Siliconix

2N7227JANTX/JANTXV

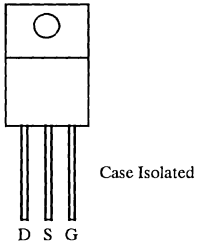
N-Channel Enhancement-Mode Transistors

Product Summary

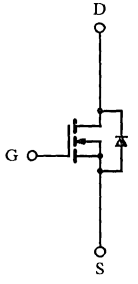
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
400	0.415	14

Parametric limits in accordance with MIL-S-19500/592 where applicable.

TO-254AA
Hermetic Package



Top View



N-Channel MOSFET

Absolute Maximum Ratings (T_C = 25°C Unless Otherwise Noted)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	400	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current (T_J = 150°C)	T_C = 25°C	I_D	14	A
	T_C = 100°C		9	
Pulsed Drain Current		I_{DM}	56	
Avalanche Current		I_{AR}	14	
Maximum Power Dissipation	T_C = 25°C	P_D	150	W
Operating Junction and Storage Temperature Range		T_J, T_{stg}	−55 to 150	°C

Thermal Resistance Ratings

Parameter	Symbol	Limit	Unit
Maximum Junction-to-Case	R_{thJC}	0.83	°C/W

Specifications (T_J = 25°C Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Limit Min	Limit Typ[a]	Limit Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 1000 μA	400			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 μA, T_J = −55°C			5.0	V
		V_{DS} = V_{GS}, I_D = 250 μA, T_J = 25°C	2.0		4.0	V
		V_{DS} = V_{GS}, I_D = 250 μA, T_J = 125°C	1.0			V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20 V			±100	nA
		V_{DS} = 0 V, V_{GS} = ±20 V, T_J = 125°C			±200	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 360 V, V_{GS} = 0 V			25	μA
		V_{DS} = 360 V, V_{GS} = 0 V, T_J = 125°C			250	μA
		V_{DS} = 400 V, V_{GS} = 0 V, T_J = 125°C			1000	μA
Drain-Source On-State Resistance[b]	$r_{DS(on)}$	V_{GS} = 10 V, I_D = 14 A			0.415	Ω
		V_{GS} = 10 V, I_D = 9 A, T_J = 125°C			0.68	Ω
Dynamic						
Total Gate Charge[c]	Q_g	V_{DS} = 200 V, V_{GS} = 10 V, I_D = 14 A	52		110	nC
Gate-Source Charge[c]	Q_{gs}		5		18	nC
Gate-Drain Charge[c]	Q_{gd}		25		65	nC
Turn-On Delay Time[c]	$t_{d(on)}$	V_{DD} = 200 V, R_L = 14.2 Ω, I_D ≅ 14 A, V_{GEN} = 10 V, R_G = 2.35 Ω			35	ns
Rise Time[c]	t_r				190	ns
Turn-Off Delay Time[c]	$t_{d(off)}$				170	ns
Fall Time[c]	t_f				130	ns
Source-Drain Diode Ratings and Characteristics						
Continuous Current	I_S				14	A
Pulsed Current	I_{SM}				56	A
Diode Forward Voltage[b]	V_{SD}	I_F = 14 A, V_{GS} = 0 V			1.7	V
Reverse Recovery Time	t_{rr}	I_F = 14 A, di/dt = 100 A/μs			1200	ns

Notes:
a. For design aid only; not subject to production testing.
b. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
c. Independent of operating temperature.