



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

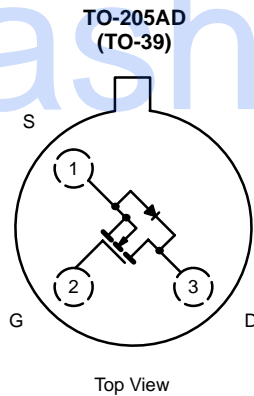
- Military Qualified
- Low On-Resistance: 1.3 Ω
- Low Threshold: 1.7 V
- Low Input Capacitance: 35 pF
- Fast Switching Speed: 8 ns
- Low Input and Output Leakage

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



Device Marking
Side View

JAN2N6660*
"S" flxxyy

"S" = Siliconix Logo
f = Factory Code
// = Lot Traceability
xyxy = Date Code

*Note: or JANTX2N6660
JANTXV2N6660

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

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

Notes

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

SPECIFICATIONS ^a						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ ^b	Max	
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	
		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

- $T_A = 25^\circ\text{C}$ unless otherwise noted.
- For DESIGN AID ONLY, not subject to production testing.
- Pulse test: $PW \leq 300\text{ }\mu\text{s}$ duty cycle $\leq 2\%$.
- Switching time is essentially independent of operating temperature.
- For typical characteristics curves see the 2N6659/2N6660, VQ1004J/P data sheet.

VNDQ06



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