JAN Qualified N-Channel 60-V (D-S) MOSFETs

PRODUCT SUMMARY			
$V_{(BR)DSS}$ Min (V)	$r_{DS(on)}$ Max (Ω)	$V_{GS(th)}$ (V)	I_D (A)
60	3 @ V_{GS} = 10 V	0.8 to 2	0.99

FEATURES

- Military Qualified
- Low On-Resistance: 1.3 Ω
- Low Threshold: 1.7 V
- Low Input Capacitance: 35 pF
- Fast Switching Speed: 8 ns
- Low Input and Output Leakage

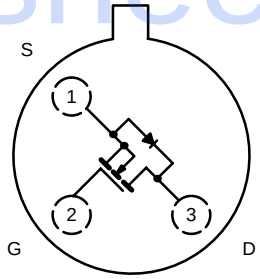
BENEFITS

- Guaranteed Reliability
- Low Offset Voltage
- Low-Voltage Operation
- Easily Driven Without Buffer
- High-Speed Circuits
- Low Error Voltage

APPLICATIONS

- Military Applications
- Direct Logic-Level Interface: TTL/CMOS
- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories, Transistors, etc.
- Battery Operated Systems
- Solid-State Relays

TO-205AD
(TO-39)



Top View

Device Marking
Side View

JAN2N6660*
"S" *fllxxyy*

"S" = Siliconix Logo
f = Factory Code
ll = Lot Traceability
xxyy = Date Code

*Note: or JANTX2N6660
JANTXV2N6660

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C UNLESS OTHERWISE NOTED)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current (T_J = 150°C)	T_C = 25°C	I_D	0.99	A
	T_C = 100°C		0.62	
Pulsed Drain Current[a]		I_{DM}	3	
Power Dissipation	T_C = 25°C	P_D	6.25	W
	T_A = 25°C		0.725	
Thermal Resistance, Junction-to-Ambient[b]		R_{thJA}	170	°C/W
Thermal Resistance, Junction-to-Case		R_{thJC}	20	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	–55 to 150	°C

Notes
a. Pulse width limited by maximum junction temperature.
b. Not required by Military Spec.

SPECIFICATIONS[a]

Parameter	Symbol	Test Conditions	Limits Min	Limits Typ[b]	Limits Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 10 μA	60	75		V
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 1 mA	0.8	1.7	2	V
		T_C = –55°C			2.5	
		T_C = 125°C	0.3			
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20 V			±100	nA
		T_C = 125°C			±500	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 48 V, V_{GS} = 0 V			1	μA
		T_C = 125°C			100	
On-State Drain Current[c]	$I_{D(on)}$	V_{DS} = 10 V, V_{GS} = 10 V		2		A
Drain-Source On-Resistance[c]	$r_{DS(on)}$	V_{GS} = 5 V, I_D = 0.3 A		2	5	Ω
		V_{GS} = 10 V, I_D = 1 A		1.3	3	
		T_C = 125°C		2.4	5.6	
Forward Transconductance[c]	g_{fs}	V_{DS} = 7.5 V, I_D = 0.525 A	170	350		mS
Diode Forward Voltage	V_{SD}	I_S = 0.99 A, V_{GS} = 0 V	0.7	0.8	1.6	V
Dynamic						
Input Capacitance	C_{iss}	V_{DS} = 25 V, V_{GS} = 0 V f = 1 MHz		35	50	pF
Output Capacitance	C_{oss}			25	40	
Reverse Transfer Capacitance	C_{rss}			7	10	
Drain-Source Capacitance	C_{ds}			30		
Switching[d]						
Turn-On Time	t_{ON}	V_{DD} = 25 V, R_L = 23 Ω I_D ≅ 1 A, V_{GEN} = 10 V R_G = 25 Ω		8	10	ns
Turn-Off Time	t_{OFF}			8.5	10	

Notes
a. T_A = 25°C unless otherwise noted.
b. For DESIGN AID ONLY, not subject to production testing.
c. Pulse test: PW ≤ 300 μs duty cycle ≤ 2%.
d. Switching time is essentially independent of operating temperature.
e. For typical characteristics curves see the 2N6659/2N6660, VQ1004J/P data sheet.

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