

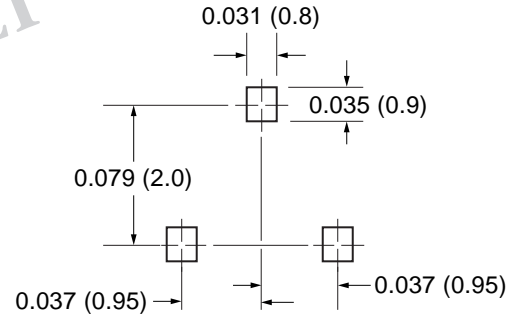
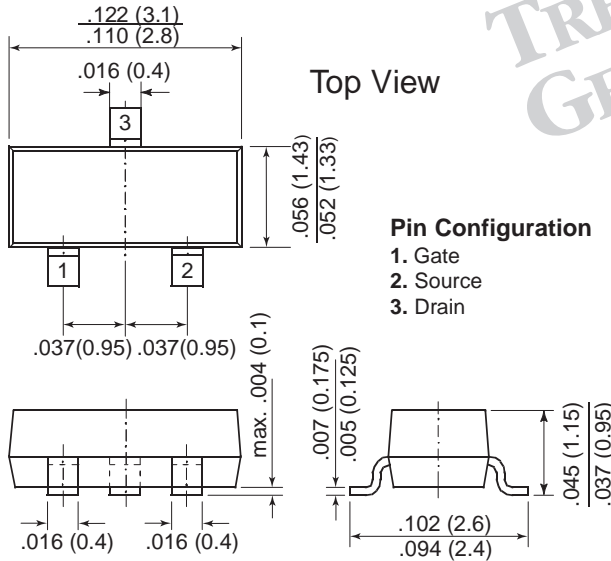


N-Channel Enhancement-Mode MOSFET

Low $V_{GS(th)}$ V_{DS} 50V $R_{DS(on)}$ 3.5 Ω I_D 220mA

TO-236AB (SOT-23)

TRENCH
GENFET®



Mechanical Data

Case: SOT-23 Plastic package
Weight: 0.008 grams
Marking Code: SS

Features

- Advanced Trench Process Technology
- High density cell design for ultra-low on-resistance
- High input impedance
- High-speed switching
- Logic Level

Maximum Ratings and Thermal Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	50	V
Drain-Gate Voltage ($R_{GS} \leq 20k\Omega$)	V_{DGR}	50	V
Gate-Source-Voltage	V_{GS}	± 20	V
Continuous Drain Current ($T_J = 150^\circ\text{C}$)	I_D	220	mA
Pulsed Drain Current ⁽¹⁾	I_{DM}	880	mA
Maximum Power Dissipation	P_D	350	mW
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$
Maximum Junction-to-Ambient Thermal Resistance	$R_{\theta JA}$	357	$^\circ\text{C/W}$

Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250μA	50	—	—	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 1mA	0.8	—	1.6	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V	—	—	±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 50V, V _{GS} = 0V	—	—	0.5	μA
		V _{DS} = 50V, V _{GS} = 0V, T _C = 125°C	—	—	5	
		V _{DS} = 30V, V _{GS} = 0V	—	—	100	nA
Drain-Source On-State Resistance ⁽¹⁾	R _{DS(on)}	V _{GS} = 10V, I _D = 220mA	—	—	3.5	Ω
		V _{GS} = 4.5V, I _D = 220mA	—	—	6	
Forward Transconductance ⁽¹⁾	g _{fs}	V _{DS} = 10V, I _D = 220mA	0.12	0.45	—	S
Dynamic						
Turn-On Delay Time	t _{d(on)}	V _{DD} = 30V, I _D = 290mA, V _{GEN} = 10V R _G = 50Ω	—	—	8	ns
Rise Time	t _r		—	—	12	
Turn-Off Delay Time	t _{d(off)}		—	—	16	
Fall Time	t _f		—	—	22	
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V f = 1.0MHz	—	—	60	pF
Output Capacitance	C _{oss}		—	—	25	
Reverse Transfer Capacitance	C _{rss}		—	—	10	
Source-Drain Diode						
Maximum Continuous Source Current	I _S	—	—	—	220	mA
Maximum Pulsed Source Current ⁽¹⁾	I _{SM}	—	—	—	880	mA
Diode Forward Voltage ⁽¹⁾	V _{SD}	I _S = 440mA, V _{GS} = 0V	—	0.8	1.4	V

Notes:

(1) Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%

