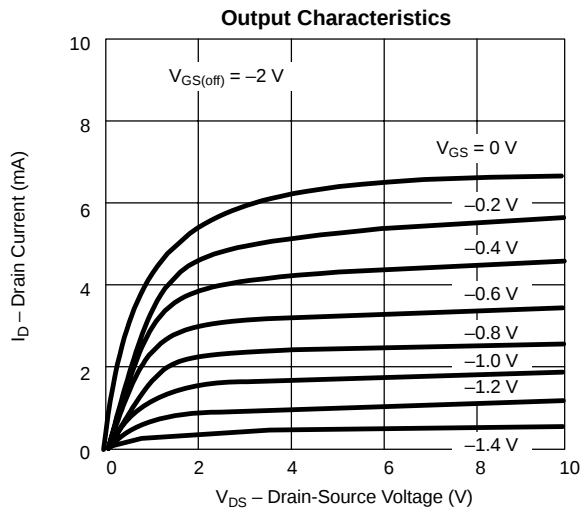
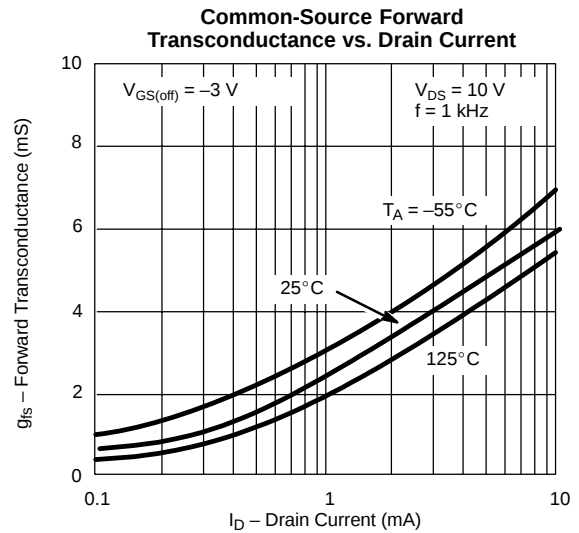
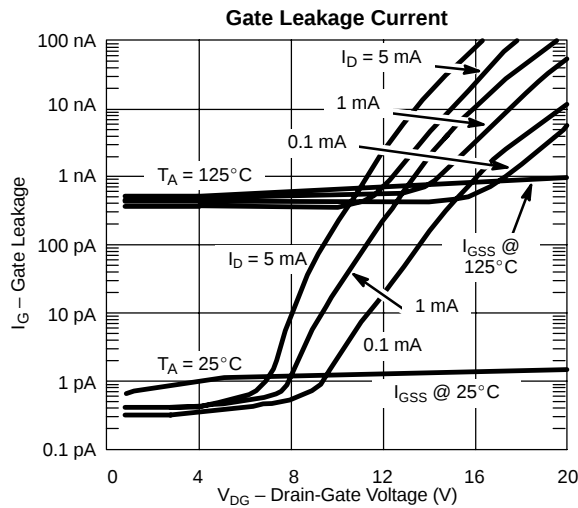
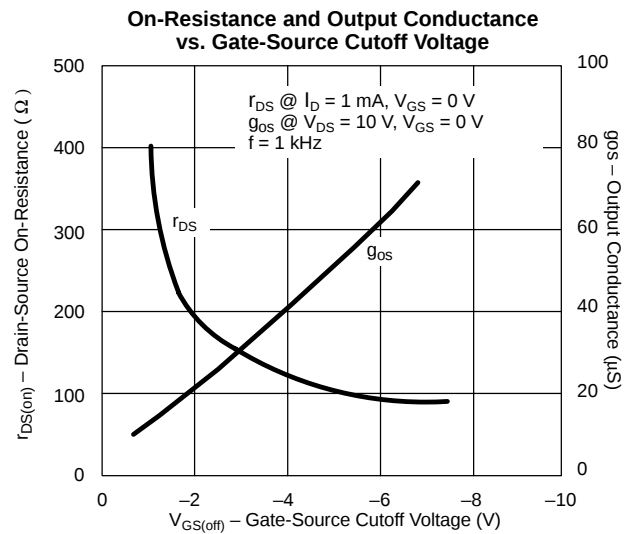
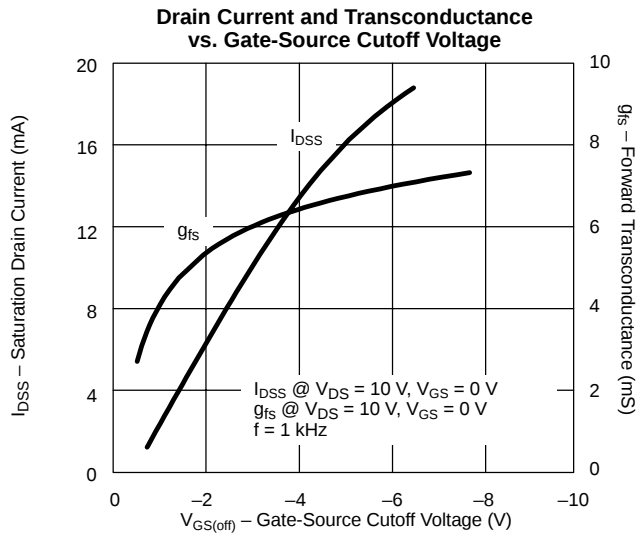
Parameter	Symbol	Test Conditions	Typ ^b	Limits						Unit
				SST5484		SST5485		SST5486		
				Min	Max	Min	Max	Min	Max	
Static										
Gate-Source Breakdown Voltage	V _{(BR)GSS}	I _G = −1 μA , V _{DS} = 0 V	−35	−25		−25		−25		V
Gate-Source Cutoff Voltage	V _{GS(off)}	V _{DS} = 15 V, I _D = 10 nA		−0.3	−3	−0.5	−4	−2	−6	
Saturation Drain Current ^b	I _{DSS}	V _{DS} = 15 V, V _{GS} = 0 V		1	5	4	10	8	20	mA
Gate Reverse Current	I _{GSS}	V _{GS} = −20 V, V _{DS} = 0 V	−0.002		−1		−1		−1	nA
		T _A = 100°C	−0.2		−200		−200		−200	
Gate Operating Current ^c	I _G	V _{DG} = 10 V, I _D = 1 mA	−20							pA
Gate-Source Forward Voltage ^c	V _{GS(F)}	I _G = 10 mA , V _{DS} = 0 V	0.8							V
Dynamic										
Common-Source Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, V _{GS} = 0 V f = 1 kHz		3	6	3.5	7	4	8	mS
Common-Source Output Conductance ^b	g _{os}				50		60		75	μS
Common-Source Input Capacitance	C _{iss}	V _{DS} = 15 V, V _{GS} = 0 V f = 1 MHz	2.2							pF
Common-Source Reverse Transfer Capacitance	C _{rss}		0.7							
Common-Source Output Capacitance	C _{oss}		1							
Equivalent Input Noise Voltage ^c	e _n	V _{DS} = 15 V, V _{GS} = 0 V f = 100 Hz	10							nV/ √Hz
High-Frequency										
Common-Source Transconductance	Y _{fs}	V _{DS} = 15 V V _{GS} = 0 V	f = 100 MHz	5.5						mS
			f = 400 MHz	5.5						
Common-Source Output Conductance	Y _{os}		f = 100 MHz	45						μS
			f = 400 MHz	65						
Common-Source Input Conductance	Y _{is}		f = 100 MHz	0.05						mS
			f = 400 MHz	0.8						
Common-Source Power Gain	G _{ps}	V _{DS} = 15 V, I _D = 1 mA f = 100 MHz		20						dB
		V _{DS} = 15 V I _D = 4 mA	f = 100 MHz	21						
			f = 400 MHz	13						
Noise Figure	NF	V _{DS} = 15 V, V _{GS} = 0 V R _G = 1 MΩ, f = 1 kHz		0.3						
		V _{DS} = 15 V, I _D = 1 mA R _G = 1 kΩ, f = 100 MHz		2						
		V _{DS} = 15 V I _D = 4 mA R _G = 1 kΩ	f = 100 MHz	1						
			f = 400 MHz	2.5						

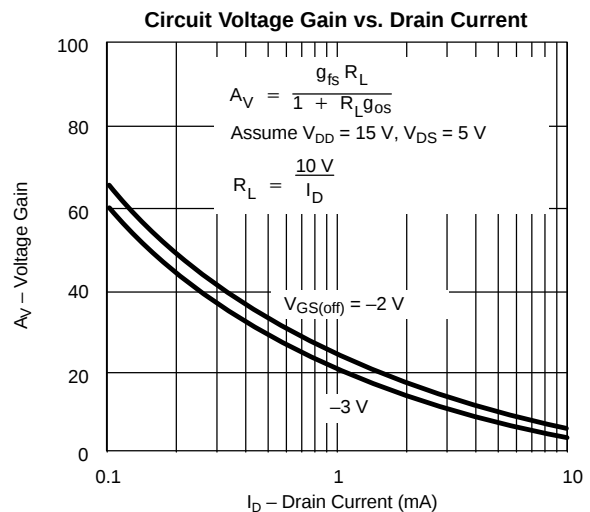
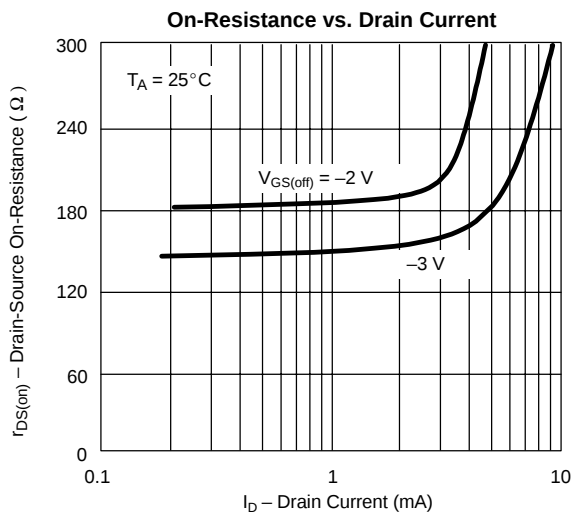
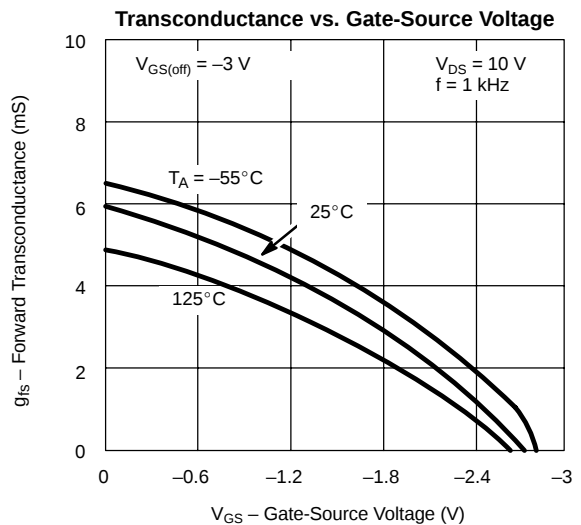
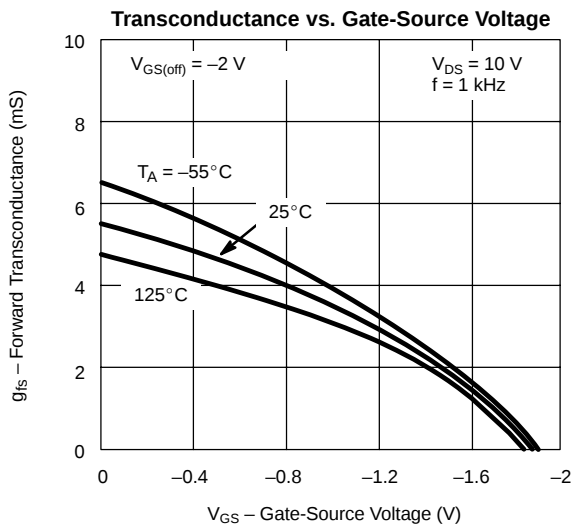
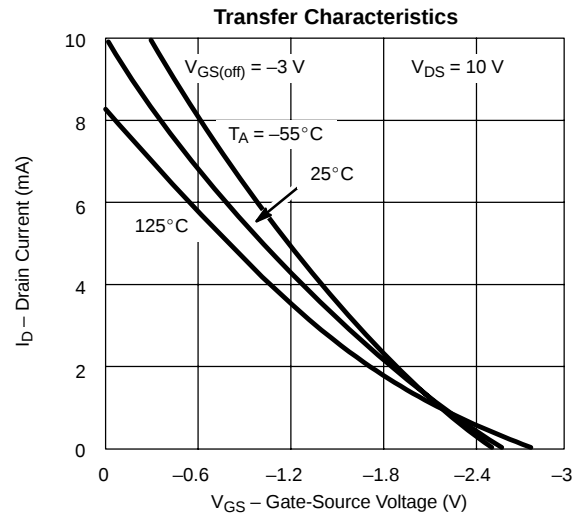
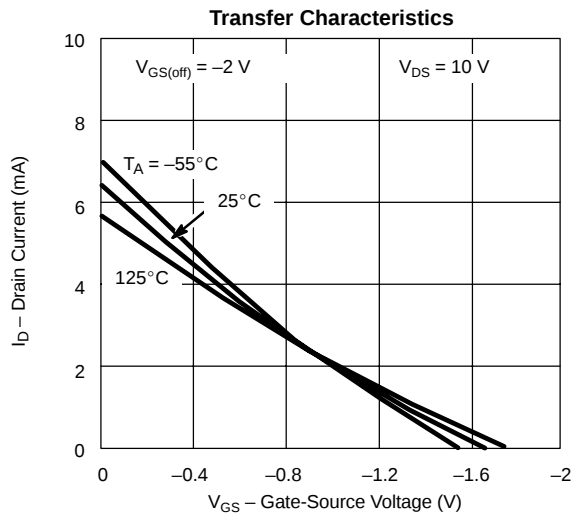
Notes

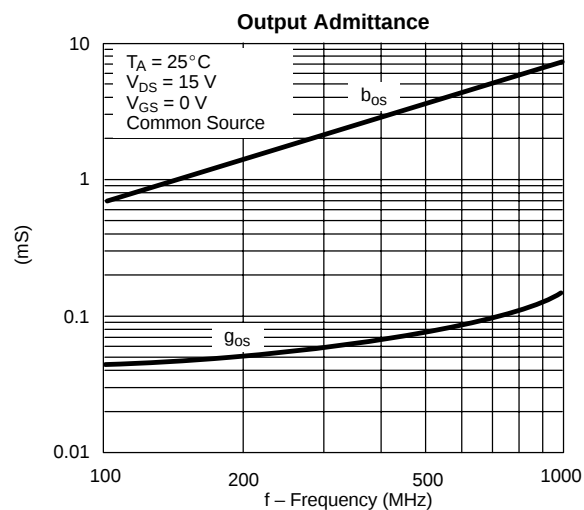
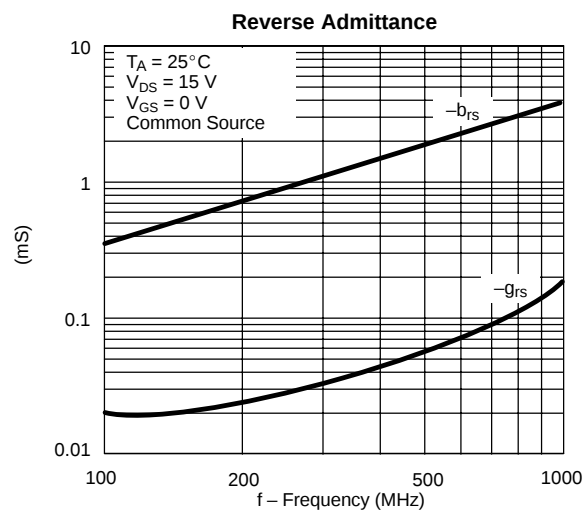
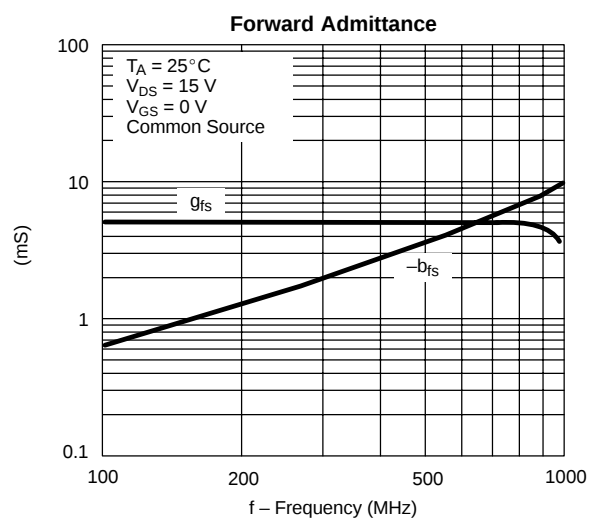
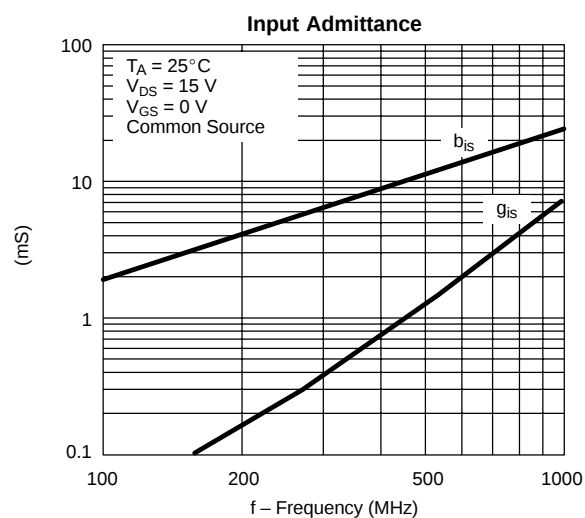
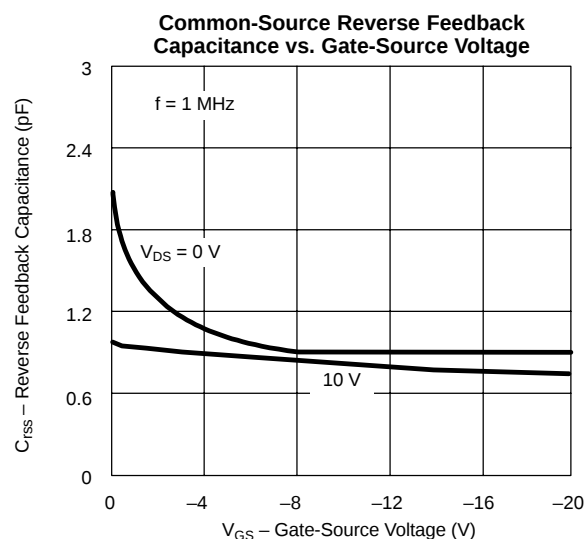
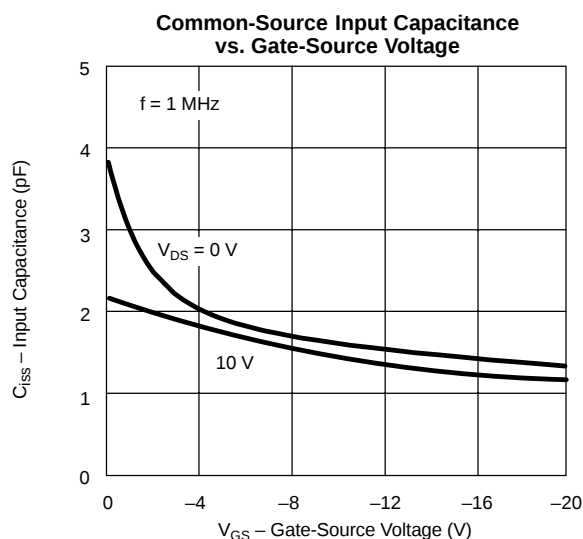
- a. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
b. Pulse test: $PW \leq 300\ \mu\text{s}$ duty cycle $\leq 3\%$.
c. This parameter not registered with JEDEC.

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TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)



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